AGENDA

ALISO VIEJO CITY COUNCIL
WEDNESDAY, DECEMBER 3, 2025
7:00 PM REGULAR MEETING

CITY HALL
COUNCIL CHAMBERS
12 JOURNEY
ALISO VIEJO, CA

Mayor Tiffany Ackley
Mayor Pro Tem Max Duncan
Councilmember Garrett Dwyer
Councilmember Mike Munzing
Councilmember Tim Zandbergen

WELCOME to the City of Aliso Viejo City Council meeting. Those persons wishing to address the City Council are requested to complete and submit to the City Clerk a “Request to Address City Council” form available at the entrance to the City Council Chambers. Speakers will be called at the appropriate time as their interested matter is heard. COMMENTS WILL BE LIMITED TO THREE MINUTES PER SPEAKER. Council proceedings are recorded.

It is the City's intention to comply with the Americans with Disabilities Act (ADA) . If you need special assistance to participate in the meeting, the City will make reasonable arrangements to ensure accessibility and/or accommodations. [28 CFR 35.102-35.104 ADA Title II] Please contact the City Clerk's Office at (949) 425-2505 at least 48 hours prior to the meeting.

Regular meetings of the City Council are held on the first and third Wednesday of the month at the City Hall Council Chambers, 12 Journey, Aliso Viejo. Copies of the agenda are available in the lobby at City Hall on the Thursday preceding a regularly scheduled City Council meeting. All communications received by the City regarding an agenda item have been included in the agenda materials. Supplemental documents relating to specific agenda items, including communications received after agenda delivery, are presented at the dais and in the Public Copy agenda binder at the time of the meeting. Supplemental documents are also available for review in the City Clerk's office, 12 Journey, Aliso Viejo. For more information, please contact City Hall at (949) 425-2505.

This meeting will be broadcast live on Cox Communications Channel 851, AT&T U-Verse Channel 99 and the City's website. By attending the City Council Meeting, you are giving your permission to be televised. The Council Meetings are rebroadcast on Wednesday at 7:00 p.m. on Cox Communications Channel 851, AT&T U-Verse Channel 99, and can be viewed on the internet at www.avcity.org.

MITZI ORTIZ	SCOTT C. SMITH	KATHY BAILOR
CITY MANAGER	CITY ATTORNEY	CITY CLERK

PLEASE SILENCE ALL CELL PHONES AND OTHER ELECTRONIC EQUIPMENT WHILE CITY COUNCIL IS IN SESSION

CALL TO ORDER: Convene Regular Meeting

ROLL CALL

PLEDGE OF ALLEGIANCE:

1. SPECIAL PRESENTATIONS:

None.

2. ADDITIONS, DELETIONS, REORDERING TO THE AGENDA:

3. COMMUNITY INPUT:

Members of the public wishing to address the City Council are requested to complete and submit to the City Clerk a "Request to Address City Council" form available at the entrance to the City Council Chambers. In compliance with the Brown Act, no discussion or action may be taken on comments received at this time, except the City Council may briefly respond to statements made or questions posed. Comments are limited to three (3) minutes per speaker.

4. CONSENT CALENDAR:

All matters listed on the Consent Calendar will be acted upon by one vote unless members of the City Council, or staff request a matter to be discussed and/or removed from the Consent Calendar for separate action. Items removed from the Consent Calendar will be discussed and voted upon immediately following City Council action on the remainder of the Consent Calendar.

4.1 WAIVE THE READING OF ALL ORDINANCES AND RESOLUTIONS

Recommended Action: Approve the reading by title only of all ordinances and resolutions wherein the titles appear on the public agenda; said titles shall be determined to have been ready by title, and further reading is waived.

4.2 APPROVAL OF MINUTES

Recommended Action: Approve the minutes as submitted for the September 10, 2025, Special Meeting and the November 19, 2025, Regular Meeting.

Draft Minutes - September 10, 2025, Special Meeting

Draft Minutes - November 19, 2025, Special Meeting

4.3 SECOND READING AND ADOPTON OF AN ORDINANCE REPEALING SECTION 2.04.150 OF THE MUNICIPAL CODE REGARDING CAMPAIGN CONTRIBUTION LIMITS

Recommended Action: Conduct second reading and adopt an Ordinance entitled: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, REPEALING SECTION 2.04.150 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO LOCAL ELECTION CAMPAIGN CONTRIBUTION LIMITS TO BE REPLACED BY STATUTORY DEFAULT LIMITS.

Staff Report

Attachment 1 - Ordinance

4.4 ACCOUNTS PAYABLE

Recommended Action: Ratify accounts payable checks and electronic funds transfers issued between November 7, 2025, and November 20, 2025, in the amount of $790,067.72.

Staff Report

Attachment 1 - Accounts Payable Report

4.5 TREASURER'S STATEMENT - OCTOBER 2025

Recommended Action: Receive and file the October 2025 Treasurer's Statement.

Staff Report

Attachment 1 - October 2025 Treasurer's Report

4.6 ANNUAL MEASURE M2 EXPENDITURE REPORT

Recommended Action: Adopt a Resolution approving the City's annual Measure M2 expenditure report for fiscal year ending June 30, 2025.

Staff Report

Attachment 1 - Resolution

Attachment 2 - Measure M2 Expenditure Report

4.7 APPROVAL OF THE SUBMITTAL OF THE OSO PARKWAY/PACIFIC PARK DRIVE/GLENWOOD DRIVE REGIONAL TRAFFIC SIGNAL SYNCHRONIZATION PROJECT TO THE ORANGE COUNTY TRANSPORTATION AUTHORITY

Recommended Action: Adopt a Resolution approving the submittal of the Oso Parkway/Pacific Park Drive/Glenwood Drive Regional Traffic Signal Synchronization Project to OCTA for funding under the competitive Measure M2 Regional Traffic Signal Synchronization Program (Project P).

Staff Report

Attachment 1 - Resolution

5. PUBLIC HEARINGS:

5.1 GENERAL PLAN AMENDMENT GPA-2025-00002, ZONE CHANGE ZC-2025-00002, VESTING TENTATIVE TRACT MAP 19340, SITE DEVELOPMENT PERMIT SDP-2024-00001, ENVIRONMENTAL ASSESSMENT, AND DEVELOPMENT AGREEMENT AND ADOPTION OF A MITIGATED NEGATIVE DECLARATION FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY AT 95 ARGONAUT

Recommended Action: Conduct a public hearing and:

1. Adopt a Resolution entitled: A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, ADOPTING A MITIGATED NEGATIVE DECLARATION AND A MITIGATION MONITORING AND REPORTING PROGRAM PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT FOR GENERAL PLAN AMENDMENT GPA-2025-00002, ZONE CHANGE ZC-2025-00002, VESTING TENTATIVE TRACT MAP 19340, AND A DEVELOPMENT AGREEMENT TO ALLOW THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01);
2. Adopt a Resolution entitled: A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING AN AMENDMENT TO THE GENERAL PLAN LAND USE DESIGNATION AND ASSOCIATED LAND USE MAP FROM BUSINESS PARK TO HIGH DENSITY RESIDENTIAL FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01);
3. Introduce for first reading an Ordinance entitled: A ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING A ZONE CHANGE FROM BUSINESS PARK 2 TO HIGH DENSITY RESIDENTIAL DISTRICT FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (623-091-01);
4. Adopt a Resolution entitled: A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING VESTING TENTATIVE TRACT MAP 19340 FOR SUBDIVISION INTO CONDOMINIUM PURPOSES AND SITE DEVELOPMENT PERMIT (SDP-2024-00001) TO ALLOW THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (623-091-01); and
5. Introduce for first reading an Ordinance entitled: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING A DEVELOPMENT AGREEMENT BETWEEN THE CITY AND MLC HOLDINGS, INC. FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIALTOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01).

Staff Report
Attachment 1 - Resolution (MND)
Attachment 1, Exhibit A - Resolution (MND) MND
Attachment 1, Exhibit B - Resolution (MND) MMP
Attachment 1, Exhibit C - Resolution (MND) Response to Comments
Attachment 2 - Resolution (GPA)
Attachment 3 - Ordinance (ZC)
Attachment 4 - Resolution (VTTM and SDP)
Attachment 4, Exhibit B - Resolution (VTTM and SDP) Proposed Plans
Attachment 5 - Ordinance (DA)
Attachment 5, Exhibit A - Ordinance (DA) DA
Attachment 5, Exhibit A - Ordinance (DA) Exhibit D Density Bonus Housing Agreement

5.2 CONSIDERATION OF AN URGENCY ORDINANCE AND A NON-URGENCY ORDINANCE AMENDING SECTION 15.14.080 REGARDING ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS AND DETERMINE THE ORDINANCES TO BE EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17

Recommended Action: Find that the adoption of the proposed urgency and non-urgency ordinance is statutorily exempt from review under the California Environmental Quality Act (CEQA) under Public Resources Code § 21080.17;

1. Adopt by title only an urgency ordinance entitled: AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH RECENT CHANGES IN STATE LAW AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17; and
2. Introduce for first reading by title only an ordinance entitled: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH RECENT CHANGES IN STATE LAW AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17.

Staff Report
Attachment 1 - Urgency Ordinance
Attachment 2 - Non-Urgency Ordinance
Attachment 3 - Amended AVMC Section 15.14.180
Attachment 4 - Presentation

6. DISCUSSION:

6.1 CONCEPT PLAN REVIEW FOR A RESIDENTIAL COMMUNITY AT 1-5 POLARIS

Recommended Action: Review and provide initial feedback on concept plans for a development proposal involving the demolition of five existing office buildings to accommodate the construction of a 405-unit, residential community at 1-5 Polaris.

Staff Report
Attachment 1 - Concept Plans
Attachment 2 - Project Description
Attachment 3 - Presentation

6.2 FISCAL YEAR 2024-25 ANNUAL COMPREHENSIVE FINANCIAL REPORT

Recommended Action: Receive and file the Annual Comprehensive Financial Report (ACFR) for the year ended June 30, 2025.

Staff Report
Attachment 1 - FY 2024-25 Annual Comprehensive Financial Report
Attachment 2 - Auditor Communication Letter
Attachment 3 - Report on Internal Controls
Attachment 4 - Report on Appropriations Limit
Attachment 5 - Report on Treasurer's Monthly Statement
Attachment 6 - Presentation

6.3 CITY COUNCIL REORGANIZATION

Recommended Action: Select a Mayor and Mayor Pro Tem in accordance with Ordinance No. 2001-022, for the 2026 calendar year.

Staff Report

7. CITY MANAGER' S REPORT:

8. ANNOUNCEMENTS / COUNCIL COMMENTS / COMMITTEE UPDATES:

9. ADJOURNMENT:

Adjourn to January 21, 2026. The regularly scheduled City Council meetings of December 17, 2025, and January 7, 2026, have been cancelled.

CITY OF ALISO VIEJO
CITY COUNCIL MINUTES
SPECIAL MEETING
SEPTEMBER 10, 2025, 7:00 PM
Soka Performing Arts Center, 1 University Drive
Aliso Viejo, California

CALL TO ORDER: Mayor Ackley called the Special Meeting of the City Council of the City of Aliso Viejo to order at 7:01 p.m.

ROLL CALL:

PRESENT: MAYOR TIFFANY ACKELY
MAYOR PRO TEM MAX DUNCAN
COUNCILMEMBER MIKE MUNZING
COUNCILMEMBER TIM ZANDBERGEN

ABSENT: COUNCILMEMBER RICHARD W. HURT

STAFF PRESENT: MITZI ORTIZ, CITY MANAGER
SCOTT C. SMITH, CITY ATTORNEY
HONGDAO NGUYEN, ASSISTANT CITY ATTORNEY
ANN EIFERT, FINANCIAL SERVICES DIRECTOR
SHAUN PELLETIER, PUBLIC WORKS DIRECTOR
SO KIM, COMMUNITY DEVELOPMENT DIRECTOR
LIZZY MENDOZA, RECREATION & COMMUNITY SERVICES MANAGER
ISAAC AZIZ, INFORMATION TECHNOLOGY MANAGER

1. SPECIAL PRESENTATIONS:

STATE OF THE CITY PRESENTATION TITLED "YOUR CITY, YOUR VOICE: AN EVENING OF COMMUNITY CONVERSATION"

Renee Bodie, Soka Performing Arts Center General Manager, welcomed those in attendance and provided information on the Performing Arts Center.

Duane Cave, Moulton Niguel Water District President, provided opening remarks and served as Master of Ceremonies for the remainder of the meeting.

Laurie Johnson of Orange County Realtors led the pledge of allegiance.

Mr. Cave introduced the elected officials in attendance and acknowledged the event sponsors.

Mayor Ackley provided an overview of the City, including City Council changes, safety, recreation programs, and strategic planning.

City Manager Mitzi Ortiz provided updates on Aliso Viejo Town Center and The Commons at Aliso Viejo Town Center.

Community Development Director So Kim provided updates on residential development projects.

Public Works Director Shaun Pelletier provided an overview of the City's infrastructure and Capital Improvement Program projects.

Chief of Police Services Captain Ryan Buhr provided a department overview.

Senior Fire Inspector Jonathan Lim provided fire prevention information.

A question and answer period followed the presentations.

Recommended Action: Receive the Mayor's State of the City address, as presented by the Aliso Viejo Chamber of Commerce.

No further action was taken.

ADJOURNMENT: Mayor Ackley adjourned the meeting at 8:00 p.m.

Respectfully submitted:

_____
KATHY BAILOR
INTERIM CITY CLERK

Approved by:

_____
TIFFANY ACKLEY
MAYOR

DRAFT

CITY OF ALISO VIEJO
CITY COUNCIL MINUTES
REGULAR MEETING
NOVEMBER 19, 2025, 7:00 PM
Council Chambers, City Hall, 12 Journey
Aliso Viejo, California

CALL TO ORDER: Mayor Ackley called the Regular Meeting of the City Council of the City of Aliso Viejo to order at 7:00 p.m.

ROLL CALL:

PRESENT: MAYOR TIFFANY ACKLEY
MAYOR PRO TEM MAX DUNCAN
COUNCILMEMBER GARRETT DWYER
COUNCILMEMBER MIKE MUNZING
COUNCILMEMBER TIM A. ZANDBERGEN

STAFF PRESENT: MITZI ORTIZ, CITY MANAGER
HONGDAO NGUYEN, ASSISTANT CITY ATTORNEY
KATHY BAILOR, INTERIM CITY CLERK
SHAUN PELLETIER, PUBLIC WORKS DIRECTOR
SO KIM, COMMUNITY DEVELOPMENT DIRECTOR
LIZZY MENDOZA, RECREATION & COMMUNITY SERVICES MANAGER
ISAAC AZIZ, INFORMATION TECHNOLOGY MANAGER
CAPT. RYAN BUHR, CHIEF OF POLICE SERVICES

PLEDGE OF ALLEGIANCE: Recreation & Community Services Manager Lizzy Mendoza led the pledge of allegiance.

1. SPECIAL PRESENTATIONS:

None.

2. ADDITIONS, DELETIONS, REORDERING TO THE AGENDA:

None.

3. COMMUNITY INPUT:

1. Jenna Minnick-Bull, Director of South Coast Conservatory, invited the City Council, staff, and residents to attend their Winter Festival at Capistrano Valley High School.

4. CONSENT CALENDAR:

Unless otherwise indicated below, the following pertains to all items on the Consent Calendar.

Motion: Councilmember Munzing moved and Mayor Pro Tem Duncan seconded to approve the recommended actions. Motion carried 5-0.

4.1 WAIVE THE READING OF ALL ORDINANCES AND RESOLUTIONS

Recommended Action: Approve the reading by title only of all ordinances and resolutions wherein the titles appear on the public agenda; said titles shall be determined to have been ready by title, and further reading is waived.

4.2 APPROVAL OF MINUTES

Recommended Action: Approve the minutes as submitted for the November 5, 2025, Special and Regular Meetings.

4.3 ACCOUNTS PAYABLE

Recommended Action: Ratify accounts payable checks and electronic funds transfers issued between October 24, 2025, and November 6, 2025, in the amount of $$1,079,640.76.

4.4 APPROVE AGREEMENT WITH UNITED BUILDING AND DEVELOPMENT SERVICES, LLC FOR THE ALISO VIEJO RANCH WOOD SEALING PROJECT

Recommended Action:

1. Approve an agreement in the amount of $64,000 to United Building and Development Services, LLC as the lowest responsible bidder for the Aliso Viejo Ranch wood sealing project.
2. Authorize the City Manager to execute an agreement with United Building Development Services, LLC; and
3. Authorize City staff to make total compensation to United Building Development Services, LLC up to $64,000 plus $6,400 (10% of the agreement amount) to allow for contingencies, totaling $70,400.

5. PUBLIC HEARINGS:

5.1 REQUEST TO APPROVE AN ADMINISTRATIVE USE PERMIT TO ALLOW AN OUTDOOR DINING AREA AND AN EXPANSION OF AN ABC LICENSE INTO THE PARKING LOT AND A CONDITIONAL USE PERMIT TO REDUCE THE PARKING REQUIREMENT BY 17% AT 7 JOURNEY (USE-2025-00018 AND USE-2025-00019)

Mayor Pro Tem Duncan recused himself and left the Council Chambers at 7:05 pm due to his daughter being an employee at the establishment.

City Manager Mitzi Ortiz introduced Senior Planner Rose Rivera, who provided an overview. Staff and Webb's Grainworks owner Jeremy Webb, responded to questions regarding parking restrictions and live performances. Mayor Ackley opened the public hearing, and there were no requests to speak. Mayor Ackley closed the public hearing.

Recommended Action: Adopt Resolution No.2025-19 approving Administrative Use Permit USE-2025-00018 to allow for an outdoor dining area and an expansion of an ABC license into the parking lot and Conditional Use Permit USE-2025-00019 to reduce the parking requirement by 17% at 7 Journey.

Motion: Councilmember Munzing moved and Councilmember Zandbergen seconded to approve the recommended actions. Motion carried 4-0-1, with Mayor Pro Tem Duncan absent.

Mayor Pro Tem Duncan returned to the dais at 7:14 p.m. for the remainder of the meeting.

5.2 GENERAL PLAN AMENDMENT, ZONE CHANGE, VESTING TENTATIVE TRACT MAP, SITE DEVELOPMENT PERMIT, ENVIRONMENTAL ASSESSMENT, AND DEVELOPMENT AGREEMENT FOR 95 ARGONAUT

City Manager Mitzi Ortiz introduced Community Development Director So Kim, who provided an overview. Staff and Danny Hinojosa of Meritage Homes, responded to questions regarding park in-lieu fees, affordable housing, additional impact fees and fee calculations. Mayor Ackley opened the public hearing, and there were no requests to speak. Mayor Ackley closed the public hearing. Direction was provided to use the Orange County Tax Assessor land value for park in-lieu fee calculations, apply State Density Bonus threshold for affordable housing units, not impose additional development impact fees, and use 50-year evaluation years with escalation rate based on last 5 years of CPI for fiscal impact calculation.

Recommended Action:
1. Continue the public hearing to a date uncertain; and
2. Review and provide direction on the preferred impact fee structure for development agreements.

Motion: Councilmember Munzing moved and Councilmember Zandbergen seconded, to continue the public hearing to the Regular City Council Meeting of December 3, 2025. Motion carried 5-0.

6. DISCUSSION:

6.1 INSTALLATION OF FIXED LICENSE PLATE READER CAMERAS

City Manager Mitzi Ortiz introduced Chief of Police Services Captain Ryan Buhr, who provided an overview. Staff responded to questions regarding camera sizes and placements, system compatibility with neighboring jurisdictions, purchase versus leasing costs, anticipated timelines for procurement, data security, and privacy.

Recommended Action: Staff recommends that the City Council discuss the purpose and intended use of License Plate Reader (LPR) cameras within the City of Aliso Viejo, including how this technology can enhance public safety and investigative capabilities. Following this discussion, the Council may direct City staff and OCSD to develop a phased implementation plan, identify LPR camera locations, select a vendor, and provide a detailed proposal for consideration.

No further action was taken.

6.2 ORDINANCE REPEALING SECTION 2.04.150 OF CHAPTER 2.04 RELATING TO LOCAL CAMPAIGN CONTRIBUTION LIMITS TO BE REPLACED BY STATUTORY DEFAULT LIMITS

City Manager Mitzi Ortiz introduced Assistant City Attorney HongDao Nguyen, who provided an overview. Staff responded to questions regarding the history, monitoring and enforcement relating to local campaign contribution limits. Mayor Ackley opened for public comment and the following person spoke:

1. Sarah Chamberlain expressed opposition to the matter.

Recommended Action: Staff recommends the City Council introduce for first reading, an Ordinance of the City Council of the City of Aliso Viejo Repealing Section 2.04.150 of Chapter 2.04 relating to local campaign contribution limits to be replaced by statutory default limits.

Motion: Councilmember Munzing moved and Councilmember Zandbergen seconded to approve the recommended action. Motion carried 4-1, with Mayor Ackley dissenting.

7. CITY MANAGER' S REPORT:

City Manager Mitzi Ortiz announced the 8th Annual All is Bright Holiday Celebration and Tree Lighting Ceremony on December 4, 2025, from 5:00 to 8:00 p.m. at the Town Center Fountain; Boys & Girls Club of Capistrano Valley accepting donations and volunteers for Operation Holiday Homework event on December 12, 2025, from 3:00 to 6:00 p.m. at Aliso Viejo Ranch; and the Nourishing Great Futures Market every Wednesday from 10:00 am to 12:00 pm at the Iglesia Park Community Center.

8. ANNOUNCEMENTS / COUNCIL COMMENTS / COMMITTEE UPDATES:

Councilmember Munzing:

- Attended Veterans Day Observance at El Toro Memorial Park

- Attended Aliso Viejo Chamber of Commerce Networking Lunch
- Attended OCFA Budget & Finance Committee Meeting
- Attended City of Hope Cancer Research Hospital Grand Opening
- Extended wishes for Thanksgiving and the holiday season

Councilmember Dwyer:
- Attended Aliso Viejo Chamber of Commerce Networking Lunch
- Volunteered at Nourishing Great Futures Market at Iglesia Park Community Center
- Registered to volunteer for Operation Holiday Homework
- Commented on upcoming OCMVCD Budget & Finance Committee Meeting

Councilmember Zandbergen:
- Commented on Operation Holiday Homework
- Attended SJHTCA Committee meetings
- Attended City of Hope Cancer Research Hospital Grand Opening

Mayor Pro Tem Duncan:
- Attended Aliso Niguel High School CIF football game
- Extended Thanksgiving wishes to the community
- Commented that he was the 2021 AVCA Holiday Decorating Contest winner
- Commented on All is Bright Holiday Celebration and Tree Lighting Ceremony
- Obtained Council consensus to direct staff to explore a parking permit system

Mayor Ackley:
- Attended City of Hope Cancer Research Hospital Grand Opening
- Attended Veterans Day Observance at El Toro Memorial Park
- Attended ACC-OC Business Meeting
- Attended County Selection Committee Meeting
- Attended Artisans Market at Aliso Viejo Ranch
- Provided an update on the Aliso Viejo Library Remodel

9. **ADJOURNMENT:** Mayor Ackley adjourned the meeting at 9:17 p.m. to the regularly scheduled City Council meeting of December 3, 2025.

Respectfully submitted:

_____
KATHY BAILOR
INTERIM CITY CLERK

Approved by:

_____
TIFFANY ACKLEY
MAYOR

DRAFT

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Kathy Bailor, Interim City Clerk

SUBJECT: SECOND READING AND ADOPTON OF AN ORDINANCE REPEALING SECTION 2.04.150 OF THE MUNICIPAL CODE REGARDING CAMPAIGN CONTRIBUTION LIMITS

Recommended Action:

Conduct second reading and adopt an Ordinance entitled:

> AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, REPEALING SECTION 2.04.150 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO LOCAL ELECTION CAMPAIGN CONTRIBUTION LIMITS TO BE REPLACED BY STATUTORY DEFAULT LIMITS.

Fiscal Impact:

None.

Discussion:

On November 19, 2025, the City Council approved the introduction and first reading of the subject Ordinance by 4-1 vote. If adopted, the Ordinance will take effect 30 days after adoption.

Attachment:

1. Ordinance

ORDINANCE NO. 2025-___

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, REPEALING SECTION 2.04.150 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO LOCAL ELECTION CAMPAIGN CONTRIBUTION LIMITS TO BE REPLACED BY STATUTORY DEFAULT LIMITS

WHEREAS, Assembly Bill No. 571 ("AB 571") imposed default, indexed campaign contribution limit upon cities and counties effective January 1, 2021, together with a regulatory structure to monitor and enforce the limit; and

WHEREAS, pursuant to California Government Code Section 85702.5, the City of Aliso Viejo adopted its own, lower local campaign contribution limit; and

WHEREAS, in adopting this Ordinance, it is the City Council's intention to promote transparency and ensure a fair election process through utilization of the State's default contribution limits and enforcement mechanism, tying them instead the state adjusted limit per Government Code Sections 85301(a) and (d) adjusted by the Commission pursuant to Section 83124; and

WHEREAS, any and all other legal prerequisites relating to the adoption of this Ordinance have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ALISO VIEJO DOES ORDAIN AS FOLLOWS:

SECTION 1. Incorporation of Recitals. The recitals above are each incorporated by reference and adopted as findings by the City Council as if fully set forth herein.

SECTION 2. CEQA. The City Council finds that the proposed amendments to the Aliso Viejo Municipal Code are exempt from the requirements of the California Environmental Quality Act (CEQA) pursuant to Title 14 of the California Code of Regulations, Section 15061(b)(3) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 3. Code Amendment. Section 2.04.150 relating to City Council Campaign Finance Limitations and Regulations is hereby repealed.

SECTION 4. Statutory Compliance. The default campaign contribution limits found in Government Code Sections 85301 and 83124 shall hereafter apply as monitored and enforced by the California Fair Political Practices Commission.

SECTION 5. Publication. The City Clerk shall certify to the adoption of this Ordinance and cause it, or a summary of it, to be published once within 15 days of adoption in a newspaper of general circulation printed and published within the City of

Aliso Viejo, and shall post a certified copy of this Ordinance, including the vote for and against the same, in the Office of the City Clerk in accordance with California Government Code, section 36933.

SECTION 6. Effective Date. This Ordinance shall become effective 30 days after its adoption.

PASSED, APPROVED AND ADOPTED this _____ day of _____, 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, Kathy Bailor, Interim City Clerk of the City of Aliso Viejo, California, hereby certify that foregoing Ordinance No. _____ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the ____ day of _____, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

I hereby certify that the foregoing is the original of Ordinance No. _____ duly passed and adopted by the Aliso Viejo City Council at its regular meeting held _____, and that the Summary of the Ordinance was published on _____ and _____ in the Laguna Niguel News.

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

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City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Ann Eifert, Director of Financial Services

SUBJECT: ACCOUNTS PAYABLE

Recommended Action:

Ratify accounts payable checks and electronic funds transfers issued between November 7, 2025, and November 20, 2025, in the amount of $790,067.72.

Fiscal Impact:

Expenditures in the amount of $790,067.72.

Background:

The City issues accounts payable checks on a bi-weekly basis and presents it to City Council for ratification at its next regularly scheduled City Council meeting.

Discussion:

The attached registers containing checks and electronic funds transfers issued between November 7, 2025, and November 20, 2025, for $790,067.72, are being presented for ratification. All payments have been made in compliance with the City's purchasing policy and procedures. Payments have been reviewed and approved by the appropriate departmental staff. The issued accounts payable checks and electronic funds transfers have been reviewed and deemed in accordance with the fiscal year budget by the Director of Financial Services.

Attachment:

1. Accounts Payable Report

Accounts Payable

Vendor Name	Description (Item)	Amount
101 - GENERAL FUND		
UNITED OF OMAHA LIFE INSURANCE CO.	DEC'25 LIFE INSURANCE	1,509.75
CALPERS HEALTH	DEC'25 TZ - HEALTH PREMIUM	1,571.50
CALPERS HEALTH	DEC'25 TZ - HEALTH PREMIUM PEMCA MINIMUM	158.00
CALPERS HEALTH	DEC'25 CALPERS HEALTH PREMIUM	27,583.49
BEST BEST & KRIEGER	SEP'25 BBK CEQA & ENVIRONMENTAL (SPECIALIZED)	347.00
BEST BEST & KRIEGER	SEP'25 BBK APPLICANT INITIATED REIMB(AIR)-ARGONAUT	3,735.50
CHOICE BUILDER	NOV'25 DENTAL - DD	(145.88)
CHOICE BUILDER	DEC'25 VISION - JM	6.48
CHOICE BUILDER	NOV'25 VISION - DD	(24.19)
CHOICE BUILDER	DEC'25 DENTAL - TZ	96.90
CHOICE BUILDER	DEC'25 DENTAL - JM	46.63
CHOICE BUILDER	DEC'25 DENTAL INSURANCE	1,657.20
CHOICE BUILDER	DEC'25 VISION INSURANCE	257.58
KOSMONT & ASSOCIATES	OCT'25 FISCAL IMPACT ANALYSIS FOR 95 ARGONAUT	304.15
KOSMONT & ASSOCIATES	OCT'25 KICK OFF MEETING WITH SHEA HOMES	106.65
JIM MURRAY ROOFING INC	CD-2025-00005_19 DOVE ST_JIM MURRAY ROOFING	500.00
BROADWAY BUILDING GROUP, LLC	CD-2025-00071_150 COLUMBIA_BROADWAY BUILDING CORP	2,400.00
ROOF PRO	CD-2025-00133_2 ACORN_ROOF PRO	500.00
		40,610.76
CITY COUNCIL		
AT&T	8/17/25-9/16/25 CITY COUNCIL PHONE LINES	191.52
AT&T	9/17/25-10/16/25 CITY COUNCIL PHONE LINES	174.48
	CITY COUNCIL TOTAL:	**366.00**
CITY MANAGER		
CALPERS HEALTH	DEC'25 PG - HEALTH PREMIUM	158.00
AT&T	8/17/25-9/16/25 CITY MANAGER PHONE	90.72
AT&T	9/17/25-10/16/25 CITY MANAGER PHONE	90.78
	CITY MANAGER TOTAL:	**339.50**
HUMAN RESOURCES		
AT&T	8/17/25-9/16/25 HR PHONE	21.17
	HUMAN RESOURCES TOTAL:	**21.17**
CITY CLERK		
US BANK PURCHASING CARD PROGRAM	LL 10/15 NNA SERVICES LLC (CREDIT)	(25.12)
US BANK PURCHASING CARD PROGRAM	LL 10/08 OC REGISTER-DIGITAL SBSCPTN/4 WKS	26.00
US BANK PURCHASING CARD PROGRAM	LL 10/09 LA TIMES-DIGITIAL SBSCPTN/4 WKS	7.96
MCCI, LLC	FY25-26 LF REN.-SBSCPTN.S/W.SUPP:12/1/25-11/30/26	33,932.50
	CITY CLERK TOTAL:	**33,941.34**
CITY ATTORNEY		
BEST BEST & KRIEGER	OCT'25 BBK GENERAL RETAINER LEGAL SERVICES	25,792.00
BEST BEST & KRIEGER	OCT'25 BBK LITIGATION - CC	195.00
BEST BEST & KRIEGER	OCT'25 BBK LABOR & EMPLOYMENT (SPECIALIZED)	1,804.40
BEST BEST & KRIEGER	OCT'25 BBK GENERAL LITIGATION	258.70
	CITY ATTORNEY TOTAL:	**28,050.10**
FINANCE		
CALPERS HEALTH	DEC'25 CALPERS ADMIN FEE	25.50
CHOICE BUILDER	DEC'25 ADMIN FEE	30.00
CA MUNICIPAL STATISTICS INC	DIRECT AND OVERLAPPING DEBT STATEMENT	600.00
DAVIS FARR LLP	FY24-25 AV CITY ANNUAL AUDIT-3RD PROGRESS BILLING	7,590.00
US BANK PURCHASING CARD PROGRAM	AE 10/13 CSMFO-CONF REGISTRATION 2/24-2/27/26	625.00
US BANK PURCHASING CARD PROGRAM	AE 10/14 HILTON HOTEL-CSMFO CONF DEPOSIT 2/24-2/27	292.35
	FINANCE TOTAL:	**9,162.85**
INFORMATION TECHNOLOGY		
AT&T	9/22/25-10/21/25 CH-ALARM/POTS LINE	599.03
COX COMMUNICATIONS, INC	AUG-NOV'25 ACCT#0202 CH CABLE TV	699.78

Vendor Name	Description (Item)	Amount
COX COMMUNICATIONS, INC	OCT-NOV'25 ACCT#8802 INTERNET - FIBER (600MB)	4,234.00
COX COMMUNICATIONS, INC	OCT-NOV'25 ACCT#9302 LAB INTERNET	230.98
NEXUS IS INC	NOV'25 NETWORK SUPPORT & SECURITY	416.67
AT&T	8/17/25-9/16/25 EOC PHONES	109.59
AT&T	8/17/25-9/16/25 CITY HALL MIFI	119.54
AT&T	8/17/25-9/16/25 EOC MIFI	152.60
AT&T	8/17/25-9/16/25 FLEET COMPLETE GPS	202.12
AT&T	9/17/25-10/16/25 EOC MIFI	152.60
AT&T	9/17/25-10/16/25 FLEET COMPLETE GPS	201.92
AT&T	9/17/25-10/16/25 CITY HALL MIFI	119.54
AT&T	9/17/25-10/16/25 EOC PHONES	110.22
JOSE RUEL FABELLA DIRA	OCT'25 ENERGOV & GIS	3,300.00
GOTO COMMUNICATIONS	NOV'25 CH GOTO VOIP SERVICE & SUPPORT	1,995.44
LUNAVI, INC	NOV'25 OFFSITE BACKUP STORAGE	622.50
	INFORMATION TECHNOLOGY TOTAL:	**13,266.53**
NON-DEPARTMENTAL		
PV MAINTENANCE INC	OCT'25 PVM VISTA PARK MAINTENANCE	579.00
QUADIENT FINANCE USA, INC	QUADIENT POSTAGE-ADDED 10/29/25	500.00
US BANK PURCHASING CARD PROGRAM	LL 9/27 PRIMO-SPKLTTS BTL WTR DEL/8 CASES	61.16
US BANK PURCHASING CARD PROGRAM	LL10/01 URBANE CAFE-CC MTG 10/1 DINNER	187.69
US BANK PURCHASING CARD PROGRAM	LL 10/12 COSTCO-SAME DAY DEL/SUPPLIES	108.60
US BANK PURCHASING CARD PROGRAM	LL 10/15 THAI BITE-CC MTG 10/15 DINNER	269.72
MOULTON NIGUEL WATER DIST	ACCT#64101 VISTA WATER SVC	1,174.92
	NON-DEPARTMENTAL TOTAL:	**2,881.09**
C. S. ADMINISTRATION		
CALPERS HEALTH	DEC'25 HW - HEALTH PREMIUM	158.00
CALPERS HEALTH	DEC'25 DP - HEALTH PREMIUM	158.00
OCY MANAGEMENT, LLC	OCT'25 SMP R&CS CONTRIBUTION TRANSPORTATION	524.00
TROVAO AND ASSOCIATES INC	FINAL DEP-2025 TREE INSTALL/CLEANUP/SNOW MACHINE	8,990.00
SPECIAL EVENT CONTRACTORS LLC	DEP FINAL - 2025 AV HOLIDAY TREE PLATFORM	5,839.74
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-THE NIGHTMARE BEFORE CHRISTMAS DVD	19.92
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-CODREE 48 PCS HALLOWEEN FIDGET TOY	26.93
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-MHINZER HALLOWEEN PARTY FAVORS	26.93
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-ZEAYOU 80 PCS HALLOWEEN PARTY FAVORS	23.69
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-AMYLOVE HALLOWEEN TABLECLOTHS	22.62
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-DENWILLER HALLOWEEN TABLECLOTHS	19.38
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-OCATO 30 PCS SQUISHY TOYS	18.31
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-ULTIMATE NAME BRAND CANDY VARIETY PK	32.31
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-ULTIMATE NAME BRAND CANDY RETURN	(32.31)
KIMBERLY DOWNEY ESMOND	2025 TREE LIGHTING CHARACTERS	731.20
M&J PAUL ENTERPRISES INC	FINAL PMT - 2025 TREE LIGHTING RENTALS	1,495.00
US BANK PURCHASING CARD PROGRAM	JM 9/23 FACEBK-META ADS	87.05
US BANK PURCHASING CARD PROGRAM	JM 9/09 FACEBK-META ADS	85.00
US BANK PURCHASING CARD PROGRAM	JM 9/08 FACEBK-META ADS	79.00
US BANK PURCHASING CARD PROGRAM	JM 9/07 FACEBK-META ADS	73.00
US BANK PURCHASING CARD PROGRAM	JM 9/05 FACEBK-META ADS	67.00
US BANK PURCHASING CARD PROGRAM	JM 9/04 FACEBK-META ADS	62.00
US BANK PURCHASING CARD PROGRAM	JM 9/13 FACEBK-META ADS	98.00
US BANK PURCHASING CARD PROGRAM	JM 9/03 FACEBK-META ADS	57.00
US BANK PURCHASING CARD PROGRAM	JM 9/11 FACEBK-META ADS	91.00
US BANK PURCHASING CARD PROGRAM	LL 9/30 FACEBK-META ADS	23.45
	C. S. ADMINISTRATION TOTAL:	**18,776.22**
IGLESIA PARK		
PV MAINTENANCE INC	OCT'25 PVM IGLESIA PARK MAINTENANCE	868.50
MIRACLE PLAYGROUND SALES OF SO CAL	OCT'25 PLAYGROUND REPAIR PARTS - IGLESIA	144.98
SO CAL EDISON	OCT'25 ACCT#7997 IGLESIA PARK ELECTRICITY	76.01
	IGLESIA PARK TOTAL:	**1,089.49**
IGLESIA BUILDING		
TEAM ONE MANAGEMENT	NOV'25 IGLESIA JANITORIAL SERVICES	1,064.00
ZAPP PEST MANAGEMENT	OCT'25 PEST CONTROL SERVICES IGLESIA	75.00
SO CAL EDISON	OCT'25 ACCT#7997 IGLESIA PARK BLDG ELECTRICITY	1,098.11
	IGLESIA BUILDING TOTAL:	**2,237.11**

Vendor Name	Description (Item)	Amount
PLANNING		
CALPERS HEALTH	DEC'25 MF - HEALTH PREMIUM	158.00
	PLANNING TOTAL:	**158.00**
BUILDING		
CHARLES ABBOTT ASSOC INC	OCT'25 CAA CONTRACT SERVICES - BUILDING	44,239.62
	BUILDING TOTAL:	**44,239.62**
CODE ENFORCEMENT		
CHARLES ABBOTT ASSOC INC	OCT'25 CAA CONTRACT SERVICES - CODE ENFORCEMENT	9,265.00
	CODE ENFORCEMENT TOTAL:	**9,265.00**
ENGINEERING (GENERAL)		
PV MAINTENANCE INC	NOV'25 PVM WAREHOUSE LEASE	1,035.00
MURPHY SWITCH OF CA	NOV'25 MURCAL IOT SMARTCOMMAND MONITORING SERVICE	450.00
AT&T	8/17/25-9/16/25 PUBLIC WORKS TABLETS	120.72
AT&T	9/17/25-10/16/25 PUBLIC WORKS TABLETS	120.72
MOULTON NIGUEL WATER DIST	2025 H2O FOR HOAS PARTNERSHIP	564.09
COUNTY OF ORANGE	FY25-26 NPDES COST SHARE AGMT #D02-048	131,365.83
COUNTY OF ORANGE	FY25-26 SOCWMA CO-OP AGREEMENT	7,314.38
COUNTY OF ORANGE	FY25-26 CO-PERMITTEE SHARED COST D04-050	43,337.69
	ENGINEERING (GENERAL) TOTAL:	**184,308.43**
STREET MAINTENANCE		
PV MAINTENANCE INC	OCT'25 PVM STREET MAINTENANCE MOE TAX	24,522.98
	STREET MAINTENANCE TOTAL:	**24,522.98**
LAW ENFORCEMENT-OTHER		
ALL CITY MANAGEMENT SERVICES	10/26-11/08/25 414 HRS-CROSSING GUARD SERVICES	14,287.14
	LAW ENFORCEMENT-OTHER TOTAL:	**14,287.14**
ANIMAL CONTROL		
CITY OF MISSION VIEJO	OCT-DEC'25 ANIMAL CONTROL AND SHELTER SERVICES	144,391.00
	ANIMAL CONTROL TOTAL:	**144,391.00**
	GENERAL FUND TOTAL:	**571,914.33**
102 - GEN. FD-CITY HALL		
NON-DEPARTMENTAL		
THURSTON ELEVATOR CONCEPTS INC	NOV'25 CH ELEVATOR MAINTENANCE	140.00
APEX FIRE SYSTEMS INC	OCT'25 FIRE SPRINKLER & RISER 5 YR CERT INSPECTION	1,250.00
TEAM ONE MANAGEMENT	NOV'25 CH JANITORIAL SERVICES	3,400.00
ZAPP PEST MANAGEMENT	OCT'25 PEST CONTROL SERVICES CH	75.00
FOSTERS' GARDENS INC	NOV'25 CH INTERIOR PLANT MAINTENANCE	115.00
SIERRA ANALYTICAL LABS INC	SEP'25 CH BACKFLOW INSPECTIONS - 4 ASSEMBLIES	230.00
AYANTRA INC	JAN-DEC'26 GENERATOR MONITORING SUBSCRIPTION CH	240.00
THE GAS COMPANY	10/01/25-10/31/25 MTR#16122180 CH GAS SVC	477.39
MOULTON NIGUEL WATER DIST	ACCT#65408/65407/65406 CH WATER SVC	821.62
SO CAL EDISON	OCT'25 ACCT#7189 CH ELECTRICITY	5,245.57
	NON-DEPARTMENTAL TOTAL:	**11,994.58**
	GEN. FD-CITY HALL TOTAL:	**11,994.58**
103 - GF-AV RECREATION SERVICES		
RAQUEL SCARDINA	OCT'25 REC1 REFUND_RAQUEL SCARDINA_ATN084 COOKING	10.00
RAQUEL SCARDINA	OCT'25 REC1 REFUND_RAQUEL SCARDINA_ATN084 COOKING	5.00
RAQUEL SCARDINA	OCT'25 REC1 REFUND_RAQUEL SCARDINA_ATN084 COOKING	135.00
EMILY MCCARTHY	OCT'25 REC1 REFUND_EMILY MCCARTHY_ATN005 STAGEPLAY	18.00
		168.00
RECREATION SERVICES		
AT&T	9/22/25-10/21/25 AVR-ALARM/POTS LINE	200.00
CSG FORTE PAYMENTS, INC	OCT'25 CREDIT CARD SERVICE FEES - POS	1,102.13
CSG FORTE PAYMENTS, INC	OCT'25 CREDIT CARDE SERVICE FEES - WEB	430.96
PV MAINTENANCE INC	OCT'25 PVM AVR MAINTENANCE	772.00
CLICKSTART DOG TRAINING ACADEMY, LLC	FALL2025-ATN151 DOG TRAINING-6 PARTICIPANTS	1,044.00
SOPHI ALBERT	FALL2025-ATN106 PIANO-4 PARTICIPANTS	336.00
RUIHONG LI	FALL2025-ATN193 YOGA-5 PARTICIPANTS	297.00
KIMBERLY KRANTZ	FALL2025-ATN091 POETRY-4 PARTICIPANTS	132.00
JOHN DAVID ALLEN JR	FALL2025-ATN143/138/062 TENNIS-14 PARTICIPANTS	546.00

Vendor Name	Description (Item)	Amount
LAURELINDA HAUKSSON	FALL2025-ATN101/ATN081-11 PARTICIPANTS	792.00
PRESTIGIOUS CLEANERS LLC	10/10 AVR DRY CLEANING	361.01
PRESTIGIOUS CLEANERS LLC	10/17 AVR DRY CLEANING	94.18
PRESTIGIOUS CLEANERS LLC	10/25 AVR DRY CLEANING	235.44
PRESTIGIOUS CLEANERS LLC	10/30 AVR DRY CLEANING	141.26
GARDAWORLD	NOV'25 AVR - CASH COURIER SERVICE	507.87
L & O ALISO VIEJO, LLC	FALL2025-ATN212 HIDDEN GEM-2 PARTICIPANTS	28.00
SUJATA CHIPLUNKAR	FALL2025-ATN160 STIR FRIED-4 PARTICIPANTS	132.00
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-COZY UP 100 COUNT VARIETY TEA	36.98
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-BAINFE 100 PCS SPIDERS	7.53
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-JOYIN 1000 FT SPIDER WEB	25.58
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-WALKIE CHALK STAND-UP CHALK HOLDER	43.08
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-COLOVIS 3 PACK GIANT SPIDER	25.85
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-CHA4TEA 36-COUNT BLACK TEA	21.70
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-FELIZROCA WASHABLE SIDEWALK CHALK	21.54
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-JOLLY CHEF COMPOSTABLE PLATES	60.44
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-JIALWEN 50 PCS PLASTIC SPIDERS	5.16
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-10 PCS WEDDING BELLS DECORATIONS	16.15
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-NEW STAR FOOD SVC PLASTIC ICE SCOOP	17.26
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-ANEZUS FISHING LINE NYLON STRING	7.53
AMAZON CAPITAL SERVICES INC	OCT'25 AMAZON-RUN NICO LARGE GREY CREEPY GAUZE	12.92
ZAPP PEST MANAGEMENT	OCT'25 PEST CONTROL SERVICES AVR	95.00
AT&T	8/17/25-9/16/25 REC PHONE LINES	90.72
AT&T	8/17/25-9/16/25 REC TABLET	40.24
AT&T	9/17/25-10/16/25 RECREATION TABLET	40.24
AT&T	9/17/25-10/16/25 REC PHONE LINES	90.78
LYONS SECURITY SERVICE IN	OCT'25 GCF SECURITY SERVICES	1,658.25
LYONS SECURITY SERVICE IN	OCT'25 AVR EVENT SECURITY SERVICES	3,308.25
FOSTERS' GARDENS INC	NOV'25 AVR INTERIOR PLANT MAINTENANCE	110.00
CINTAS CORPORATION NO. 2	OCT'25 AVR FIRST AID SUPPLIES	139.51
CINTAS CORPORATION NO. 2	OCT'25 AVR FIRST AID SUPPLIES	108.15
TEAM ONE MANAGEMENT	OCT'25 AVR JANITORIAL SERVICES	5,800.00
SIERRA ANALYTICAL LABS INC	SEP'25 AVR BACKFLOW INSPECTIONS - 3 ASSEMBLIES	190.00
MUSIC MOVES ACADEMY INC	FALL2025-ATN020 MUSIC-9 PARTICIPANTS	891.00
MUSIC MOVES ACADEMY INC	FALL2025-ATN021 MUSIC-5 PARTICIPANTS	495.00
COUNTY OF ORANGE-	12/01/25-11/30/26_RESTAURANT PERMIT_AVR_OCHCA	777.00
GOTO COMMUNICATIONS	NOV'25 AVR GOTO VOIP SERVICE & SUPPORT	665.14
THE KNOT WORLDWIDE INC	WEDDING PRO PROGRAM SUBSCRIPTION - THE BARN AVR	11,945.00
MOULTON NIGUEL WATER DIST	ACCT#105234/104936/104935/104986 RANCH WATER SVC	1,377.09
MOULTON NIGUEL WATER DIST	ACCT#104515/104519 FARM WATER SVC	333.84
SO CAL EDISON	OCT'25 ACCT#4551 FARM ELECTRICITY	386.71
SO CAL EDISON	OCT'25 ACCT#6247 AVR ELECTRICITY	2,948.94
AARON FLORA	OCT'25 RENEWABLE FARMS	30,467.15
	RECREATION SERVICES TOTAL:	**69,411.58**
	GF-AV RECREATION SERVICES TOTAL:	**69.579.58**

203 - GAS TAX

TRAFFIC ENGINEERING

GMU GEOTECHNICAL INC	AUG'25 PAVEMENT MANAGEMENT PLAN UPDATE	20,623.80
RK ENGINEERING GROUP INC	ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS	9,200.00
	TRAFFIC ENGINEERING TOTAL:	**29,823.80**

STREET MAINTENANCE

PV MAINTENANCE INC	OCT'25 PVM STREET MAINTENANCE GAS TAX	29,972.52
BEAR ELECTRICAL SOLUTIONS INC	OCT'25 TRAFFIC SIGNAL MAINTENANCE RESPONSE	4,661.95
BEAR ELECTRICAL SOLUTIONS INC	OCT'25 TRAFFIC SIGNAL MAINTENANCE ROUTINE	3,225.90
MOULTON NIGUEL WATER DIST	ACCT#64613/64615/65346 MEDIANS WATER SVC	1,604.50
SO CAL EDISON	OCT'25 ACCT#6377 LS2 ST LIGHTS ELECTRICITY	1,360.71
SO CAL EDISON	OCT'25 ACCT#7241 LS1 ST LIGHTS ELECTRICITY	17,166.18
SO CAL EDISON	OCT'25 ACCT#8254 TC1 ST LIGHTS ELECTRICITY	4,544.57
	STREET MAINTENANCE TOTAL:	**62,536.33**
	GAS TAX TOTAL:	**92.360.13**

Vendor Name	Description (Item)	Amount
204 - MEASURE M		
GEN-MEASURE M		
OCY MANAGEMENT, LLC	OCT'25 M2 FUND TRANSPORTATION SVC	2,096.00
	GEN-MEASURE M TOTAL:	**2,096.00**
	MEASURE M TOTAL:	**2,096.00**
215 - PUBLIC SAFETY GRANTS		
LAW ENFORCEMENT-OTHER		
COUNTY OF ORANGE	OCT'25 AUTOMATED FINGERPRINT IDENTIFICATION SYSTEM	1,500.00
COUNTY OF ORANGE	OCT-DEC'25 800 MHZ COST ALLOCATION	7,389.26
	LAW ENFORCEMENT-OTHER TOTAL:	**8,889.26**
	PUBLIC SAFETY GRANTS TOTAL:	**8,889.26**
231 - OTHER GRANTS		
OTHER GRANTS		
LAURA'S HOUSE	OCT'25 PLHA GRANT REIMBURSEMENT-CASE MANAGEMENT	1,288.00
	OTHER GRANTS TOTAL:	**1,288.00**
	OTHER GRANTS TOTAL:	**1,288.00**
241 - TECHNOLOGY FUND		
GEN-TECHNOLOGY GRANTS		
ERIC WINTER	OCT'25-CC MTGS 10/1&10/15 SPRTS ZONE 7-10 & ADMIN	1,382.16
	GEN-TECHNOLOGY GRANTS TOTAL:	**1,382.16**
	TECHNOLOGY FUND TOTAL:	**1,382.16**
261 - CITY FAC.-AQUATIC CENTER		
PREMIER AQUATIC SERVICES	NOV'25 AQC MANAGEMENT FEE RETENTION	(1,208.30)
		-1,208.30
GEN-AQUATIC CENTER		
COX COMMUNICATIONS, INC	OCT-NOV'25 ACCT#6701 AQC INTERNET	1,021.64
HASA INC	OCT'25 AQC POOL CHEMICALS - ACID	313.74
GARDAWORLD	NOV'25 AQC - CASH COURIER SERVICE	562.53
HASA INC	NOV'25 AQC POOL CHEMICALS - CHLORINE	1,014.38
ZAPP PEST MANAGEMENT	OCT'25 PEST CONTROL SERVICES AQC	75.00
PREMIER AQUATIC SERVICES	NOV'25 AQC MANAGEMENT FEE	12,083.00
CONSOLIDATED ELECTRICAL DISTRIBUTORS, INC	NOV'25 BOLLARD CONNECTORS - AQC	169.82
SIERRA ANALYTICAL LABS INC	SEP'25 AQC BACKFLOW INSPECTIONS - 6 ASSEMBLIES	470.00
TEAM ONE MANAGEMENT	NOV'25 AQC JANITORIAL SERVICES	2,510.26
THE GAS COMPANY	10/02/25-11/03/25 MTR#15672349 AQC GAS SVC	4,422.70
MOULTON NIGUEL WATER DIST	ACCT#64095/64096 AQC WATER SVC	661.03
	GEN-AQUATIC CENTER TOTAL:	**23,304.10**
	CITY FAC.-AQUATIC CENTER TOTAL:	**22,095.80**
311 - STREET IMPROVEMENTS		
BEAR ELECTRICAL SOLUTIONS INC	#104 ADA CURB RAMP PROJECT-TRAFFIC LOOP REPAIR	2,115.38
		2,115.38
STREETS & HIGHWAYS		
RK ENGINEERING GROUP INC	OCT'25 CITYWIDE BIKE LANE STRIPING PLAN - DESIGN	2,850.00
	STREETS & HIGHWAYS TOTAL:	**2,850.00**
	STREET IMPROVEMENTS TOTAL:	**4,965.38**

Vendor Name	Description (Item)	Amount
721 - COMMUNITY TRUST		
TRUST FUND		
M&J PAUL ENTERPRISES INC	FINAL PMT - 2025 TREE LIGHTING RENTALS	3,502.50
	TRUST FUND TOTAL:	**3,502.50**
	COMMUNITY TRUST TOTAL:	**3,502.50**
	GRAND TOTAL:	**790,067.72**

Fund Summary

Fund		Expense Amount	Payment Amount
101 - GENERAL FUND		571,914.33	571,914.33
102 - GEN. FD-CITY HALL		11,994.58	11,994.58
103 - GF-AV RECREATION SERVICES		69,579.58	69,579.58
203 - GAS TAX		92,360.13	92,360.13
204 - MEASURE M		2,096.00	2,096.00
215 - PUBLIC SAFETY GRANTS		8,889.26	8,889.26
231 - OTHER GRANTS		1,288.00	1,288.00
241 - TECHNOLOGY FUND		1,382.16	1,382.16
261 - CITY FAC.-AQUATIC CENTER		22,095.80	22,095.80
311 - STREET IMPROVEMENTS		4,965.38	4,965.38
721 - COMMUNITY TRUST		3,502.50	3,502.50
	Grand Total:	**790,067.72**	**790,067.72**

Report Summary

Fund Summary

Fund	Payment Amount
101 - GENERAL FUND	571,914.33
102 - GEN. FD-CITY HALL	11,994.58
103 - GF-AV RECREATION SERVICES	69,579.58
203 - GAS TAX	92,360.13
204 - MEASURE M	2,096.00
215 - PUBLIC SAFETY GRANTS	8,889.26
231 - OTHER GRANTS	1,288.00
241 - TECHNOLOGY FUND	1,382.16
261 - CITY FAC.-AQUATIC CENTER	22,095.80
311 - STREET IMPROVEMENTS	4,965.38
721 - COMMUNITY TRUST	3,502.50
Grand Total:	**790,067.72**

Account Summary

Account Number	Account Name	Payment Amount
101-1203-000	ACCOUNTS RECEIVABLE	1,551.44
101-2505-000	DENTAL INSURANCE PA…	1,657.20
101-2506-000	MEDICAL INSURANCE P…	27,741.49
101-2507-000	LIFE INSURANCE PAYABLE	1,509.75
101-2508-000	VISION INSURANCE PAY…	257.58
101-2602-000	PLANNING DEPOSIT	4,493.30
101-2606-000	C & D DEPOSIT	3,400.00
101-4-1101-4511-000	COMMUNICATION	366.00
101-4-1501-4206-000	MEDICAL INSURANCE	158.00
101-4-1501-4511-000	COMMUNICATION	181.50
101-4-1503-4309-000	OTHER CONTRACTUAL S…	21.17
101-4-1601-4305-000	TECHNOLOGY SERVICES	33,932.50
101-4-1601-4520-000	MTGS/CONF./TRNG & D…	-25.12
101-4-1601-4611-000	PUBLICATIONS/REF MAT…	33.96
101-4-2101-4304-000	LEGAL SERVICES	25,792.00
101-4-2101-4532-000	SPECIAL PROJECTS	1,804.40
101-4-2101-4735-000	LITIGATION	453.70
101-4-2501-4301-000	PROFESSIONAL SERVICES	8,190.00
101-4-2501-4309-000	OTHER CONTRACTUAL S…	55.50
101-4-2501-4520-000	MTGS/CONF./TRNG & D…	917.35
101-4-3101-4301-000	PROFESSIONAL SERVICES	3,716.67
101-4-3101-4305-000	TECHNOLOGY SERVICES	8,927.36
101-4-3101-4481-000	COMPUTER EXPENSE	622.50
101-4-3501-4431-000	BUILDING & GROUND M…	1,753.92
101-4-3501-4512-000	POSTAGE	500.00
101-4-3501-4612-000	OPERATING SUPPLIES	627.17
101-4-4101-4206-000	MEDICAL INSURANCE	316.00
101-4-4101-4501-000	ADVERTISING & PROMO…	722.50
101-4-4101-4524-000	RECREATION-SENIOR TR…	524.00
101-4-4101-4527-000	REC-CITY SPECIAL EVENTS	17,075.86
101-4-4101-4528-000	REC-PARTNER EVENTS	137.86
101-4-4102-4411-000	UTILITIES	76.01
101-4-4102-4431-000	BUILDING & GROUND M…	1,013.48
101-4-4103-4411-000	UTILITIES	1,098.11
101-4-4103-4431-000	BUILDING & GROUND M…	1,139.00
101-4-4401-4206-000	MEDICAL INSURANCE	158.00
101-4-4402-4751-000	C.S-BUILDING	44,239.62
101-4-4403-4761-000	C.S-CODE ENFORCEMENT	9,265.00
101-4-4501-4471-000	RENT	1,035.00
101-4-4501-4562-000	PERMITS	182,017.90
101-4-4501-4612-000	OPERATING SUPPLIES	241.44
101-4-4501-4701-000	NPDES	1,014.09

Account Summary

Account Number	Account Name	Payment Amount
101-4-4503-4771-000	C.S-STREET MAINTENAN…	24,522.98
101-4-5102-4721-000	C.S-CROSSING GUARDS	14,287.14
101-4-5301-4722-000	C.S-ANIMAL CARE SERVI…	144,391.00
102-4-3501-4411-000	UTILITIES	6,544.58
102-4-3501-4431-000	BUILDING & GROUND M…	5,450.00
103-34150	OTHER INCOME	15.00
103-34161	CONTRACT CLASSES	153.00
103-4-4105-4305-000	TECHNOLOGY SERVICES	12,810.14
103-4-4105-4309-000	OTHER CONTRACTUAL S…	4,693.00
103-4-4105-4411-000	UTILITIES	4,326.03
103-4-4105-4431-000	BUILDING & GROUND M…	11,052.25
103-4-4105-4451-000	FARM OPERATING EXPE…	32,845.95
103-4-4105-4511-000	COMMUNICATION	261.98
103-4-4105-4561-000	TAXES/FEES/PERMITS	2,040.96
103-4-4105-4601-000	SUPPLIES	549.38
103-4-4105-4612-000	OPERATING SUPPLIES	831.89
203-4-4502-4301-000	PROFESSIONAL SERVICES	29,823.80
203-4-4503-4411-000	UTILITIES	24,675.96
203-4-4503-4771-000	C.S-STREET MAINTENAN…	37,860.37
204-4-6104-4309-000	OTHER CONTRACTUAL S…	2,096.00
215-4-5102-4803-000	PUBLIC SAFETY EQUIPM…	8,889.26
231-4-6131-4309-000	OTHER CONTRACTUAL S…	1,288.00
241-4-6141-4309-000	OTHER CONTRACTUAL S…	1,382.16
261-2103-000	RETENTIONS PAYABLE	-1,208.30
261-4-6161-7411-000	UTILITIES	6,105.37
261-4-6161-7421-000	BUILDING & GROUND M…	3,225.08
261-4-6161-7425-000	POOL MAINTENANCE	1,328.12
261-4-6161-7445-000	FEES & PERMITS	562.53
261-4-6161-7451-000	MANAGEMENT FEES	12,083.00
311-2103-000	RETENTIONS PAYABLE	2,115.38
311-4-8301-5501-000	DESIGN	2,850.00
721-4-7501-6103-000	COLLABORATIVE EVENTS…	3,502.50
	Grand Total:	**790,067.72**

Project Account Summary

Project Account Key	Payment Amount
None	770,557.31
1002FALL	4,693.00
10044309	1,288.00
1425501	2,850.00
9014612	457.41
9934527	2,226.20
9936103	3,502.50
SDP-2024-00001	4,386.65
SDP-2025-00004	106.65
Grand Total:	**790,067.72**

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Ann Eifert, Director of Financial Services/City Treasurer

SUBJECT: TREASURER'S STATEMENT – OCTOBER 2025

Recommended Action:

Receive and file the October 2025 Treasurer's Statement.

Fiscal Impact:

No Fiscal Impact.

Background:

Per City policy, the Finance Department presents the monthly Treasurer's Statement for the City Council's review. This statement shows the cash balance for all City funds, a breakdown of bank account balances, investment account balances and the effective yield earned from investments.

Discussion:

The City's portfolio consists of investments in Certificates of Deposits, US Treasuries, US Federal Agencies, Corporate Bonds, and Local Agency Investment Fund (LAIF). All funds invested with LAIF are available for withdrawal within 24 hours.

The Treasurer's Statement provides information regarding the City's investment portfolio and activity during the reporting month. The City's investment portfolio is in compliance with all government codes as well as the City's investment policy. Interest is credited to the City's bank account monthly and allocated among the City's funds. The current portfolio provides sufficient cash flow liquidity to meet the upcoming operating expenses and spending requirements for the next 6 months.

Attachment:

1. October 2025 Treasurer's Statement

CITY OF ALISO VIEJO
TREASURER'S MONTHLY CASH STATEMENT

October 31, 2025

	BEGINNING BALANCE	RECEIPTS	DISBURSEMENTS	ENDING BALANCE
CASH BALANCE (ALL FUNDS)	$ 10,507,806.64	$ 2,856,951.58	$ 4,039,739.43	$ 9,325,018.79
CITY TRUST FUNDS:				
AV RANCH FOUNDATION	$ 100.00			100.00
CFD 2005-01	$ (4,896.00)		4,009.22	(8,905.22)
COMMUNITY TRUST	$ 9,170.98			9,170.98
CASH BALANCE TOTALS	**$ 10,512,181.62**	**$ 2,856,951.58**	**$ 4,043,748.65**	**$ 9,325,384.55**

SUMMARY OF CASH:

DEMAND DEPOSITS:	GENERAL ACCOUNT	$ 849,644.37	
INVESTMENTS:	LOCAL AGENCY INVESTMENT FD	$ 8,372,067.08	
	MONEY MARKET/SWEEP ACCOUNT	$ 103,673.10	
	TOTAL CASH		**$ 9,325,384.55**

Years to Maturity for October 2025	1.90
Weighted Average Yield for October 2025	3.960%

All investments are placed in accordance with the City of Aliso Viejo's Investment Policy.

The above summary provides sufficient cash flow liquidity to meet the next six month's estimated expenditures.

Other monies held include Cash with Fiscal Agent, Investments, Payroll and AV Center.			**$ 44,647,672.57**
Cash With Fiscal Agent	COPS/CFD 2005-01	1,456,519.34	
Cash With Investment Advisor	City Investments	41,740,017.36	
AV Center		1,091,198.67	
PR Account		358,013.59	
Petty Cash		1,923.61	
	GRAND TOTAL OF CITY FUNDS		**$ 53,973,057.12**

Portfolio Summary

3.96
Weighted Average Yield to Maturity

1.90
Weighted Average Maturity (Years)

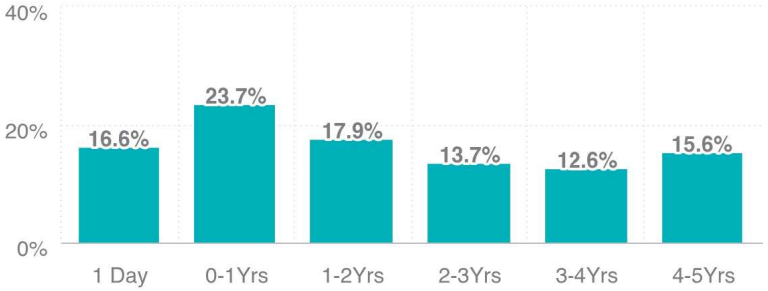
1.76
Portfolio Effective Duration (Years)

1.90
Weighted Average Life (Years)

AA
Average Credit Rating

MEEDER PUBLIC FUNDS

Maturity Distribution



Sector Allocation

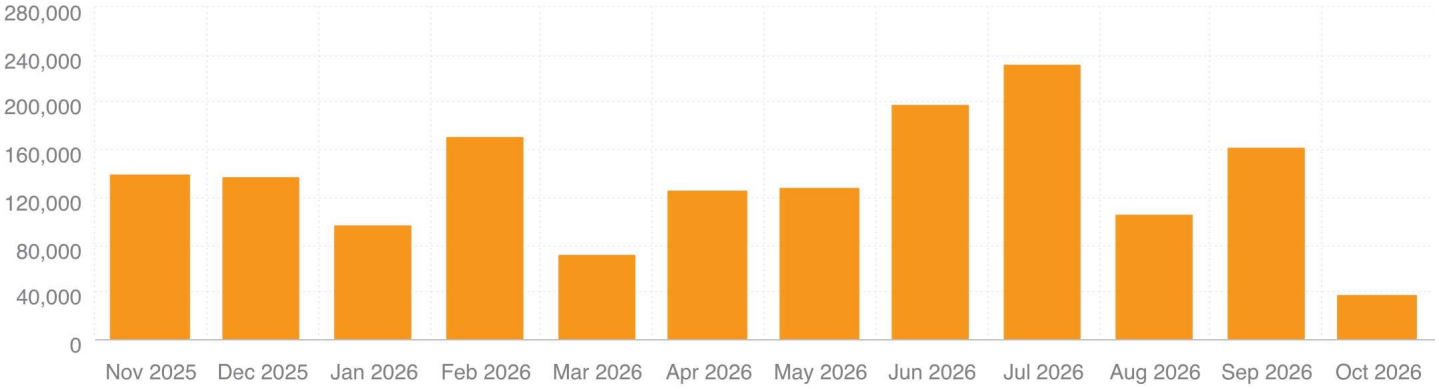


U.S. Treasuries	46.25%
U.S. Agencies	18.20%
LGIP	16.36%
Corporate Bonds	15.21%
Negotiable CD's	3.78%
Money Market Funds	0.20%

Custodial Reconciliation

	CURRENT MONTH
Beginning	**41,733,395.28**
Contributions/Withdrawals	0.00
Management Fees	0.00
Custodian Fees	0.00
Realized Gains Losses	(625.00)
Purchased Interest	(11,200.38)
Interest Received	122,120.56
ENDING	**41,843,690.46**

Projected Monthly Income Schedule



MEEDER PUBLIC FUNDS

Position Statement

CUSIP	DESCRIPTION	TRADE DATE SETTLE DATE	PAR VALUE	PRINCIPAL COST PURCHASED INTEREST	TOTAL COST	YIELD TO MATURITY	MATURITY DATE	DAYS TO MATURITY	MARKET PRICE MARKET VALUE	UNREALIZED GAIN/LOSS BOOK VALUE	% OF MV	MOODY'S S&P RATING
CITY OF ALISO VIEJO												
LGIP												
CALAIF	California LAIF	10/31/2025 10/31/2025	8,372,067.08	8,372,067.08 0.00	8,372,067.08	4.15		1	1.00 8,372,067.08	0.00 8,372,067.08	16.36	 NA
LGIP TOTAL			**8,372,067.08**	**8,372,067.08** **0.00**	**8,372,067.08**	**4.15**		**1**	**1.00** **8,372,067.08**	**0.00** **8,372,067.08**	**16.36**	**NA**
MONEY MARKET FUNDS												
31846V567	FIRST AMER:GVT OBLG;Z	10/31/2025 10/31/2025	103,673.10	103,673.10 0.00	103,673.10	3.92		1	1.00 103,673.10	0.00 103,673.10	0.20	Aaa AAA
MONEY MARKET FUNDS TOTAL			**103,673.10**	**103,673.10** **0.00**	**103,673.10**	**3.92**		**1**	**1.00** **103,673.10**	**0.00** **103,673.10**	**0.20**	**AAA**
U.S. TREASURIES												
912797QQ3	US TREASURY BILL 11/13/25	05/19/2025 05/20/2025	1,000,000.00	979,679.91 0.00	979,679.91	4.28	11/13/2025	13	99.89 998,929.51	19,249.60 979,679.91	1.95	P-1 A-1+
912828M56	US TREASURY 2.250 11/15/25	05/30/2023 05/30/2023	1,000,000.00	955,117.19 0.00	955,117.19	4.19	11/15/2025	15	99.94 999,375.00	44,257.81 955,117.19	1.95	Aa1 AA+
912797NU7	US TREASURY BILL 12/26/25	05/19/2025 05/20/2025	490,000.00	477,942.27 0.00	477,942.27	4.17	12/26/2025	56	99.43 487,183.14	9,240.87 477,942.27	0.95	P-1 A-1+
91282CBH3	US TREASURY 0.375 01/31/26	05/06/2025 05/08/2025	1,000,000.00	973,242.19 0.00	973,242.19	4.12	01/31/2026	92	99.15 991,484.38	18,242.19 973,242.19	1.94	Aa1 AA+
91282CGL9	US TREASURY 4.000 02/15/26	05/30/2023 05/30/2023	1,000,000.00	997,578.13 0.00	997,578.13	4.09	02/15/2026	107	100.02 1,000,195.31	2,617.18 997,578.13	1.95	Aa1 AA+
91282CGV7	US TREASURY 3.750 04/15/26	01/22/2024 01/22/2024	1,200,000.00	1,187,437.50 0.00	1,187,437.50	4.24	04/15/2026	166	99.95 1,199,437.50	12,000.00 1,187,437.50	2.34	Aa1 AA+
91282CCF6	US TREASURY 0.750 05/31/26	06/13/2022 06/13/2022	1,000,000.00	915,976.56 0.00	915,976.56	3.01	05/31/2026	212	98.28 982,812.50	66,835.94 915,976.56	1.92	Aa1 AA+
91282CCJ8	US TREASURY 0.875 06/30/26	06/29/2022 06/29/2022	1,000,000.00	913,125.00 0.00	913,125.00	3.20	06/30/2026	242	98.11 981,093.75	67,968.75 913,125.00	1.92	Aa1 AA+
91282CCP4	US TREASURY 0.625 07/31/26	01/13/2023 01/13/2023	1,100,000.00	987,292.97 0.00	987,292.97	3.73	07/31/2026	273	97.71 1,074,777.34	87,484.37 987,292.97	2.10	Aa1 AA+
91282CJP7	US TREASURY 4.375 12/15/26	05/06/2025 05/08/2025	1,000,000.00	1,007,695.31 0.00	1,007,695.31	3.87	12/15/2026	410	100.70 1,007,031.25	(664.06) 1,007,695.31	1.97	Aa1 AA+
91282CJT9	US TREASURY 4.000 01/15/27	01/22/2024 01/22/2024	1,000,000.00	996,718.75 0.00	996,718.75	4.12	01/15/2027	441	100.36 1,003,632.81	6,914.06 996,718.75	1.96	Aa1 AA+
912828X88	US TREASURY 2.375 05/15/27	06/29/2022 06/29/2022	1,000,000.00	962,851.56 0.00	962,851.56	3.20	05/15/2027	561	98.13 981,250.00	18,398.44 962,851.56	1.92	Aa1 AA+
9128282R0	US TREASURY 2.250 08/15/27	01/13/2023 01/13/2023	1,050,000.00	990,322.27 0.00	990,322.27	3.60	08/15/2027	653	97.66 1,025,431.64	35,109.37 990,322.27	2.00	Aa1 AA+
9128284N7	US TREASURY 2.875 05/15/28	09/18/2024 09/19/2024	1,000,000.00	979,882.81 0.00	979,882.81	3.47	05/15/2028	927	98.27 982,734.38	2,851.57 979,882.81	1.92	Aa1 AA+
91282CCR0	US TREASURY 1.000 07/31/28	09/18/2024 09/19/2024	1,000,000.00	910,507.81 0.00	910,507.81	3.50	07/31/2028	1,004	93.27 932,656.25	22,148.44 910,507.81	1.82	Aa1 AA+

MEEDER PUBLIC FUNDS

Position Statement

CUSIP	DESCRIPTION	TRADE DATE SETTLE DATE	PAR VALUE	PRINCIPAL COST PURCHASED INTEREST	TOTAL COST	YIELD TO MATURITY	MATURITY DATE	DAYS TO MATURITY	MARKET PRICE MARKET VALUE	UNREALIZED GAIN/LOSS BOOK VALUE	% OF MV	MOODY'S S&P RATING
91282CCV1	US TREASURY 1.125 08/31/28	12/21/2023 12/21/2023	1,000,000.00	878,750.00 0.00	878,750.00	3.98	08/31/2028	1,035	93.41 934,062.50	55,312.50 878,750.00	1.83	Aa1 AA+
91282CDF5	US TREASURY 1.375 10/31/28	12/21/2023 12/21/2023	1,500,000.00	1,328,906.25 0.00	1,328,906.25	3.98	10/31/2028	1,096	93.71 1,405,664.07	76,757.82 1,328,906.25	2.75	Aa1 AA+
91282CJR3	US TREASURY 3.750 12/31/28	01/22/2024 01/22/2024	1,000,000.00	987,695.31 0.00	987,695.31	4.03	12/31/2028	1,157	100.40 1,003,984.38	16,289.07 987,695.31	1.96	Aa1 AA+
91282CLC3	US TREASURY 4.000 07/31/29	07/14/2025 07/15/2025	1,000,000.00	1,002,304.69 0.00	1,002,304.69	3.94	07/31/2029	1,369	101.21 1,012,109.38	9,804.69 1,002,304.69	1.98	Aa1 AA+
91282CLR0	US TREASURY 4.125 10/31/29	11/25/2024 11/26/2024	1,000,000.00	996,445.31 0.00	996,445.31	4.21	10/31/2029	1,461	101.70 1,017,031.25	20,585.94 996,445.31	1.99	Aa1 AA+
91282CGB1	US TREASURY 3.875 12/31/29	02/07/2025 02/10/2025	1,000,000.00	978,828.13 0.00	978,828.13	4.36	12/31/2029	1,522	100.77 1,007,734.38	28,906.25 978,828.13	1.97	Aa1 AA+
91282CMG3	US TREASURY 4.250 01/31/30	05/06/2025 05/08/2025	1,000,000.00	1,015,507.81 0.00	1,015,507.81	3.89	01/31/2030	1,553	102.23 1,022,265.63	6,757.82 1,015,507.81	2.00	Aa1 AA+
91282CMZ1	US TREASURY 3.875 04/30/30	05/06/2025 05/08/2025	1,000,000.00	998,867.19 0.00	998,867.19	3.90	04/30/2030	1,642	100.78 1,007,812.50	8,945.31 998,867.19	1.97	Aa1 AA+
91282CNK3	US TREASURY 3.875 06/30/30	10/20/2025 10/21/2025	600,000.00	607,898.44 7,139.27	615,037.71	3.57	06/30/2030	1,703	100.77 604,593.75	(3,304.69) 607,898.44	1.18	Aa1 AA+
U.S. TREASURIES TOTAL			**23,940,000.00**	**23,030,573.36 7,139.27**	**23,037,712.63**	**3.87**		**738**	**98.91 23,663,282.60**	**632,709.24 23,030,573.36**	**46.25**	**AA+**
U.S. AGENCIES												
3135G06Q1	FANNIE MAE 0.640 12/30/25 '25	05/06/2025 05/08/2025	500,000.00	488,955.00 0.00	488,955.00	4.15	12/30/2025	60	99.46 497,310.00	8,355.00 488,955.00	0.97	Aa1 AA+
3130ALHH0	FHLBANKS 0.960 03/05/26 '25	05/06/2025 05/08/2025	1,000,000.00	974,710.00 0.00	974,710.00	4.11	03/05/2026	125	98.96 989,640.00	14,930.00 974,710.00	1.93	Aa1 AA+
3130AK5J1	FHLBANKS 0.700 09/18/26 '25	02/16/2023 02/16/2023	1,000,000.00	872,060.00 0.00	872,060.00	4.61	09/18/2026	322	97.13 971,280.00	99,220.00 872,060.00	1.90	Aa1 AA+
880591EU2	TVA 2.875 02/01/27	05/06/2025 05/08/2025	1,000,000.00	983,560.00 0.00	983,560.00	3.86	02/01/2027	458	98.98 989,790.00	6,230.00 983,560.00	1.93	Aa1 AA+
3130ASD63	FHLBANKS 3.250 06/28/27	06/28/2022 06/28/2022	1,000,000.00	1,000,000.00 0.00	1,000,000.00	3.25	06/28/2027	605	99.00 989,980.00	(10,020.00) 1,000,000.00	1.93	Aa1 AA+
3133EPAU9	FED FARM CR BNKS 3.875 07/14/27	02/16/2023 02/16/2023	1,000,000.00	990,390.00 0.00	990,390.00	4.12	07/14/2027	621	100.29 1,002,910.00	12,520.00 990,390.00	1.96	Aa1 AA+
3136G4X99	FANNIE MAE 0.740 08/25/27 '25	04/06/2023 04/06/2023	1,000,000.00	876,610.00 0.00	876,610.00	3.82	08/25/2027	663	94.43 944,310.00	67,700.00 876,610.00	1.85	Aa1 AA+
3130AMX98	FHLBANKS 2.000 06/30/28	07/10/2025 07/11/2025	1,000,000.00	947,446.00 611.11	948,057.11	3.89	06/30/2028	973	95.68 956,760.00	9,314.00 947,446.00	1.87	Aa1 AA+
3133EMSX1	FED FARM CR BNKS 1.550 03/15/29 '25	02/06/2025 02/07/2025	500,000.00	447,120.00 0.00	447,120.00	4.39	03/15/2029	1,231	92.65 463,240.00	16,120.00 447,120.00	0.91	Aa1 AA+
3130B2GZ2	FHLBANKS 4.200 08/13/29 '26	08/21/2024 08/23/2024	250,000.00	250,000.00 0.00	250,000.00	4.20	08/13/2029	1,382	99.65 249,125.00	(875.00) 250,000.00	0.49	Aa1 AA+
3133EL6D1	FED FARM CR BNKS 1.230 09/10/29 '25	02/06/2025 02/07/2025	500,000.00	434,525.00 0.00	434,525.00	4.41	09/10/2029	1,410	90.47 452,335.00	17,810.00 434,525.00	0.88	Aa1 AA+
880591FE7	TVA 3.875 08/01/30	09/18/2025 09/19/2025	800,000.00	804,848.00 3,530.56	808,378.56	3.74	08/01/2030	1,735	100.43 803,432.00	(1,416.00) 804,848.00	1.57	Aa1 AA+

MEEDER PUBLIC FUNDS

Position Statement

CUSIP	DESCRIPTION	TRADE DATE SETTLE DATE	PAR VALUE	PRINCIPAL COST PURCHASED INTEREST	TOTAL COST	YIELD TO MATURITY	MATURITY DATE	DAYS TO MATURITY	MARKET PRICE MARKET VALUE	UNREALIZED GAIN/LOSS BOOK VALUE	% OF MV	MOODY'S S&P RATING
U.S. AGENCIES TOTAL			**9,550,000.00**	**9,070,224.00 4,141.67**	**9,074,365.67**	**3.99**		**714**	**97.57 9,310,112.00**	**239,888.00 9,070,224.00**	**18.20**	**AA+**
NEGOTIABLE CD'S												
59013KLQ7	MERRICK BANK 0.550 12/30/25	12/30/2020 12/30/2020	245,000.00	245,000.00 0.00	245,000.00	0.55	12/30/2025	60	99.47 243,701.50	(1,298.50) 245,000.00	0.48	NA NA
02007GXG3	ALLY BANK 3.450 08/04/26	08/04/2022 08/04/2022	245,000.00	245,000.00 0.00	245,000.00	3.45	08/04/2026	277	99.69 244,230.70	(769.30) 245,000.00	0.48	NA NA
38149MYB3	GOLDMAN BANK USA 1.000 08/11/26	08/11/2021 08/11/2021	245,000.00	245,000.00 0.00	245,000.00	1.00	08/11/2026	284	97.84 239,698.20	(5,301.80) 245,000.00	0.47	NA NA
90348JR93	UBS USA 0.950 08/11/26	08/11/2021 08/11/2021	245,000.00	245,000.00 0.00	245,000.00	0.95	08/11/2026	284	97.79 239,578.15	(5,421.85) 245,000.00	0.47	NA NA
254673N44	CAPITL ONE NA 3.500 07/29/27	08/03/2022 08/03/2022	245,000.00	245,000.00 0.00	245,000.00	3.50	07/29/2027	636	97.82 239,654.64	(5,345.36) 245,000.00	0.47	NA NA
87164XN93	SYNCHRONY BANK 3.500 08/05/27	08/05/2022 08/05/2022	245,000.00	245,000.00 0.00	245,000.00	3.50	08/05/2027	643	97.80 239,605.26	(5,394.74) 245,000.00	0.47	NA NA
02589ADQ2	AM EX BK 3.450 08/10/27	08/12/2022 08/12/2022	245,000.00	243,775.00 0.00	243,775.00	3.56	08/10/2027	648	99.64 244,113.10	338.10 243,775.00	0.48	NA NA
58404DVV0	MEDALLION BANK 3.800 08/30/29	08/21/2024 08/30/2024	245,000.00	245,000.00 0.00	245,000.00	3.80	08/30/2029	1,399	100.00 245,000.00	0.00 245,000.00	0.48	NA NA
NEGOTIABLE CD'S TOTAL			**1,960,000.00**	**1,958,775.00 0.00**	**1,958,775.00**	**2.54**		**530**	**98.76 1,935,581.55**	**(23,193.45) 1,958,775.00**	**3.78**	**NA**
CORPORATE BONDS												
14913UAR1	CTRPLLR FIN SERV 4.400 10/15/27 MTN	11/25/2024 11/26/2024	500,000.00	498,865.00 0.00	498,865.00	4.48	10/15/2027	714	101.01 505,050.00	6,185.00 498,865.00	0.99	A2 A
24422EWR6	JOHN DEERE CAP 4.750 01/20/28 MTN	11/25/2024 11/26/2024	500,000.00	504,235.00 0.00	504,235.00	4.46	01/20/2028	811	101.76 508,815.00	4,580.00 504,235.00	0.99	A1 A
931142FB4	WALMART 3.900 04/15/28 '28	11/25/2024 11/26/2024	325,000.00	320,619.00 0.00	320,619.00	4.33	04/15/2028	897	100.36 326,153.75	5,534.75 320,619.00	0.64	Aa2 AA
931142ES8	WALMART 1.500 09/22/28 '28	07/10/2025 07/11/2025	1,000,000.00	925,020.00 0.00	925,020.00	4.02	09/22/2028	1,057	93.95 939,500.00	14,480.00 925,020.00	1.84	Aa2 AA
58933YBD6	MERCK & CO 1.900 12/10/28 '28	11/25/2024 11/26/2024	500,000.00	452,905.00 0.00	452,905.00	4.47	12/10/2028	1,136	94.15 470,725.00	17,820.00 452,905.00	0.92	Aa3 A+
17275RBR2	CISCO SYSTEMS 4.850 02/26/29 '29	11/01/2024 11/04/2024	500,000.00	506,060.00 0.00	506,060.00	4.53	02/26/2029	1,214	102.47 512,340.00	6,280.00 506,060.00	1.00	A1 AA-
023135CG9	AMAZON.COM 3.450 04/13/29 '29	11/01/2024 11/04/2024	500,000.00	481,580.00 0.00	481,580.00	4.37	04/13/2029	1,260	98.48 492,380.00	10,800.00 481,580.00	0.96	A1 AA
30303M8S4	META PLATFORMS 4.300 08/15/29 '29	11/01/2024 11/04/2024	500,000.00	496,070.00 0.00	496,070.00	4.48	08/15/2029	1,384	100.94 504,680.00	8,610.00 496,070.00	0.99	Aa3 AA-
857449AE2	STATE STR BK TR 4.782 11/23/29	11/25/2024 11/26/2024	500,000.00	502,115.00 0.00	502,115.00	4.69	11/23/2029	1,484	102.78 513,920.00	11,805.00 502,115.00	1.00	Aa2 AA-
713448GB8	PEPSICO 4.600 02/07/30 '30	02/05/2025 02/07/2025	500,000.00	499,160.00 0.00	499,160.00	4.64	02/07/2030	1,560	102.23 511,140.00	11,980.00 499,160.00	1.00	A1 A+
717081EY5	PFIZER 1.700 05/28/30 '30	08/21/2025 08/22/2025	625,000.00	556,418.75 2,479.17	558,897.92	4.27	05/28/2030	1,670	90.06 562,900.00	6,481.25 556,418.75	1.10	A2 A

MEEDER PUBLIC FUNDS

Position Statement

CUSIP	DESCRIPTION	TRADE DATE SETTLE DATE	PAR VALUE	PRINCIPAL COST PURCHASED INTEREST	TOTAL COST	YIELD TO MATURITY	MATURITY DATE	DAYS TO MATURITY	MARKET PRICE MARKET VALUE	UNREALIZED GAIN/LOSS BOOK VALUE	% OF MV	MOODY'S S&P RATING
713448GH5	PEPSICO 4.300 07/23/30 '30	08/21/2025 08/22/2025	625,000.00	626,756.25 2,164.93	628,921.18	4.24	07/23/2030	1,726	100.83 630,187.50	3,431.25 626,756.25	1.23	A1 A+
58933YBQ7	MERCK & CO 4.150 09/15/30 '30	09/22/2025 09/23/2025	800,000.00	803,696.00 1,291.11	804,987.11	4.05	09/15/2030	1,780	100.20 801,576.00	(2,120.00) 803,696.00	1.57	Aa3 A+
166756BJ4	CHEVRON USA 4.300 10/15/30 '30	10/20/2025 10/21/2025	500,000.00	506,945.00 4,061.11	511,006.11	3.98	10/15/2030	1,810	100.85 504,265.00	(2,680.00) 506,945.00	0.99	Aa2 AA-
CORPORATE BONDS TOTAL			**7,875,000.00**	**7,680,445.00 9,996.32**	**7,690,441.32**	**4.33**		**1,344**	**98.99 7,783,632.25**	**103,187.25 7,680,445.00**	**15.21**	**A+**
CITY OF ALISO VIEJO TOTAL			**51,800,740.18**	**50,215,757.54 21,277.26**	**50,237,034.80**	**3.96**		**696**	**51,168,348.58**	**952,591.04 50,215,757.54**	**100.00**	**AA**
GRAND TOTAL			**51,800,740.18**	**50,215,757.54 21,277.26**	**50,237,034.80**	**3.96**		**696**	**51,168,348.58**	**952,591.04 50,215,757.54**	**100.00**	**AA**

MEEDER PUBLIC FUNDS

Transaction Statement

CITY OF ALISO VIEJO

	TRADE DATE	SETTLE DATE	CUSIP	DESCRIPTION	PAR VALUE	PRINCIPAL COST	PURCHASED INTEREST	TOTAL	PURCHASE YIELD
BUY									
	10/20/2025	10/21/2025	166756BJ4	CHEVRON USA 4.300 10/15/30 '30	500,000.00	506,945.00	4,061.11	(511,006.11)	3.98
	10/20/2025	10/21/2025	91282CNK3	US TREASURY 3.875 06/30/30	600,000.00	607,898.44	7,139.27	(615,037.71)	3.57
BUY TOTAL					**1,100,000.00**	**1,114,843.44**	**11,200.38**	**(1,126,043.82)**	**3.76**

	TRADE DATE	SETTLE DATE	CUSIP	DESCRIPTION	PAR VALUE	BOOK VALUE	TOTAL	NET REALIZED GAIN/LOSS
MATURITY								
	10/15/2025	10/15/2025	91282CFP1	UNITED STATES TREASURY 4.25 10/15/2025	(1,000,000.00)	1,000,625.00	1,000,000.00	(625.00)
MATURITY TOTAL					**(1,000,000.00)**	**1,000,625.00**	**1,000,000.00**	**(625.00)**

California State Treasurer
Fiona Ma, CPA



Local Agency Investment Fund
P.O. Box 942809
Sacramento, CA 94209-0001
(916) 653-3001

CITY OF ALISO VIEJO

DIRECTOR OF FINANCIAL SVCS/ CITY TREAS
12 JOURNEY, #100
ALISO VIEJO, CA 92656

Account Number: 98-30-007

October 2025 Statement

Effective Date	Transaction Date	Tran Type	Confirm Number	Web Confirm Number	Authorized Caller	Amount
10/7/2025	10/7/2025	RW	1783249	1743862	ANN EIFERT	-250,000.00
10/14/2025	10/14/2025	RW	1783482	1744092	ANN EIFERT	-800,000.00
10/15/2025	10/14/2025	QRD	1785453	N/A	SYSTEM	101,005.41
10/20/2025	10/20/2025	RW	1786012	1746633	ANN EIFERT	-200,000.00
10/21/2025	10/21/2025	RW	1786062	1746684	ANN EIFERT	-300,000.00

Account Summary

Total Deposit:	101,005.41	Beginning Balance:	9,821,061.67
Total Withdrawal:	-1,550,000.00	Ending Balance:	8,372,067.08

PMIA/LAIF Performance Report as of 11/05/25

Quarterly Performance Quarter Ended 9/30/25

LAIF Apportionment Rate[2]:	4.34
LAIF Earnings Ratio[2]:	0.00011893333163814
LAIF Administrative Cost[1]*:	0.26
LAIF Fair Value Factor[1]:	1.001929581
PMIA Daily[1]:	4.19
PMIA Quarter to Date[1]:	4.24
PMIA Average Life[1]:	254

PMIA Average Monthly Effective Yields[1]

October	**4.150**
September	4.212
August	4.251
July	4.258
June	4.269
May	4.272

Pooled Money Investment Account Monthly Portfolio Composition [1] 9/30/25 $161.7 billion

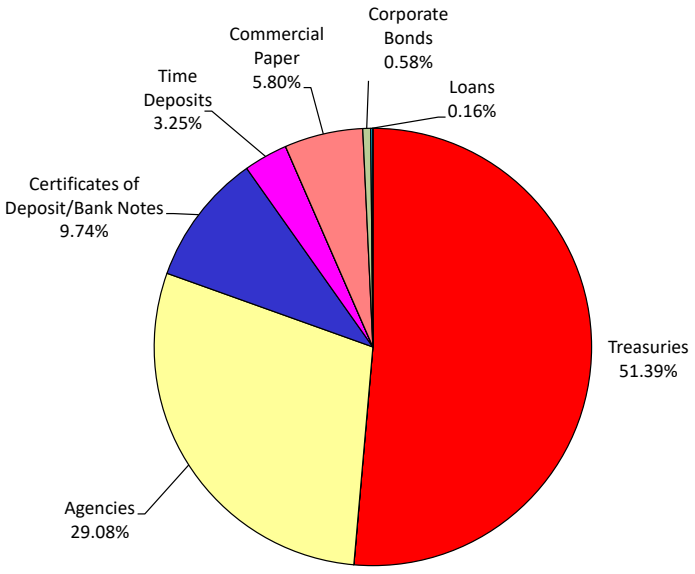


Chart does not include $987,000.00 in mortgages, which equates to 0.001%. Percentages may not total 100% due to rounding.

Daily rates are now available here. **View PMIA Daily Rates**

Notes: The apportionment rate includes interest earned on the CalPERS Supplemental Pension Payment pursuant to Government Code 20825 (c)(1) .

**The percentage of administrative cost equals the total administrative cost divided by the quarterly interest earnings. The law provides that administrative costs are not to exceed 5% of quarterly EARNINGS of the fund. However, if the 13-week Daily Treasury Bill Rate on the last day of the fiscal year is below 1%, then administrative costs shall not exceed 8% of quarterly EARNINGS of the fund for the subsequent fiscal year.*

Source:
[1] State of California, Office of the Treasurer
[2] State of California, Office of the Controller

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Ann Eifert, Director of Financial Services

SUBJECT: ANNUAL MEASURE M2 EXPENDITURE REPORT

Recommended Action:

Adopt a Resolution approving the City's annual Measure M2 expenditure report for fiscal year ending June 30, 2025.

Fiscal Impact:

There is no financial impact in approving the annual expenditure report. The annual report is required to receive Measure M2 funds.

Background:

Measure M2 provides funding to local agencies through a half cent sales tax measure for street and traffic related maintenance and improvements and other transportation projects such as the Senior Mobility Program. Local jurisdictions are required to submit an annual report to the Orange County Transportation Authority to continue funding. The city has received approximately $10.5 million since 2011.

Discussion:

Requirements for the Measure M2 funding program include an annual report for all Measure M2 revenues and expenditures during the fiscal year, general fund monies expended to satisfy Maintenance of Effort requirements, and fund balances at the beginning and end of the fiscal year. Measure M2 resources totaled $1,089,672 and expenditures totaled $757,795 for fiscal year 2024-25. Projects funded by Measure M2 include the Aliso Creek Road rehabilitation and Senior Mobility Program.

Attachments:

1. Resolution
2. Measure M2 Expenditure Report for FY 2024-25

RESOLUTION NO. 2025-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, CONCERNING THE MEASURE M2 (M2) EXPENDITURE REPORT FOR THE CITY OF ALISO VIEJO

WHEREAS, local jurisdictions are required to meet eligibility requirements and submit eligibility verification packages to the Orange County Transportation Authority (OCTA) in order to remain eligible to receive M2 funds; and

WHEREAS, local jurisdictions are required to adopt an annual M2 Expenditure Report as part of one of the eligibility requirements; and

WHEREAS, local jurisdictions are required to account for Net Revenues, developer/traffic impact fees, and funds expended by local jurisdiction in the M2 Expenditure Report that satisfy the Maintenance of Effort requirements; and

WHEREAS, the M2 Expenditure Report shall include all Net Revenue fund balances, interest earned and expenditures identified by type and program or project; and

WHEREAS, the M2 Expenditure Report must be adopted and submitted to the OCTA each year within six months of the end of the local jurisdiction's fiscal year to be eligible to receive Net Revenues as part of M2.

NOW, THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL FOR THE CITY OF ALISO VIEJO DOES HEREBY INFORM OCTA THAT:

a) The M2 Expenditure Report is in conformance with the template provided in the Measure M2 Eligibility Guidelines and accounts for Net Revenues including interest earned, expenditures during the fiscal year, and balances at the end of fiscal year.

b) The M2 Expenditure Report is hereby adopted by the City of Aliso Viejo.

c) The City of Aliso Viejo Director of Financial Services is hereby authorized to sign and submit the M2 Expenditure Report to OCTA for the fiscal year ending June 30, 2025.

PASSED, APPROVED AND ADOPTED this 3rd day of December, 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, KATHY BAILOR, Interim City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Resolution No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the 3rd day of December, 2025, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

City of Aliso Viejo_____ **Schedule 1**

M2 Expenditure Report

Fiscal Year Ended June 30, 2025

Beginning and Ending Balances

	Description	Line No.	Amount	Interest
Balances at Beginning of Fiscal Year				
A-M	Freeway Projects	1	$ -	$ -
O	Regional Capacity Program (RCP)	2	$ -	$ -
P	Regional Traffic Signal Synchronization Program (RTSSP)	3	$ -	$ -
Q	Local Fair Share	4	$ 1,783,680.30	$ 12,091.44
R	High Frequency Metrolink Service	5	$ -	$ -
S	Transit Extensions to Metrolink	6	$ -	$ -
T	Convert Metrolink Station(s) to Regional Gateways that connect Orange County with High-Speed Rail Systems	7	$ -	$ -
U	Senior Mobility Program or Senior Non-Emergency Medical Program	8	$ 107,256.53	$ -
V	Community Based Transit/Circulators	9	$ -	$ -
W	Safe Transit Stops	10	$ -	$ -
X	Environmental Cleanup Program (Water Quality)	11	$ -	$ -
	Other*	12	$ -	$ -
Balances at Beginning of Fiscal Year		13	$ 1,890,936.83	$ 12,091.44
	Monies Made Available During Fiscal Year	14	$ 998,524.45	$ 91,147.83
Total Monies Available (Sum Lines 13 & 14)		15	$ 2,889,461.28	$ 103,239.27
	Expenditures During Fiscal Year	16	$ 654,555.34	$ 103,239.27
Balances at End of Fiscal Year				
A-M	Freeway Projects	17	$ -	$ -
O	Regional Capacity Program (RCP)	18	$ -	$ -
P	Regional Traffic Signal Synchronization Program (RTSSP)	19	$ -	$ -
Q	Local Fair Share	20	$ 2,114,685.01	$ -
R	High Frequency Metrolink Service	21	$ -	$ -
S	Transit Extensions to Metrolink	22	$ -	$ -
T	Convert Metrolink Station(s) to Regional Gateways that connect Orange County with High-Speed Rail Systems	23	$ -	$ -
U	Senior Mobility Program or Senior Non-Emergency Medical Program	24	$ 120,220.93	$ -
V	Community Based Transit/Circulators	25	$ -	$ -
W	Safe Transit Stops	26	$ -	$ -
X	Environmental Cleanup Program (Water Quality)	27	$ -	$ -
	Other*	28	$ -	$ -

* Please provide a specific description

City of Aliso Viejo _____

M2 Expenditure Report

Schedule 2

Fiscal Year Ended June 30, 2025

Sources and Uses

	Description	Line No.	Amount	Interest
Revenues:				
A-M	Freeway Projects	1	$ -	$ -
O	Regional Capacity Program (RCP)	2	$ -	$ -
P	Regional Traffic Signal Synchronization Program (RTSSP)	3	$ -	$ -
Q	Local Fair Share	4	$ 946,305.60	$ 86,322.96
R	High Frequency Metrolink Service	5	$ -	$ -
S	Transit Extensions to Metrolink	6	$ -	$ -
T	Convert Metrolink Station(s) to Regional Gateways that connect Orange County with High-Speed Rail Systems	7	$ -	$ -
U	Senior Mobility Program or Senior Non-Emergency Medical Program	8	$ 52,218.85	$ 4,824.87
V	Community Based Transit/Circulators	9	$ -	$ -
W	Safe Transit Stops	10	$ -	$ -
X	Environmental Cleanup Program (Water Quality)	11	$ -	$ -
	Other*	12	$ -	$ -
TOTAL REVENUES (Sum lines 1 to 12)		13	$ 998,524.45	$ 91,147.83
Expenditures:				
A-M	Freeway Projects	14	$ -	$ -
O	Regional Capacity Program (RCP)	15	$ -	$ -
P	Regional Traffic Signal Synchronization Program (RTSSP)	16	$ -	$ -
Q	Local Fair Share	17	$ 615,300.89	$ 98,414.40
R	High Frequency Metrolink Service	18	$ -	$ -
S	Transit Extensions to Metrolink	19	$ -	$ -
T	Convert Metrolink Station(s) to Regional Gateways that connect Orange County with High-Speed Rail Systems	20	$ -	$ -
U	Senior Mobility Program or Senior Non-Emergency Medical Program	21	$ 39,254.45	$ 4,824.87
V	Community Based Transit/Circulators	22	$ -	$ -
W	Safe Transit Stops	23	$ -	$ -
X	Environmental Cleanup Program (Water Quality)	24	$ -	$ -
	Other*	25	$ -	$ -
TOTAL EXPENDITURES (Sum lines 14 to 25)		26	$ 654,555.34	$ 103,239.27
TOTAL BALANCE (Subtract line 26 from 13)		27	$ 343,969.11	$ (12,091.44)

* Please provide a specific description

M2 Expenditure Report

Fiscal Year Ended June 30, 2025

Streets and Roads Detailed Use of Funds

Type of Expenditure	Line No.	MOE	Developer / Impact Fees+	O	O Interest	P	P Interest	Q	Q Interest	X	X Interest	Other M2[2]	Other M2 Interest	Other*	TOTAL
Indirect and/or Overhead	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction & Right-of-Way															
New Street Construction	2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Street Reconstruction	3a	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Street Reconstruction - Pavement	3b	$ -	$ -	$ -	$ -	$ -	$ -	$ 615,300.89	$ 98,414.40	$ -	$ -	$ -	$ -	$ -	$ 713,715.29
Signals, Safety Devices, & Street Lights	4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Pedestrian Ways & Bikepaths	5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Drains	6	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Damage	7a	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Damage - Pavement	7b	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Construction[1] (Sum Lines 2 to 7b)	8	$ -	$ -	$ -	$ -	$ -	$ -	$ 615,300.89	$ 98,414.40	$ -	$ -	$ -	$ -	$ -	$ 713,715.29
Right of Way Acquisition	9	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Construction & Right-of-Way (Sum Lines 8 & 9)	10	$ -	$ -	$ -	$ -	$ -	$ -	$ 615,300.89	$ 98,414.40	$ -	$ -	$ -	$ -	$ -	$ 713,715.29
Maintenance															
Patching	11	$ 10,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000.00
Overlay & Sealing	12	$ 45,414.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 45,414.50
Street Lights & Traffic Signals	13	$ 16,714.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,714.70
Storm Damage	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Street Purpose Maintenance	15a	$ 623,430.61	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 623,430.61
Other Street Purpose Maintenance - Pavement	15b	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Maintenance[1] (Sum Lines 11 to 15b)	16	$ 695,559.81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 695,559.81
Other	17		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 39,254.45	$ 4,824.87	$ -	$ 44,079.32
GRAND TOTALS (Sum Lines 1, 10, 16, 17)	18	$ 695,559.81	$ -	$ -	$ -	$ -	$ -	$ 615,300.89	$ 98,414.40	$ -	$ -	$ 39,254.45	$ 4,824.87	$ -	$ 1,453,354.42
Finance Director Confirmation	19	Any California State Constitution Article XIX streets and road eligible expenditure may be "counted" in local jurisdictions' calculation of MOE if the activity is supported (funded) by a local jurisdictions' discretionary funds (e.g. general fund). The California State Controller also provides useful information on Article XIX and the Streets and Highways Code eligible expenditures in its "Guidelines Relating to Gas Tax Expenditures for Cities and Counties". I have reviewed and am aware of these guidelines and their applicability in calculating and reporting on Maintenance of Effort expenditures. Finance Director initial: _____													

[1] Includes direct charges for staff time
[2] Other M2 includes A-M, R,S,T,U,V, and W
+ Transportation related only
* Please provide a specific description

Legend

Project	Description
A-M	Freeway Projects
O	Regional Capacity Program (RCP)
P	Regional Traffic Signal Synchronization Program (RTSSP)
Q	Local Fair Share
R	High Frequency Metrolink Service
S	Transit Extensions to Metrolink
T	Convert Metrolink Station(s) to Regional Gateways that connect Orange County with High-Speed Rail Systems
U	Senior Mobility Program or Senior Non-Emergency Medical Program
V	Community Based Transit/Circulators
W	Safe Transit Stops
X	$ -

City of Aliso Viejo _____ Schedule 4

M2 Expenditure Report

Fiscal Year Ended June 30, 2025

Local Fair Share Project List

PROJECT NAME	TYPE OF EXPENDITURE	AMOUNT	INTEREST
#134 Aliso Creek Road Rehab - Enterprise to SR73	CON - Street Reconstruction - Pavement	$ 615,300.89	$ 98,414.40

M2 Expenditure Report
Fiscal Year Ended June 30, 2025

I hereby certify that:

☑ All the information attached herein and included in schedules 1 through 4 is true and accurate to the best of my knowledge;

☑ The interest earned on Net Revenues allocated pursuant to the Ordinance shall be expended only for those purposes for which the Net Revenues were allocated;

☑ The City/County of Aliso Viejo is aware of the State Controller's "Guidelines Relating to Gas Tax Expenditures for Cities and Counties", which is a guide for determining MOE Expenditures for M2 Eligibility purposes;

☑ The City/County's Expenditure Report is in compliance with direction provided in the State Controller's "Guidelines Relating to Gas Tax Expenditures for Cities and Counties;" and

☑ The City/County of Aliso Viejo has expended in this fiscal year an amount of local discretionary funds for streets and roads purposes at least equal to or exceeding the FY 2024-25 MOE benchmark dollar amount [11].

Ann Eifert
Director of Finance (Print Name)

10/29/25
Date

Ann Eifert
Signature

[11] Jurisdictions are encouraged to submit MOE eligible expenditures higher than their MOE benchmark, so that should certain expenses be ruled ineligible during an MOE audit, the local jurisdiction still has sufficient MOE expenditures to demonstrate continued achievement of the MOE benchmark.

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Shaun Pelletier, Public Works Director City Engineer

SUBJECT: APPROVAL OF THE SUBMITTAL OF THE OSO PARKWAY/PACIFIC PARK DRIVE/GLENWOOD DRIVE REGIONAL TRAFFIC SIGNAL SYNCHRONIZATION PROJECT TO THE ORANGE COUNTY TRANSPORTATION AUTHORITY

Recommended Action:

Adopt a Resolution approving the submittal of the Oso Parkway/Pacific Park Drive/Glenwood Drive Regional Traffic Signal Synchronization Project to OCTA for funding under the competitive Measure M2 Regional Traffic Signal Synchronization Program (Project P).

Fiscal Impact:

If awarded, the City of Aliso Viejo will be responsible for a local match of 20%, which is estimated at $468,292. This would be funded with Measure M Fair Share Funds and would be included in the FY 2026-27 CIP budget.

Background:

In 1990, Orange County voters approved Measure M, a 20-year half-cent local transportation sales tax. Then in 2006, Orange County voters approved the renewal of the Measure M half-cent transportation sales tax, known as Measure M2, through 2041. OCTA distributes Measure M2 funds on a formula basis or through a competitive process.

Discussion:

The Regional Traffic Signal Synchronization Program (Project P) provides funds to improve traffic flow, reduce congestion, and reduce greenhouse gas emissions along key corridors and across multiple jurisdictions in Orange County. Most recently, the City received Project P funding for traffic signal synchronization along Aliso Creek Road and La Paz Road.

As part of its 2025 Call for Projects under Measure M2, OCTA accepted project applications for Project P. The application process requires that the City adopt a Resolution supporting the proposed project improvements.

The City of Aliso Viejo will serve as the lead agency in preparing and submitting the Project P application for the Oso Parkway/Pacific Park Drive/Glenwood Drive corridor. The City is partnering with the City of Laguna Niguel, City of Laguna Hills, City of Mission Viejo, County of Orange and Caltrans to prepare and submit a project application for signal synchronization along Oso Parkway/Pacific Park Drive/Glenwood Drive between Moulton Parkway the SR-241 NB On-Ramp. The total improvement cost within the City of Aliso Viejo is estimated at $2,341,468. If awarded, the City of Aliso Viejo will be responsible for a local match of 20%, which is estimated at $468,292. The total project cost across all the agencies is estimated at $3.8 Million.

This regional corridor is approximately 10.6 miles long and includes 41 signalized intersections, 24 of which are in the City of Aliso Viejo (18 are located along the main corridor and 6 are offset signals). The project includes implementation of radar vehicle detection, installation of traffic signal fiber optic communication system, cabinet upgrades, and infrastructure improvements to support a traffic management center at City Hall.

Attachment:

1. Resolution

RESOLUTION NO. 2025-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING THE SUBMITTAL OF ONE IMPROVEMENT PROJECT TO THE ORANGE COUNTY TRANSPORTATION AUTHORITY FOR FUNDING UNDER THE COMPETITIVE MEASURE M2 REGIONAL TRANSPORTATION SIGNAL SYNCHRONIZATION PROGRAM

THE CITY COUNCIL OF THE CITY OF ALISO VIEJO HEREBY RESOLVES, DETERMINES, AND ORDERS AS FOLLOWS THAT:

WHEREAS, the Measure M2 Regional Traffic Signal Synchronization Program targets over 2000 signalized intersections across Orange County to maintain traffic signal synchronization, improve traffic flow, and reduce congestion across jurisdictions; and

WHEREAS, the City of Aliso Viejo has been declared by the Orange County Transportation Authority to meet the eligibility requirements to receive revenues as part of Measure M2; and

WHEREAS, the City of Aliso Viejo must include all projects funded by Net Revenues in the seven-year Capital Improvement Program as part of the Renewed Measure M Ordinance eligibility requirement; and

WHEREAS, the City of Aliso Viejo authorizes a formal amendment to the seven-year Capital Improvement Program to add projects approved for funding upon approval from the Orange County Transportation Authority Board of Directors, if necessary; and

WHEREAS, the City of Aliso Viejo has currently adopted a Local Signal Synchronization Plan consistent with the Regional Traffic Signal Synchronization Master Plan as a key component of local agencies' efforts to synchronizing traffic signals across local agencies' boundaries; and

WHEREAS, the City of Aliso Viejo will provide matching funds for the project as required by the Orange County Comprehensive Transportation Funding Programs Procedures Manual; and

WHEREAS, the City of Aliso Viejo will not use Renewed Measure M funds to supplant Developer Fees or other commitments; and

WHEREAS, the City of Aliso Viejo desires to implement multi-jurisdictional signal synchronization listed below.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Aliso Viejo hereby requests the Orange County Transportation Authority allocate funds in the amounts specified in the City's application to said City from the Regional Traffic Signal

Synchronization Program. Said funds, if approved, shall be matched by funds from said City as required and shall be used as supplemental funding to aid the City in signal synchronization along the following street(s):

1) Oso Parkway/Pacific Park Drive/Glenwood Drive between Moulton Parkway to SR-241

PASSED, APPROVED AND ADOPTED this 3rd day of December, 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith
City Attorney

ATTEST:

_____
Kathy Bailor
Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, KATHY BAILOR, Interim City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Resolution No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the ___ day of _____, 2025, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: So Kim, Community Development Director

SUBJECT: GENERAL PLAN AMENDMENT GPA-2025-00002, ZONE CHANGE ZC-2025-00002, VESTING TENTATIVE TRACT MAP 19340, SITE DEVELOPMENT PERMIT SDP-2024-00001, ENVIRONMENTAL ASSESSMENT, AND DEVELOPMENT AGREEMENT AND ADOPTION OF A MITIGATED NEGATIVE DECLARATION FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY AT 95 ARGONAUT

Recommended Action:

Conduct a public hearing and:

1. Adopt a Resolution entitled: A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, ADOPTING A MITIGATED NEGATIVE DECLARATION AND A MITIGATION MONITORING AND REPORTING PROGRAM PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT FOR GENERAL PLAN AMENDMENT GPA-2025-00002, ZONE CHANGE ZC-2025-00002, VESTING TENTATIVE TRACT MAP 19340, AND A DEVELOPMENT AGREEMENT TO ALLOW THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01);

2. Adopt a Resolution entitled: A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING AN AMENDMENT TO THE GENERAL PLAN LAND USE DESIGNATION AND ASSOCIATED LAND USE MAP FROM BUSINESS PARK TO HIGH DENSITY RESIDENTIAL FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01);

3. Introduce for first reading an Ordinance entitled: A ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING A ZONE CHANGE FROM BUSINESS PARK 2 TO HIGH DENSITY RESIDENTIAL DISTRICT FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (623-091-01);

4. Adopt a Resolution entitled: A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING VESTING TENTATIVE TRACT MAP 19340 FOR SUBDIVISION INTO CONDOMINIUM PURPOSES AND SITE DEVELOPMENT PERMIT (SDP-2024-00001) TO ALLOW THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (623-091-01); and

5. Introduce for first reading an Ordinance entitled: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING A DEVELOPMENT AGREEMENT BETWEEN THE CITY AND MLC HOLDINGS, INC. FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01).

Background:

On October 24, 2024, MLC Holdings, Inc. ("Applicant") submitted a General Plan amendment, zone change, vesting tentative tract map, site development permit, and a Development Agreement application to demolish an existing office building to accommodate the construction of a multi-family residential community at 95 Argonaut ("Project").

On November 6, 2024, the City Council held a duly noticed public review to receive and provide initial feedback on concept plans for the Project. At that meeting the City Council directed Staff to contract with a third-party consultant to negotiate terms of the Development Agreement and provide regular updates to the City Council.

On November 5, 2025, the City Council held a study session to discuss development agreements and impact fees. No action was taken.

On November 19, 2025, the City Council discussed the parameters of the public benefit contributions of the Development Agreement and continued the meeting to December 3, 2025, to allow the Applicant additional time to address easement encroachment issues with the Aliso Viejo Community Association.

Discussion:

Existing Site

The existing site measures 2.83 acres (123,275 square feet) in size, located at the southeast corner of Glenwood Drive and 95 Argonaut ("Site"). The site is developed with a two-story, 48,000 square foot office building with exterior parking areas. The site is accessed by a single entry/exit located at the interior south property line and is located within a larger business park. The General Plan land use and zoning designations for the site are Business Park and Business Park 2, respectively. Surrounding land uses are detailed in Table 1 below.

Table 1	Existing Uses
North	Attached multi-family residences, single-family residences, Glenwood Community Park
West & South	Outpatient medical, storage, light industrial, hotel, fitness studios, restaurant, research laboratories, and other offices
East	Moulton Niguel Water District, single-family residences

Proposed Project

The Applicant is proposing to redevelop the Site by demolishing the existing office building and developing a residential community consisting of 61 townhome units, which includes three units restricted to very low-income households. The Project details are provided in Table 2 below:

Table 2	Project Details
Number of Units	• 61 units spread across 8 separate buildings. Each building will consist of 7 to 8 attached units. • Two- to 4-bedroom units measuring 1,210 to 1,765 square feet in size.
Building	Three-story townhomes, measuring 38' max. height. The exterior of the building will have stucco finish, framed windows-some with faux shutters, recessed entryway, wrought iron balcony railings, hip and gable roofs with tile.
Parking	Each unit will have two enclosed private garages at ground floor level. Each garage will include additional areas for trash bins, water heater, and private storage. Driveways are not proposed. An additional 28 guest parking spaces are provided on site.
Common Space	32% (25% required) consisting of a 5,215 square foot private park (BBQ counter, shade structure, picnic tables, benches, play equipment), and approximately 35,000 square feet spread throughout the site as shared yards, walkways, and perimeter landscaping. Exterior mechanical units will be screened with landscaping.
Miscellaneous	Community will not be gated, however, the perimeter of the site will be secured with fencing and landscaped. Entrance to the site will be enhanced with paving, signage, and accent trees. Streetlights, bollards, and shade structure lighting will be designed with recessed, downward-facing light sources.
Grading	25,400 cubic yards ("CY") of grading is proposed, 14,100 CY cut and 11,300 CY fill, with a net export of 2,800 CY. The maximum depth of cut is 8' with 6' fill to level the property.
Infrastructure	New onsite water lines, sewer lines, storm drains, underground storm water facility, and fire hydrants.

Entitlements

The Project requires approval of a General Plan Amendment, Zone Change, Vesting Tentative Tract Map, Site Development Permit, and Development Agreement. Additionally, the Project qualifies for the State Density Bonus Program, and the Applicant is requesting specific waivers and concessions. Each of these components is discussed in detail below.

General Plan Amendment

The Applicant requests to change the existing office use to residential use to develop the Project. This requires an amendment to the General Plan land use designation from Business Park to High Density Residential. Pursuant to Aliso Viejo Municipal Code ("AVMC") Section 15.78.020 (General Plan Amendments), the City Council must make the following findings prior to approving the general plan amendment:

1. Public Welfare. Approval of the amendment will not create conditions materially detrimental to the public health, safety and general welfare.

   While the Site is located within a larger business park, it is at an entry corner, providing a natural transition between the non-residential uses and the surrounding residential neighborhoods. Directly across from the site to the north are established multi-family and single-family residential communities. Notably, the adjacent multi-family development shares several characteristics with the Project, including large buildings, each composed of six attached units. The architectural style is also complementary, featuring stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and shared open space without private driveways. The single-family tract homes surrounding that multi-family community are also similar in architectural style in terms of color, exterior finish, design, and materials.

   Additionally, the Site is situated in an area with established infrastructure, including roads, utilities, and public services, that can adequately support residential development. As part of the environmental assessment, the Project required comprehensive studies addressing air quality, energy, greenhouse gas emissions, biological resources, cultural resources, geotechnical conditions, hydrology and water quality, noise, and transportation impacts. As discussed further in the Environmental Assessment section below, these studies concluded that the Project would result in less-than-significant impacts with the implementation of proposed mitigation measures. The Project plans also cleared preliminary review by the Orange County Fire Authority (OCFA).

   Furthermore, the Project aligns with the City's housing goals by facilitating the development of new housing opportunities. Future construction on the Site will be subject to plan check review and inspection process to ensure full compliance with applicable building and safety standards. Therefore, this finding can be made.

2. Internal General Plan Consistency. The amendment is internally consistent with those goals, objectives, and policies of the general plan, which are not being amended.

   The proposed amendment is consistent with the goals and policies of the General Plan listed below in that it incorporates landscaping aligned with the City Council-approved plant palette, emphasizing low-water, drought-tolerant species; features building materials, colors, and architectural design that are compatible with the surrounding residential communities; includes a development impact fee that a portion of which is consistent with the City's parkland ordinance; proposes three affordable housing units restricted to very low-income households, thereby enhancing housing diversity and affordability; and introduces rezoning to facilitate residential development that includes affordable units in support of the City's housing objectives. Therefore, this finding can be made.

   In the General Plan, 'COS' refers to Conservation and Open Space policies, 'H' for Housing policies and goals, and 'LU' for Land Use policies.

   - Policy COS-1.2 Reduce the amount of water used for landscaping and increase use of native and low water plants. Maximize use of native, low-water plants for landscaping of areas adjacent to sidewalks or other impermeable surfaces.
   - Policy COS-4.2 Encourage and maintain high-quality architectural and landscaping designs that enhance or complement the community's visual character.
   - Policy COS-7.5 Ensure that new development provides park land and/or improvements at a fair share ratio, pursuant to the City's Parkland Ordinance.
   - Goal H-1: Encourage a diversity of housing types and provide affordability levels within Aliso Viejo to meet the needs of community residents.
   - Policy H-1.1 Identify sites appropriate for the development of a variety of housing types and price ranges to meet the needs of all socioeconomic segments of the community through the disbursement of affordable units in projects.
   - Policy H-1.2 Encourage through the use of density bonuses and rezoning to allow for residential development, development of affordable housing opportunities throughout the community, as well as development of housing for elderly and low- and moderate-income households near public transportation services.
   - Policy H-1.4 Ensure that a portion of future residential development is affordable to low- and very-low-income households by designating certain sites as having the potential to be used for residential uses.
   - Policy H-3.8 Review existing zoning policies and explore zoning changes to facilitate the development of affordable housing.
   - Policy LU-12.2 As a condition upon new development, require payment of park fees and/or dedication and provision of parkland, recreation facilities and/or multi-use trails that improve the public and private recreation system.

3. Land Use Compatibility. In the case of amendments to the General Plan land use policy map, the new designation is compatible with the designations on nearby properties.

   The Site is located at the edge of a larger business park and directly across from established multi-family and single-family residential neighborhoods. The adjacent multi-family development shares several characteristics with the Project, including large attached-unit buildings, stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and shared open space without private driveways. These similarities ensure architectural and functional continuity between the Project and existing residential uses. Furthermore, the transition from non-residential uses within the business park to residential neighborhoods is reinforced by the Site's location at a corner entry, creating a natural buffer. The proposed land use designation therefore complements the surrounding residential character. Therefore, this finding can be made.

4. Property Suitability. In the case of amendments to the general plan land use policy map, the new designation is suitable for the location, access, visual character and topography of the subject property.

   The property is located along established roadways with adequate vehicular and pedestrian access and is supported by existing infrastructure, including utilities and public services, sufficient to accommodate residential development. The Site is generally level, with a slight descending slope from east to west, and sits several feet below the street elevations to the north and west. Proposed grading will consist primarily of recompaction and limited export to further level the Site, resulting in finished elevations comparable to current conditions. Architecturally, the Project incorporates building styles, materials, and landscaping consistent with adjacent residential communities, ensuring visual compatibility with the surrounding neighborhood. The Site's position at the entry corner of the business park further enhances its suitability, providing a natural transition between non-residential and residential uses. Therefore, this finding can be made.

<u>Zone Change</u>

In addition to the proposed General Plan amendment, the Project requires a zoning designation change for the Site from Business Park 2 to High Density Residential. Pursuant to AVMC Section 15.78.040 (Zone Change and Prezoning), the City Council must make the following findings prior to approving the zone change. All these findings can be made as evidenced in General Plan Amendment Finding Nos. 1, 2, and 4 above.

1. Public Welfare. Approval of the zone change will not create conditions materially detrimental to the public health, safety and general welfare.

2. General Plan Consistency. The zone change is consistent with the goals, objectives, and policies of the general plan and any applicable specific plan.

3. Land Use Compatibility. The zone change is compatible with the zoning and land use on nearby properties.

4. Property Suitability. The zone change is suitable for the location, access, visual character and topography of the subject property.

Vesting Tentative Tract Map

Pursuant to the requirements of the California Subdivision Map Act (Gov. Code §§ 66410 et seq.) and Title 14 of the Aliso Viejo Municipal Code, no tentative map shall be approved unless the following findings of consistency with the General Plan and compliance with CEQA have been made.

1. The proposed map is consistent with the applicable General and Specific Plans. The Site has a General Plan land use designation of Business Park.

   The Applicant proposes a General Plan Amendment to re-designate the property for High Density Residential, which allows for residential development of 19 to 30 dwelling units per acre. The Vesting Tentative Tract Map proposes 61 multi-family homes on 2.85 acres, resulting in a density of 21.4 dwelling units per acre. As conditioned, the Vesting Tentative Tract Map will not take effect unless the General Plan Amendment, Zone Change, Site Development Permit, and Development Agreement take effect. Accordingly, the proposed map would be consistent with the applicable General Plan Land Use designation. There is no applicable Specific Plan for the Site. Therefore, this finding can be made.

2. The design or improvement of the proposed subdivision is consistent with the General and Specific Plans.

   The Project is consistent with the goals and policies of the Conservation and Open Space, Housing, and Land Use element in that the Project promotes orderly growth, provides a compatible transition between non-residential and residential uses, supports housing objectives by creating new residential opportunities, and utilizes existing infrastructure in a manner consistent with the community's long-term vision and planning framework. The Project is also subject to mitigation measures and conditions of approval that address potential impacts related to traffic, noise, air quality, and emergency access. There is no applicable Specific Plan for the Project site. Therefore, this finding can be made.

3. The site is physically suitable for the type of development.

   The Site is generally level, has adequate access from existing public streets, and is served by established infrastructure systems including water, sewer, storm drainage, and utilities. The Site's size, configuration, and surrounding land use context are appropriate to accommodate the Project consistent with applicable

zoning and General Plan designations. No unusual topographic, geologic, or environmental conditions have been identified that would render the site unsuitable for residential use. Therefore, this finding can be made.

4. The site is physically suitable for the proposed density of development.

   The Project includes a General Plan Amendment to re-designate the property to High Density Residential, which permits residential development at a range of 19 to 30 dwelling units per acre. The Vesting Tentative Tract Map proposes 61 multi-family homes on 2.85 acres, resulting in a density of approximately 21.4 dwelling units per acre. This proposed density falls within the allowable range for the High-Density Residential designation. Therefore, this finding can be made.

5. The design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage or substantial and avoidable injury to fish or wildlife or their habitat.

   The Project site is currently developed with an office building, surface parking lot, and landscaping. There is no fish, wildlife, or any habitat that would be affected by the Project.

6. The design of the subdivision or type of improvements is not likely to cause serious public health problems.

   The Project will be served by existing off-site infrastructure, with new on-site water, sewer, and storm drain facilities designed to connect to and extend those systems. All facilities have adequate capacity to accommodate the proposed residential use. The subdivision design incorporates standard improvements, including paved streets, sidewalks, street lighting, and utility connections that will be constructed in compliance with applicable building codes and City engineering standards. The Initial Study prepared for the Project did not identify any conditions that would result in significant public health impacts, and all potentially significant effects have been mitigated to less-than-significant levels.

7. The design of the subdivision or the type of improvements will not conflict with existing easements, acquired by the public at large, for access through or use of property within the subdivision.

   The Project as conditioned requires the Applicant to obtain easement holders' authorization for any improvements or encroachments prior to building permit issuance.

Site Development Permit

The purpose of a site development permit ("SDP") is to ensure that new development conforms to the development and design provisions of the AVMC, including but not

limited to permitted uses, development standards, and supplemental regulations. Pursuant to AVMC Section 15.74.020 (Site Development Permits), the City Council must make the following findings prior to approving the SDP:

1. Consistency with General Plan. The Project is consistent with the general plan and any applicable specific plan.

   The Project includes a General Plan Amendment ("GPA"). As detailed in the preceding GPA section, all required findings to support the amendment can be made.

2. Consistency with Zoning Code. The land use and associated development conform to the permitted use provisions and development standards of this zoning code and is consistent with this code and any applicable specific plan.

   The proposed zone change to High Density Residential, together with the associated development, is compatible with surrounding land uses, providing a transition that complements the existing neighborhood character. The property is suitable for residential use based on its location, access, visual character, and topography, and existing infrastructure is adequate to support the proposed development. The Project incorporates reduced perimeter setbacks for buildings, landscaping, and mechanical equipment, which are expressly permitted as incentives under California's State Density Bonus Law (Government Code §65915). This law requires cities to grant certain concessions and waivers or relaxed development standards when a project includes a qualifying percentage of affordable housing units. Because the Project meets the threshold of 5% for very low-income households, it is eligible for the setback reductions the building setbacks, landscaping setbacks, and mechanical equipment placement in front yard setbacks.

   In addition, the Project qualifies for a reduced parking ratio under the State Density Bonus Law. Based on this ratio, a total of 112 parking spaces is required for the Project. The law does not prescribe how these spaces must be allocated between private resident parking and guest parking; rather, the distribution is left to the Applicant. In this case, the Applicant is proposing 150 parking spaces, consisting of 122 private residential spaces and 28 guest spaces. Although the City does not permit tandem parking, and tandem stalls must therefore be counted as a single space, the Project would still provide a total of 117 spaces (89 private and 28 guest), which exceeds the required 112 spaces.

   With these provisions, the Project conforms to the permitted use requirements and development standards of the zoning code and remains consistent with all applicable Specific Plan regulations. Therefore, this finding can be made.

3. Compliance with CEQA. Processing and approval of the permit application are in compliance with the requirements of the California Environmental Quality Act. This finding can be made as evidenced in the Environmental Analysis below.

4. Architectural Design. The architectural design of the Project, including but not limited to the architectural style, scale, building mass, materials, colors, architectural details, and roof style, is compatible with surrounding development.

   Directly north of the site are established multi-family and single-family residential communities. The adjacent multi-family development, in particular, shares several defining characteristics with the Project, including similarly scaled buildings composed of six attached units. The architectural style is complementary, featuring stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and communal open space without private driveways. The surrounding single-family tract homes also reflect a consistent architectural design, with comparable color palettes, exterior finishes, and material selections. The Project further enhances this compatibility through the inclusion of framed windows, some accented with faux shutters, as well as a mix of hip and gable roof forms, which reflects the roof styles found in nearby residences. Collectively, these design elements ensure compatibility with the surrounding development and this finding can be made.

5. Site Design. The site design of the Project, including but not limited to project entries, interior circulation, pedestrian and bicycle access, pedestrian amenities, screening of equipment and trash enclosures, exterior lighting, and other site design elements, is compatible with surrounding development.

   Based on the analysis provided in the Initial Study and supporting documentation, the Project will retain the existing single-entry driveway at the southern end of the site along Argonaut. The internal private roadway system designed to provide two-way access to residential garages and guest parking spaces, emergency access, hydrant placement has been reviewed and conceptually approved by both the Building Division and the OCFA. Each unit will include an enclosed private garage with dedicated space for trash bin storage. Approximately 32% of the site will be dedicated to open space, including a private park, shared yards, pedestrian walkways, and perimeter landscaping. Perimeter fencing and exterior mechanical equipment will be screened with additional landscaping, and the site entrance will be enhanced with decorative paving, signage, and accent trees. Lighting throughout the site, including streetlights, bollards, and shade structures, will be designed with recessed, downward-facing fixtures to minimize light spill. These design elements are compatible with surrounding residential communities, and the required finding can be made.

6. Landscape Design. Project landscaping, including but not limited to the location, type, size, color, texture, and coverage of plant materials, has been designed so as to provide visual relief, complement buildings, visually emphasize prominent design elements and vistas, screen undesirable views, provide a harmonious

transition between adjacent land uses and between development and open space, and provide an overall unifying influence to enhance the visual continuity of the Project.

The Project incorporates a landscape plan that enhances the overall visual continuity of the site and complements the architectural character of the development. Approximately 32% of the site is dedicated to open space, which includes a private park featuring a BBQ counter, shade structure, picnic tables, benches, and play equipment. In addition, approximately 35,000 square feet of shared yards, pedestrian walkways, and perimeter landscaping are distributed throughout the site to provide visual relief and promote connectivity. Landscaping is also proposed around the exterior mechanical equipment and perimeter fencing to screen undesirable views. The site entrance is designed to create a welcoming and visually prominent focal point, enhanced with decorative paving, signage, and accent trees. The plant palette aligns with the City Council-approved plant palette, emphasizing low-water, drought-tolerant species. Therefore, this finding can be made.

Development Agreement

This Project requires a land use and zoning change from office to residential, which requires a Development Agreement ("DA") to ensure the Project is implemented as approved, minimize potential adverse impacts, and secure long-term community benefits. Under the DA (Attachment 5, Exhibit A), the Applicant has agreed to pay a one-time public impact fee of $1,038,652, consisting of $213,850 for fiscal impacts and $824,802 for park in-lieu fees. Full payment must be made to the City prior to the issuance of any building permit, and no permit will be issued until the City has received the payment and confirmed compliance with all applicable fee requirements.

Pursuant to AVMC 15.82.010 (Development Agreements and Other Actions), the City Council must make the following findings prior to approving the DA:

1. Public Welfare. Approval of the development agreement will not create conditions materially detrimental to the public health, safety and general welfare.

   The Project is consistent with the policies and regulations of the proposed High-Density Residential zoning district. The DA includes provisions to ensure compliance with applicable land use regulations, defines the scope of the Project, and identifies the public benefit obligations of the Applicant. The Project is compatible with adjacent multi-family and single-family communities in terms of layout, architectural style, materials, and open space; the site is served by existing infrastructure, including roads, utilities, and public services sufficient to support residential development; that the environmental assessment determined impacts would be less than significant with mitigation; the Project advances the City's housing goals by creating new housing opportunities; and future construction will

be subject to plan check review and inspection to ensure compliance with all applicable building and safety standards. Therefore, this finding can be made.

2. General Plan Consistency. The development agreement is consistent with the goals, objectives, and policies of the general plan and any applicable specific plan.

   The Project is consistent with the goals and policies of the Conservation and Open Space, Housing, and Land Use elements in that the Project promotes orderly growth, provides a compatible transition between non-residential and residential uses, supports housing objectives by creating new residential opportunities, and utilizes existing infrastructure in a manner consistent with the community's long-term vision and planning framework. The Project is also subject to mitigation measures and conditions of approval that address potential impacts related to traffic, noise, air quality, and emergency access. The A incorporates, among other provisions, the scope of the Project, compliance with governing regulations, and the Applicant's public benefit obligations, ensuring that this finding can be made.

Environmental:

Pursuant to the California Environmental Quality Act ("CEQA") and the State CEQA Guidelines, the City prepared an Initial Study/Mitigated Negative Declaration ("IS/MND") to evaluate the potential environmental impacts of the proposed Project. The analysis concluded that the Project could result in potentially significant environmental impacts; however, all such impacts can be reduced to less-than-significant levels through the implementation of mitigation measures. As a result, the City also prepared a Mitigation Monitoring and Reporting Program ("MMRP") in compliance with CEQA.

The IS/MND was circulated for a 20-day public review period, from October 2 to October 22, 2025. Distribution included the State Clearinghouse, required public agencies, property owners within a 300-foot radius of the Project site, and interested parties. One comment was received from the California Department of Toxic Substances Control (DTSC) (Attachment 1, Exhibit C), recommending that all imported soil and fill material be tested for contaminants, that any identified contaminants be addressed, and that the DTSC fact sheet on imported fill be referenced. Although the Applicant's geotechnical report concludes that the existing fill materials are suitable for reuse, DTSC's recommendations have been incorporated as conditions of project approval (Attachment 4, Exhibit A).

The IS/MND determined that the Project would not result in significant impacts to aesthetics, agricultural and forestry resources, air quality, energy, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, or wildfire. However, it identified potentially significant impacts to biological resources, cultural resources, tribal cultural resources, and geology and soils. With the implementation of mitigation measures, these impacts would be reduced to less than significant levels. The mitigation measures are detailed in

the Mitigation Monitoring and Reporting Program (MMRP) (Attachment 1, Exhibit B) and have been incorporated into the Conditions of Approval (Attachment 4, Exhibit A) for the Project.

City Staff recommends that the City Council adopt the IS/MND and MMRP based on the findings set forth in the accompanying resolution. If the Project is approved, a Notice of Determination must be filed with the County Clerk and the State Clearinghouse within five working days of approval.

Attachments:

1. Resolution (Mitigated Negative Declaration)
   a. Exhibit A – Initial Study/Mitigated Negative Declaration
   b. Exhibit B – Mitigation Monitoring and Reporting Program
   c. Exhibit C – Response to Comments

2. Resolution (General Plan Amendment)
   a. Exhibit A – Amendment to the General Plan Land Use Map

3. Ordinance (Zone Change)
   a. Exhibit A – Zone Change Map

4. Resolution (Vesting Tentative Tract Map and Site Development Permit)
   a. Exhibit A – Conditions of Approval
   b. Exhibit B – Proposed Plans

5. Ordinance (Development Agreement)
   a. Exhibit A – Development Agreement

RESOLUTION NO. 2025-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, ADOPTING A MITIGATED NEGATIVE DECLARATION AND A MITIGATION MONITORING AND REPORTING PROGRAM PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT FOR GENERAL PLAN AMENDMENT GPA-2025-00002, ZONE CHANGE ZC-2025-00002, VESTING TENTATIVE TRACT MAP 19340, AND A DEVELOPMENT AGREEMENT TO ALLOW THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01).

WHEREAS, on October 24, 2024, MLC Holdings, Inc. ("Applicant") submitted a general plan amendment, zone change, vesting tentative tract map, site development permit, and a development agreement application to demolish an existing office building to accommodate the construction of a multi-family residential community at 95 Argonaut ("Project");

WHEREAS, pursuant to the California Environmental Quality Act (Public Resources Code, § 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, title 14, § 15000 et seq.) (Collectively, "CEQA"), the City is the lead agency for the proposed of the Project;

WHEREAS, in accordance with State CEQA Guidelines section 15063, the City prepared an Initial Study to analyze whether the proposed Project may cause a potentially significant effect on the environment;

WHEREAS, based on the information contained in the Initial Study, which concluded that the proposed Project could have potentially significant impacts but that those impacts could be reduced to less than significant levels with implementation of proposed mitigation measures, the City determined that a Mitigated Negative Declaration ("MND") should be prepared for the proposed Project;

WHEREAS, the Initial Study/Mitigated Negative Declaration (IS/MND) (State Clearinghouse Number [SCH] 2025100301) was prepared pursuant to CEQA and the State CEQA Guidelines;

WHEREAS, pursuant to CEQA, the City prepared a program for reporting on or monitoring the changes which it has either required in the proposed Project or made a condition of approval to mitigate or avoid potential significant environmental effects (the "Mitigation Monitoring and Reporting Program" or "MMRP");

WHEREAS, in accordance with State CEQA Guidelines sections 15072 and 17073, the IS/MND was circulated for public review from October 2 to October 22, 2025;

WHEREAS, the City received one comment from the California Department of Toxic Substances Control, which the City has reviewed and responded to;

WHEREAS, the City has reviewed the final IS/MND, and relevant information contained in the record regarding the Project, and determined that all legal prerequisites to the adoption of the resolution have been met;

WHEREAS, on October 30, 2025, the City gave public notice of the City Council public hearing for consideration of a Mitigated Negative Declaration, General Plan Amendment GPA-2025-00002, Zone Change ZC-2025-00002, Vesting Tentative Tract Map 19340 and Site Development Permit SDP-2024-00001, for the Project by advertising in a newspaper of general circulation; by posting notices at City Hall and the Project site; and by mailing notices to owners of property within 300 feet, to the project applicant, and to local agencies that provide water, sewage, electricity and schools;

WHEREAS, on December 3, 2025, the City Council held a public hearing as prescribed by law and considered written and verbal public testimony that was submitted prior to the hearing and during the hearing, and evidence and recommendations presented by staff in the agenda report and oral presentation.

WHEREAS, no comments made in the public hearing conducted by the City, and no additional information submitted to the City, have resulted in substantial new information requiring substantial revisions that would trigger recirculation of the IS/MND or additional environmental review of the proposed Project under State CEQA Guidelines section 15073.5; and

WHEREAS, all other legal prerequisites to the adoption of this Resolution have occurred.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AS FOLLOWS:

Section 1. **Incorporation of Recitals.** The City Council hereby finds and determines that all of the recitals set forth above are true and correct. The above recitals are hereby incorporated as substantive findings of this Resolution.

Section 2: **Compliance with CEQA.** The City Council has reviewed and considered the information contained in the IS/MND, comments received, and other documents contained in the administrative record for the Project. The City Council finds that the IS/MND has been completed in compliance with CEQA, the State CEQA Guidelines, and the City's Local CEQA Guidelines.

Section 3. **Findings.** Based on the whole record before it, including the IS/MND, the administrative record and all other written and oral evidence presented to the City Council, the City Council finds that all environmental impacts of the Project are either less than significant or can be mitigated to less than significant levels with the mitigation measures outlined in the IS/MND, and the Mitigation Monitoring and Reporting

Program. The City Council finds that there is no substantial evidence in the administrative record supporting a fair argument that the Project may result in any significant environmental impact. The City Council finds that the IS/MND contains complete, objective, and accurate reporting of the environmental impacts associated with the Project and reflects the independent judgment and analysis of the City.

Section 4. **Adoption of The Mitigated Negative Declaration**. The City hereby approves and adopts the IS/MND, which is hereby attached to this Resolution as Exhibit "A".

Section 5. **Adoption of The Mitigation Monitoring And Reporting Program.** The City hereby adopts the MMRP, which is hereby attached to this Resolution as Exhibit "B". In the event of any inconsistencies between the mitigation measures as set forth in the IS/MND and the MMRP, the MMRP shall control.

Section 6. **Notice of Determination**. The City directs Staff to prepare, execute, and file a Notice of Determination with the County Clerk and the State Clearinghouse within five (5) working days of the passage and adoption of this Resolution.

Section 7: **Location of Documents.** The administrative record for the Project is maintained at City Hall located at 12 Journey, Suite 100, Aliso Viejo, CA 92656. The custodian of records is the City Clerk.

Section 8. **Execution of Resolution**. The Mayor shall sign this Resolution and the City Clerk shall attest and certify to the passage and adoption thereof.

PASSED, APPROVED AND ADOPTED this 3rd day of December 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, Kathy Bailor, City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Resolution No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the 3rd day of December 2025, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

Exhibit "A"
Initial Study/Mitigated Negative Declaration

Exhibit "B"
Mitigation Monitoring Program

Exhibit "C"
Response to Comments

FCS
An ADEC Innovation

95 Argonaut Residential Project

Draft Initial Study/Mitigated Negative Declaration

City of Aliso Viejo, Orange County, California

PREPARED FOR:

City of Aliso Viejo
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Aliso Viejo, CA 92656
949.425.2525

Contact: So Kim, Community Development Director

PREPARED BY:

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Contact: Cecilia So, Project Director
Tsui Li, Project Manager

October 2, 2025

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ACRONYMS AND ABBREVIATIONS

µg/m^3	micrograms per cubic meter
°F	degrees Fahrenheit
AB	Assembly Bill
ACM	asbestos-containing material
ADT	Average Daily Traffic
AERMOD	American Meteorological Society/EPA Regulatory Model
AFY	acre-feet per year
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ASTM	American Society of Testing and Materials
AVCA	Aliso Viejo Community Association
AVTIG	Aliso Viejo Transportation Impact Guidelines
Basin Plan	Water Quality Control Plan for the San Diego Basin
BERD	Built Environment Resource Directory
bgs	below ground surface
BMP	Best Management Practice
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CBC	California Building Standards Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CHL	California Historic Landmarks
CNEL	Community Noise Equivalent Level
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society

CNPSEI	California Native Plant Society Electronic Inventory
CO	carbon monoxide
CPHI	California Points of Historical Interest
CPTED	Crime Prevention Through Environmental Design
CREC	Controlled Recognized Environmental Conditions
CRHR	California Register of Historical Resources
CUSD	Capistrano Unified School District
CVC	California Vehicle Code
cy	cubic yard
DAMP	Drainage Area Management Plan
dB	decibels
dBA	A-weighted decibel
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DTSC	California Department of Toxic Substance Control
EMFAC	Emission Factors mobile source emissions model
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EV	electric vehicle
EVSE	electric vehicle supply equipment
FCS	FirstCarbon Solutions
FEMA	Federal Emergency Management Agency
FGC	Fish and Game Code
FHSZ	Fire Hazard Severity Zone
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GPA	General Plan Amendment
GPCD	gallons per capita per day
GPD	gallons per day
HARP2	Hotspots Analysis and Reporting Program
HCP	Habitat Conservation Plan
HDR	High Density Residential
HQTA	High-quality Transit Area
HRA	Health Risk Assessment

HREC	Historical Recognized Environmental Condition
HVAC	heating, ventilation, and air conditioning
iDigBio	Integrated Digitized Biocollections
in/sec	inch per second
IPaC	Information for Planning and Consultation
IS/MND	Initial Study/Mitigated Negative Declaration
kWh	kilowatt hours
LAFCo	Local Agency Formation Commission
lbs	pounds
L_{dn}	day/night sound level
L_{eq}	equivalent continuous sound level
LID	low impact development
L_{max}	maximum instantaneous noise level
LOS	Level of Service
LST	localized significance threshold
MBTA	Migratory Bird Treaty Act
MEIR	maximally exposed individual receptor
MEIW	Maximally Exposed Individual Worker
MEP	Maximum Extent Practicable
MLD	Most Likely Descendant
MM	Mitigation Measure
MNWD	Moulton Niguel Water District
mph	miles per hour
MS4	Municipal Separate Storm Sewer System
MT CO_2e	metric tons carbon dioxide equivalent
MWD	Metropolitan Water District
MWDOC	Municipal Water District of Orange County
MWS	modular wetland systems
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NFHL	National Flood Hazard Layer
NHM	Natural History Museum of Los Angeles County
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

OCFA	Orange County Fire Authority
OCSD	Orange County Sheriff's Department
OCTA	Orange County Transportation Authority
OEHHA	California Office of Environmental Health Hazard Assessment
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PPV	peak particle velocity
PRC	California Public Resources Code
PRIMP	Paleontological Resources Impact Mitigation Program
PV	photovoltaic
PWQMP	Preliminary Water Quality Management Plan
RCP	reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RHNA	Regional Housing Needs Assessment
RWQCB	Regional Water Quality Control Board
SA Geo	SA Geotechnical, Inc.
SB	Senate Bill
SCAG	Southern California Association of Governments
SoCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCCIC	South Central Coastal Information Center
SEMS	Standardized Emergency Management System
SLF	Sacred Lands File
SoCalGas	Southern California Gas Company
SOCWA	South Orange County Wastewater Authority
SO_2	sulfur dioxide
SO_x	sulfur oxides
SRA	State Responsibility Area
SRRE	Source Reduction and Recycling Element
State Water Board	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology
SWIS	Solid Waste Information System
SWMP	Storm Water Management Plan
SWP	State Water Project

SWPPP	Storm Water Pollution Prevention Plan
TCR	Tribal Cultural Resources
The Nat	San Diego Natural History Museum
TAC	toxic air contaminants
TK	Transitional Kindergarten
TPA	Transit Priority Area
TTM	Tentative Tract Map
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle Miles Traveled
VOC	volatile organic compounds
WEAP	Worker Environmental Awareness Program
WQMP	Water Quality Management Plan
WSS	Web Soil Survey

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1 - PROJECT DESCRIPTION

1.1 - Purpose

The purpose of this Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) is to identify any potential environmental impacts that would result from implementation of the 95 Argonaut Residential Project (proposed project) in the City of Aliso Viejo (City), in Orange County (County), California. Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15367, the City has discretionary authority over the proposed project and is the Lead Agency in the preparation of this Draft IS/MND and any additional environmental documentation required for the proposed project.

The remainder of this section provides a brief description of the project location and the primary project characteristics. Section 2 includes an environmental checklist that provides an overview of the potential impacts that may result from project implementation, elaborates on the information contained in the environmental checklist, and provides justification for each checklist response. Feasible mitigation measures are analyzed to reduce all impacts to below a level of significance. Section 3 contains the List of Preparers.

1.2 - Project Location

The project site is located at 95 Argonaut, in the City of Aliso Viejo, in Orange County, California (Exhibit 1). The approximately 2.83-acre project site consists of one parcel (Assessor's Parcel Number [APN] 623-091-01). As shown in Exhibit 1, the project site is in the northern portion of the City. Regional access to the project site is from Interstate 5 (I-5) via the El Toro Road exit and from State Route (SR) 73 via the Glenwood Drive exit.

1.3 - Environmental Setting

1.3.1 - Land Use Designation and Zoning

The project site is currently developed with an office building and a paved surface parking lot surrounding the building (Exhibit 2). The office building is approximately 24,879 square feet and 37 feet tall and is currently occupied by one tenant for general office uses. The project site is flat, and vehicular access is currently provided from a driveway along the southern boundary of the site.

The City of Aliso Viejo General Plan (General Plan) designates the project site as Business Park (Exhibit 3).[1] The proposed project applicant requests a General Plan Amendment (GPA) to change the General Plan land use designation from Business Park to High Density Residential (HDR). The

[1] City of Aliso Viejo. 2004. City of Aliso Viejo General Plan, Land Use Element, Land Use Policy Map, Figure LU-1. Website: http://avcity.org/DocumentCenter/View/397/Land-Use-Policy-Map-PDF. Accessed December 6, 2024.

HDR land use designation is intended to provide residential development with a density between 18 and 30 dwelling units per gross acre, with an average density of 20 units per gross acre.[2]

The project site is currently zoned Business Park-2 (Exhibit 4). The proposed project applicant requests a rezone to change the zoning designation from Business Park-2 to RH Residential–High Density District. The RH Residential–High Density zoning district is intended to provide for the development and preservation of high-density neighborhoods consisting of attached and multiple dwelling units such as townhomes, apartments, condominiums, and senior housing. The required minimum lot size is 5,000 square feet and the maximum density allowed is 30 dwelling units per gross acre.[3]

1.3.2 - Surrounding Land Uses

North Land designated Very High Density Residential, Glenwood Drive, single-family homes and townhomes

South Land designated Business Park, Argonaut, office buildings

East Land designated Community Facilities, Moulton Niguel Water District (MNWD) water storage facility

West Land designated Business Park, Argonaut, office buildings

1.4 - Proposed Project

MLC Holdings, LLC (applicant) proposes to demolish the existing approximately 48,000-square-foot 2-story office building, the existing parking lot, and landscaping and develop a new residential infill community consisting of a total of up to 61 3-story townhomes between eight buildings. The townhomes would range in size from approximately 1,210 to 1,765 square feet and would offer an array of two-, three-, and four-bedroom units (Exhibit 5). The townhomes would be a maximum height of 38 feet and would have a total building site area of 123,275 square feet.

The proposed project would include private roadways and parking, pedestrian walkways, landscaping, and a recreational amenity area. The proposed project's density would be 21.6 dwelling units per acre (du/acre), which would comply with the maximum density allowed by the HDR land use designation (30 du/acre). The proposed project would also include 5 percent deed restricted affordable homes (three very-low-income homes), and the applicant seeks certain concessions and waivers pursuant the State's Density Bonus Law, including reduced parking, reduced setbacks, and increased retaining wall heights.

[2] City of Aliso Viejo. 2004. City of Aliso Viejo General Plan, Land Use Element. Website: https://avcity.org/DocumentCenter/View/391/Land-Use-Element-PDF. Accessed December 6, 2024.

[3] City of Aliso Viejo. 2024. City of Aliso Viejo Municipal Code. Website: https://www.codepublishing.com/CA/AlisoViejo/#!/AlisoViejo15/AlisoViejo1510.html#15.10. Accessed December 6, 2024.

Townhomes would have a Spanish Eclectic architectural style which includes Spanish characteristics such as covered arched entry ways, window shutters, covered balconies and gable roof accents. These architectural details emulate the adjacent residential community to the north. Three different building types, a 6-plex, a 7-plex, and an 8-plex building, each include their own color scheme to create variety within the community. The color schemes include terracotta colored roof tiles, with trim accents of an earth tone palette such as browns, reds, and blues.

Parking and Circulation

Vehicles would access the project site via a proposed driveway at the south of the project site along Argonaut. An internal private roadway system would provide two-way access to each unit's parking garage as well as to guest parking spaces that would be distributed throughout the site. The proposed project has been designed such that emergency service providers would be able to access the site from any of the public streets or the drive aisles, with a minimum of 150 feet of hose pull to cover the entirety of each building. Pedestrians would circulate within the site via proposed internal pedestrian walkways and sidewalks.

Pursuant to the concessions being sought through the State Density Bonus Law, the proposed project has been designed to meet the Reduced Parking Ratios set forth in Municipal Code Section 15.38.120. The proposed project would have 155 on-site parking spaces, consisting of 122 spaces within garages (2 per unit) and 26 guest spaces. The proposed parking spaces would exceed the parking ratio requirement of 115.5 total parking spaces in accordance with the State Density Bonus Law.

Open Space and Landscaping

The Municipal Code requires open space equal to 25 percent of the total site area (30,819 square feet).[4] The proposed project would provide 40,259.9 square feet of open space area. The proposed project would be required to include a minimum 25 percent of the total site area of open space (30,819 square feet). The proposed project would exceed the required minimum amount of open space. The proposed project would include 5,587.4 square feet of usable open space and 34,672.5 square feet of other type of open space. Additionally, the proposed project design includes amenities such as decorative walkways, gathering spaces with electric barbeques, open lawn area for free-play, and a tot lot (Exhibit 6). The proposed project would include landscaping derived from the City's Landscape Plant Palette for low water plants.

Infrastructure and Utilities

Water service is currently provided by MNWD. The proposed project would connect to an existing 10-inch domestic water line within Argonaut and would extend one existing 8-inch line into the site through the internal drive aisles. An existing 6-inch domestic water line would be capped.

[4] The project site is 2.83 acres in size (123,274 square feet). Twenty-five percent of the total site is therefore 30,819 square feet.

Wastewater is collected via the MNWD's wastewater collection system and is sent to the Regional Treatment Plant operated by the South Orange County Wastewater Authority (SOCWA). The proposed project would include the installation of an 8-inch system within the project site that would connect to an existing 8-inch sewer line in Argonaut.

The proposed project would passively treat stormwater via an on-site underground modular wetland system (MWS). Stormwater would flow from the underground MWS through a proposed 18-inch private storm drain pipe to a proposed 18-inch public storm drain pipe before it enters the municipal storm drain within Argonaut.

Additionally, the proposed project would include a total of three new fire hydrants on the eastern, western, and southern portions of the project site and would connect to existing water lines.

Construction

The applicant anticipates that construction of the proposed project would begin in Quarter 1 of 2026, with the community opening for sales in Quarter 3 of 2027; construction is estimated to be completed at the end of Quarter 4 of 2027. It is anticipated that project construction would require 16,500 cubic yards (cy) of cut and 14,100 cy of fill, with 2,400 cy of export soil.

1.5 - Required Discretionary Approvals

As mentioned previously, the City of Aliso Viejo has discretionary authority over the proposed project and is the CEQA Lead Agency for the preparation of this Draft IS/MND. In order to implement the proposed project, the applicant would need to secure the following permits/approvals:

- **General Plan Amendment** to change the land use designation from Business Park to HDR (density of up to 30 du/acre).
- **Rezone** to change the zoning from Business Park-2 to RH Residential–High Density zone (density of up to 30 du/acre).
- **Waiver of local standards pursuant to State Density Bonus Law** to allow for reduced parking and concessions and waivers for setbacks and retaining wall height.
- **Tentative Tract Map (TTM)** for construction of up to 61 for-sale residential townhomes.
- **Site Development Permit** for building construction.

1.6 - Intended Uses of This Document

This Draft IS/MND has been prepared to determine the appropriate scope and level of detail required in completing the environmental analysis for the proposed project. This document will also serve as a basis for soliciting comments and input from members of the public and public agencies regarding the proposed project.

The Draft IS/MND will be circulated for a minimum of 20 days, during which comments concerning the analysis contained in the Draft IS/MND should be sent to:

So Kim, Community Development Director
City of Aliso Viejo Planning Services
12 Journey, Suite 100
Aliso Viejo, CA 92656
Phone: 949.497.2527
Email: SKim@avcity.org

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Source: Census 2000 Data,The California Spatial Information Library (CaSIL).

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5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

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Source: ESRI World Imagery. County of Orange.

FCS An ADEC Innovation

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map

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Source: ESRI World Imagery. City of Aliso Viejo.

FCS An ADEC Innovation

500 250 0 500 Feet

Exhibit 3
General Plan Land Use Map

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Source: ESRI World Imagery. City of Aliso Viejo.

FCS An ADEC Innovation

500 250 0 500 Feet

Exhibit 4
Zoning Map

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Summary

Site Area: 2.83 acres (123,275 SF)

Total Homes: 61
- (14) Plan 2531: 1,268 SF 2 Bed 2.5 Bath, Tandem Garage
- (6) Plan 2532: 1,210 SF 2 Bed 2 Bath, Standard Garage
- (21) Plan 1633: 1,496 SF 3 Bed 3 Bath, Tandem Garage
- (20) Plan 1638: 1,765 SF 4 Bed 4 Bath, Standard Garage

Net Density: 21.6 du/ac

	Development Standards Required	Proposed
Maximum Density	30 du/ac	21.6 du/ac
Maximum Structure Height	45'	38'
Minimum Building Site Area (SF)	5,000 SF	123,275 SF
Maximum Building Site Coverage	60%	41%
Minimum Common Open Space	25% (30,819 SF)	32.7% (40,259.9 SF) (See Note 13 below)
Minimum Perimeter Setback [7]	20'	7'
Parking [8]	Townhomes: 2 spaces/ unit = 122 Guest: .5 spaces/unit = 30.5 Total Parking = 152.5	Garage: 2 per unit = 122 Guest= 26 Street Parking = 7 Total= 155 (See Note 12 below)

Notes:
1. 95 Argonaut, Aliso Viejo, CA 92656
2. Assessor's Parcel Numbers: 623-091-01
3. Application Number: DRP-2024-00002
4. Type VB construction with NFPA 13D automatic sprinkler system
5. Existing Zoning: Business Park 2
6. Proposed Zoning: Residential High Density
7. Existing General Plan: Business Park
8. Proposed General Plan: High Density Residential
9. 5% Affordable (3 Homes) at Very Low to be provided on site. Max wall heights & perimeter setbacks reduced per Density Bonus Law
10. SB330: Pending
11. CEQA: IS/MND
12. CA Density Bonus Law (Gov Code:Section 65915-65918)
13. Refer to Sheet L-8 for Conceptual Common Open Space Calculation

Source: Meritage Homes; MLC Holdings, Inc., April, 2025.

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Exhibit 5
Site Plan

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LEGEND

1. Project Entry with Enhanced Paving
2. Monument Signage with Specimen Tree and Flowering Shrub/Groundcover
3. Concrete Sidewalk
4. Parking Area
5. Park / Open Space (Refer to L-2)
   - Lawn
   - BBQ Grill
   - Overhead Shade Structure
   - Picnic Table and Chairs
   - Tot Lot
6. Accent Tree
7. Hedge Planting to Screen Utilities, AC Units, and Retaining Wall
8. Vine Planting to Screen Retaining Wall
9. Evergreen Shrub at Garage Planting Pocket
10. Mailbox Cluster
11. Transformer
12. Retaining Wall with Guardrail (Refer to L-3 and L-4)
13. Perimeter Fence (Refer to L-3 and L-4)
14. Existing Easement
15. Existing Tree to Remain with New Groundcover
16. Property Line
17. Sight Triangle*

Note:
* Planting within sight triangle shall be maintained under 30" in height.

Residential Common Open Area (Refer to L-8)
Common Open Area Provided: 40,259.9 sqft (32.7%)

Minimum Parking Lot Landscaping
Parking Space On-site: (26) Stalls total
Parking Space with 10 or more Stalls:
Parking Lot at Entry: 3,062 sqft, (18) Stalls.
Parking Lot Landscaping Area: 1,116 sqft (36.5%)

Source: C2 Collaborative; MLC Holdings, Inc., March 28, 2025.

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Exhibit 6
Landscape Plan

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2 - ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

Environmental Factors Potentially Affected					
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.					
☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
☒	Biological Resources	☒	Cultural Resources and Tribal Cultural Resources	☐	Energy
☒	Geology and Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology and Water Quality	☐	Land Use and Planning	☐	Mineral Resources
☐	Noise	☐	Population and Housing	☐	Public Services
☐	Recreation	☐	Transportation	☒	Mandatory Findings of Significance
☐	Utilities and Services Systems	☐	Wildfire		

Environmental Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measure based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: _____ Signed: _____

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.1 Aesthetics *Except as provided in Public Resources Code Section 21099, would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State Scenic Highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Evaluation

Setting

The General Plan Conservation/Open Space Element identifies the hillsides, ridgelines, canyons, and view corridors as the primary aesthetic resources in the City. Canyon views and scenic highways are examples of scenic qualities, as defined by the General Plan, benefiting the community. Architectural and landscaping design guidelines complement the natural setting, enhancing the City's unique visual character.[5] Public and private portions of the City bordering the Aliso and Woods Canyons are situated with highly valued viewsheds or scenic overlooks of the canyons. In addition, several City roadways have been designated by the County of Orange Master Plan of Scenic Highways as having scenic qualities worth preserving. These roadways are classified as Viewscape Corridors or

[5] City of Aliso Viejo. 2004. Alisa Viejo General Plan, Conservation/Open Space Element. Website: https://avcity.org/DocumentCenter/View/394/Conservation--Open-Space-Element-PDF. Accessed December 2, 2024.

Landscape Corridors.[6] Additional scenic amenities such as golf courses also provide visual relief from the built environment and are important visual amenities and landmarks.

The project site is relatively flat and is currently developed with a 2-story office building. Surrounding uses include other commercial uses and residential uses, as well as Glenwood Community Park to the north across Glenwood Drive. As such, the project site's existing visual character is a combination of urban and suburban uses. Views from the project site are primarily of surrounding infrastructure and landscaping, as well as surrounding roadways and parking lots. Distant views of hillsides to the east are visible from Glenwood Community Park and from Glenwood Drive but are not visible from the project site.

Existing sources of light and glare include streetlights and lighting on the interiors and exteriors of existing and surrounding buildings, limited amounts of lighting from the gazebo and pathway lights from Glenwood Community Park, as well as vehicle headlights and traffic signals. Landscaping along both sides of Glenwood Drive and Argonaut Drive, as well as the Glenwood Community Park and residential landscaping north of the project site, provide shielding from light and glare.

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No impact. The City does not designate any specific scenic vistas; however, it identifies hillsides, ridgelines, canyons, canyon views, and view corridors as the primary aesthetic resources in the City and states that the Aliso and Woods Canyons have viewsheds or scenic overlooks of the canyons. The project site is in northern portion of the City, 1.56 miles east of the hillside and canyon area. Because of the distance and intervening development and topography, the project site cannot be seen from the hillsides and canyon areas or from the Aliso Viejo Country Club.

General Plan Policy COS-4.1 aims to protect scenic landform features such as hillsides, ridgelines, canyons, and view corridors through designation of key areas as open space and use of other land use planning tools. Because of intervening development, there are no scenic views of the natural slopes from the project site or the surrounding area. Therefore, the proposed project would not impede or obscure any views and would not affect public views of any scenic vistas. Furthermore, no hillsides or ridgelines are visible from the project site and the proposed project does not have the potential to obstruct views of hillsides from Glenwood Community Park or Glenwood Drive. As such, the proposed project would not obstruct any publicly available views and no impact would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State Scenic Highway?

No impact. The nearest designated State Scenic Highway is SR-91, approximately 18.40 miles north of the project site. A portion of SR-1, approximately 5.15 miles southwest of the project site, is

[6] City of Aliso Viejo. 2004. Alisa Viejo General Plan, Conservation/Open Space Element. Website: https://avcity.org/DocumentCenter/View/394/Conservation--Open-Space-Element-PDF. Accessed December 2, 2024.

identified as being eligible for listing.[7] Because of the project site's distance from this section of SR-1 and from SR-91, as well as intervening development, the project site is not visible from SR-1 or SR-91.

General Plan Figure COS-1–Conservation/Open Space Policy Map shows the locations of viewscape corridors and landscape corridors. As shown on the map, no viewscape corridors or landscape corridors exist on or adjacent to the project site. The nearest landscape corridor is Aliso Creek Road, located 1,055 feet (0.2 mile) west of the project site. Because of intervening development, Aliso Creek Road is not visible from the project site.

The project site is developed with commercial business uses, and there are no scenic resources such as trees, rock outcroppings, or historic buildings on-site or near the project site. The nearest golf course is Aliso Viejo Country Club, located 0.15 mile north of the project site. The golf course is not visible from the project site due to intervening development. Additionally, no unique visual resources or historic structures are located on or near the project site. Therefore, no impact would occur to scenic or historic resources or a State Scenic Highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

No impact. The project site is located in an urbanized area and is currently developed with an existing office building and parking lot. As such, this discussion focuses on zoning and other regulations governing scenic quality. The General Plan and Zoning Ordinance define the permitted land uses and the corresponding development standards within the City. The project site currently has a General Plan Land Use Designation of Business Park. The proposed project would require a GPA to amend the land use designation from Business Park to HDR. The proposed project would be consistent with the HDR land use designation's maximum density of 30 du/acre.

The project site is currently zoned as Business Park-2. The proposed project would require a rezone to amend the zoning of Business Park-2 to RH Residential–High Density. The RH Residential–High Density Zone is intended to provide for the development and preservation of high-density neighborhoods consisting primarily of attached and multiple dwelling units such as townhomes, apartments, condominiums, and senior housing. Additionally, the RH Residential–High Density Zone allows for a maximum density of 30 units per gross acre.[8] In conjunction with the proposed General

[7] California Department of Transportation (Caltrans). 2024. State System Highway Map. Website: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed December 2, 2024.

[8] City of Aliso Viejo. 2024. City of Aliso Viejo Municipal Code. Website: https://www.codepublishing.com/CA/AlisoViejo/#!/AlisoViejo15/AlisoViejo1510.html#15.10. Accessed January 15, 2025.

Plan Amendment to HDR, pursuant to the RH Residential–High Density Zoning District the proposed project would be subject to the RH Residential–High Density Zoning development standards.

The proposed project would comply with all Aliso Viejo Municipal Code requirements related to scenic quality, such as Chapter 15.62, which sets out design standards for development within the City and subjects the proposed project to a development review process to ensure the project design is consistent with adopted design guidelines. Additionally, the proposed project would not conflict with any General Plan policies related to scenic quality, including General Plan Policy COS-4.1 and Policy COS-4.2, which protect scenic landforms such as hillsides, ridgelines, and canyons and encourage high-quality architectural and landscaping design. The proposed project would be located on a previously developed site and would not impact any scenic landforms. Additionally, the proposed project would include townhomes with a Spanish Eclectic architectural style, which would be subject to design review as required by Chapter 15.62 of the City's Municipal Code. As such, the proposed project would not conflict with applicable zoning and other regulations pertaining to scenic quality, and no impacts would occur.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than significant impact. The project site is currently developed and located in an urbanized area with existing light sources, which include streetlights and lighting on the interiors and exteriors of existing and surrounding buildings, as well as vehicle headlights and traffic signals. The existing building on-site contains sources of light and glare, including indoor and outdoor lighting, reflective surfaces, and headlights from vehicles in the parking lot.

The proposed project would generate lighting from two primary sources: lighting from the building interiors that would pass through windows and lighting from exterior sources (e.g., street lighting, parking area lighting, building illumination, security lighting, and landscape lighting). The proposed lighting would be typical of residential developments. The proposed development would replace current existing sources of light and glare with new high-quality development and lighting. The proposed project would include four types of lighting fixtures: streetlights, pedestrian lights, bollard lights, and downlights. The proposed project's lighting would be similar to existing residential development in the area and would not substantially increase sources of light as compared to the existing uses on the project site.

No nighttime construction is proposed, and construction activities would be subject to regulations set forth by the City's Building and Safety Department, which restricts construction activities to between the hours of 7:00 a.m. and 8:00 p.m.[9] Therefore, the proposed project would not require construction lighting, except security and safety lighting.

The City's Building and Safety Department would review any proposed lighting to ensure conformance with the California Building Standards Code (CBC), Title 24, as well as the California

[9] City of Aliso Viejo. 2024. Building & Safety. Website: https://avcity.org/154/Building-Safety. Accessed December 2, 2024.

Green Building Standards Code (CALGreen) (California Code of Regulations [CCR] Title 24, Part 11).. The photometric plan prepared for the proposed project demonstrates that project lighting would not result in light spillage outside of the project boundaries or impact sensitive uses. Although the proposed project would replace existing structures with new buildings that would introduce new light sources, the surrounding area is urban and already illuminated and the proposed lighting conditions would be similar to those currently used on the project site and surrounding the project site. The proposed project would also incorporate the Aliso Viejo Municipal Code, CBC, and CALGreen.

Sunlight or artificial light reflecting from finished surfaces such as window glass or other reflective materials can cause reflected light (glare). Buildings constructed of highly reflective materials from which the sun reflects at a low angle commonly cause adverse glare. The proposed project does not propose use of materials known to cause glare, such as mirrored/reflective glass. Furthermore, the proposed project's lighting would be similar to the existing residential uses in the area and would not substantially increase sources of light as compared to the existing uses on the site. Additionally, the proposed retaining wall and landscaping around the perimeter of the project site, combined with existing landscaping in the area, would help shield adjacent residential areas from sources of light and glare. Therefore, impacts would be less than significant.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.2 Agriculture and Forestry Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.* *Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Evaluation

Setting

The General Plan currently designates the project site Business Park (Exhibit 3). The proposed project requests a GPA to change the General Plan land use designation from Business Park to HDR. The HDR land use designation is intended for residential uses and does not include agricultural or forestry uses.

The project site is currently zoned Business Park-2 (Exhibit 4). The proposed project requests a rezone to change the zoning designation from Business Park-2 to RH Residential–High Density District. The RH Residential–High Density zoning district is intended to provide for residential uses and does not include agriculture or forestry uses.

The project site is mapped as Urban and Built-up Land by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP). Urban and Built-up Land is a nonagricultural land use designation.[10] The project site was historically used as agricultural land from at least 1938 until 1981. By 1989, a commercial office building was developed on the project site.[11]

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?

No impact. The project site is mapped as "Urban and Built-Up Land" by the California Department of Conservation FMMP, which is a nonagricultural land use designation. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on or near the project site. The nearest designated farmland is Prime Farmland and Unique Farmland located 2.64 miles north of the project site.[12] Additionally, the General Plan does not designate the site as agricultural or forest land, and the project site is not in active agricultural use. These conditions preclude the possibility of the conversion of farmland to nonagricultural use. No impacts would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

No impact. The proposed project requests a rezone to change the zoning designation from Business Park-2 to RH Residential–High Density District and is therefore not zoned for agricultural uses. The project site is currently developed with an office building and parking lot and does not support agricultural land use activities and, therefore, is not eligible for a Williamson Act Contract. This

[10] California Department of Conservation. 2025. California Important Farmland Finder. Website: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed January 15, 2025.

[11] Hillman Consulting LLC. 2024. Phase I Environmental Site Assessment (Phase I ESA). April.

[12] California Department of Conservation. 2025. California Important Farmland Finder. Website: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed January 15, 2025.

condition precludes the possibility of conflicts with agricultural zoning or Williamson Act Contracts. No impacts would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No impact. The proposed project requests a rezone to change the zoning designation from Business Park-2 to RH Residential–High Density District; both are non-forest zoning districts. This condition precludes the possibility of conflicts with forest zoning. No impacts would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. The project site is mapped as "Urban and Built-Up Land" by the California Department of Conservation FMMP. The project site is currently developed with an office building and parking lot and does not contain forestland, timberland, or timberland zoned Timberland Production as defined by California Public Resources Code Section 51104(g). This condition precludes the possibility of the conversion of forest land to non-forest use. No impacts would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use?

No impact. The project site and surrounding area are mapped as "Urban and Built-Up Land" by the California Department of Conservation FMMP. The project site is not located on or near land used for farmland or agriculture. This condition precludes the possibility of the proposed project creating pressures to convert farmland to nonagricultural use or forest land to non-forest use. No impacts would occur.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.3 Air Quality *Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors or) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental Evaluation

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Setting

The proposed project site is located in the City of Aliso Viejo, in Orange County, which is within the South Coast Air Basin (SoCAB). The SoCAB includes all of Orange County, Los Angeles County (except for the Antelope Valley), the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The San Gabriel, San Bernardino, and San Jacinto Mountains bound the SoCAB on the north and east, while the Pacific Ocean lies to the west of the SoCAB. The southern limit of the SoCAB is the San Diego County line. The SoCAB is under the jurisdiction of South Coast Air Quality Management District (SCAQMD).[13]

[13] South Coast Air Quality Management District (SCAQMD). 2022. Air Quality Management Plan. Website: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan. Accessed January 10, 2025.

The air pollutants for which national and State standards have been promulgated and that are most relevant to air quality planning and regulation in the SoCAB include ozone, nitrogen oxide (NO_X), carbon monoxide (CO), particulate matter, including dust, 10 micrometers or less in diameter (PM_{10}), and particulate matter, including dust, 2.5 micrometers or less in diameter ($PM_{2.5}$). In addition, toxic air contaminants (TACs) are of concern in the SoCAB. Each of these pollutants is briefly described below. Other pollutants that are regulated but not considered an issue in the project area are sulfur dioxide (SO_2), vinyl chloride, sulfates, hydrogen sulfide, and lead; the proposed project would not emit substantial quantities of those pollutants, so they are not discussed further in this section.

Construction and operation of the proposed project would be subject to applicable SCAQMD rules and requirements. The SCAQMD CEQA Air Quality Handbook was developed to assist local jurisdictions and lead agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact. A potentially significant impact would occur if the proposed project would conflict with or obstruct implementation of the applicable air quality plan. The SCAQMD is responsible for preparing air quality attainment plans to be transmitted to the California Air Resources Board (ARB) and the United States Environmental Protection Agency (EPA) for incorporation into the State Implementation Plan. SCAQMD has designated this area as extreme nonattainment for ozone and serious nonattainment for $PM_{2.5}$.[14] To evaluate whether a project conflicts with or obstructs implementation of the applicable air quality plan (2022 Air Quality Management Plan [AQMP] for SoCAB), the SCAQMD CEQA Air Quality Handbook states that there are two key indicators. These indicators are identified by the criteria discussed below.

- **Indicator:** Whether the proposed project will not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- **Indicator:** According to Chapter 12 of the SCAQMD CEQA Air Quality Handbook, the purpose of the General Plan consistency findings is to determine whether a proposed project is inconsistent with the growth assumptions incorporated into the air quality plan and, thus, whether it would interfere with the region's ability to comply with federal and California air quality standards.

The development of emission burdens used in AQMPs to demonstrate compliance with ambient air quality standards is based, in part, on land use patterns contained within local general plans. Therefore, it is reasonable to conclude that if a project is consistent with the applicable general plan

[14] South Coast Air Quality Management District (SCAQMD). 2022. Air Quality Management Plan. Website: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan. Accessed January 10, 2025.

land use designation, and the general plan was adopted prior to the applicable AQMP, then the growth of Vehicle Miles Traveled (VMT) and/or population generated by said project would be consistent with growth in VMT and population assumed within the AQMP. The General Plan and Zoning Ordinance defines the permitted land uses and the corresponding development standards within the City.

The proposed project includes a GPA to change the land use designation from Business Park to HDR (density of up to 30 du/acre) and rezone to change the zoning from Business Park-2 to RH Residential–High Density zone (density of up to 30 du/acre). Therefore, the 2022 AQMP would have analyzed a VMT and density different from the proposed project. However, as explained in Section 2.14, Population and Housing, the population growth resulting from the proposed project is consistent with SCAG's growth projections for the City and is considered planned growth. Furthermore, as explained in Section 2.17, Transportation, the City VMT Guidelines consider small projects that generate fewer than 110 net new daily vehicle trips to have a less than significant VMT impact. The proposed project would generate 79 net new daily trips. Therefore, the proposed project would have a less than significant VMT impact. The proposed project would not delay the timely attainment of air quality standards or 2022 AQMP emissions reductions due to an increase of density or VMT beyond what was evaluated in the 2022 AQMP.

Furthermore, considering the recommended criteria in the SCAQMD's 1993 Handbook, this analysis uses the following criteria to address this potential impact:

- **Criterion 1:** Proposed project's contribution to air quality violations; and
- **Criterion 2:** Compliance with applicable emission control measures in the AQMPs.

Criterion 1: Project's Contribution to Air Quality Violations

According to the SCAQMD, the proposed project is consistent with the AQMP if the proposed project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.[15]

If a project's emissions do not exceed the SCAQMD regional thresholds for volatile organic compounds (VOC), NO_X, CO, sulfur oxides (SO_X), PM_{10}, or $PM_{2.5}$, it follows that the project's emissions would not exceed the allowable limit for each project in order for the region to attain and maintain ambient air quality standards, which is the primary goal of air quality plans. As shown in Impact 2.3(b), the proposed project would not exceed the SCAQMD's regional thresholds of significance during either construction or operation. Therefore, the proposed project would be consistent with the AQMP under this criterion.

[15] South Coast Air Quality Management District (SCAQMD). 2022. Air Quality Management Plan. Website: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan. Accessed January 10, 2025.

Criterion 2: Control Measures

The AQMP contains several control measures which are enforceable requirements through the adoption of rules and regulations. The proposed project would comply with all applicable SCAQMD rules and regulations. Because of the nature of the proposed project, which includes earthmoving activity during construction, SCAQMD Rule 403 applies. Rule 403 requires that fugitive dust be controlled with Best Available Control Measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Compliance with this rule is achieved through the application of standard Best Management Practices (BMPs). These BMPs include application of water or chemical stabilizers to disturbed soils; covering haul vehicles; restricting vehicle speeds on unpaved roads to 15 miles per hour (mph); sweeping loose dirt from paved site access roadways; cessation of construction activity when winds exceed 25 mph; and establishing a permanent ground cover on finished sites. The proposed project would also be consistent with SCAQMD Rule 1113, which serves to limit the VOC content of architectural coatings used on projects in the SCAQMD. The proposed project's mandatory compliance with all applicable SCAQMD rules and regulations would result in consistency with the applicable AQMP control measures.

Summary

In summary, the proposed project would not result in a regional exceedance of criteria air pollutants and would comply with all applicable SCAQMD rules and regulations. As such, the proposed project would not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP. Furthermore, the proposed project would not interfere with the region's ability to comply with federal and California air quality standards. Therefore, this impact would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?

Less than significant impact. This impact is related to the cumulative effect of a project's criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants results from past and present development within the SoCAB, and this regional impact is a cumulative impact. Therefore, new development projects (such as the proposed project) within the SoCAB would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited but cumulatively considerable when evaluated in combination with past, present, and future development projects.

Potential regional impacts could result in exceedances of State or federal standards for NO_X, $PM_{10,}$ $PM_{2.5}$, or CO. NO_X emissions are of concern because of potential health impacts from exposure to NO_X emissions during both construction and operation and as a precursor in the formation of airborne

ozone. PM_{10} and $PM_{2.5}$ are of concern during construction because of the potential to emit exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion and resulting health effects.

VOC emissions are also important because of their participation in the formation of ground level ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors, such as the sick, elderly, and young children.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to CEQA Guidelines Section 15064(h)(4), the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that a project's incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the proposed project would result in regional emissions that exceed the SCAQMD regional thresholds of significance for construction and operations on a project level. Projects that generate emissions below the SCAQMD significance thresholds would be considered consistent with regional air quality planning efforts and would not generate cumulatively considerable emissions. The proposed project's regional construction and operational emissions are evaluated separately below. Construction and operational emissions from the proposed project were estimated using the California Emissions Estimator Model (CalEEMod) Version 2022.1. The complete CalEEMod output files are included as part of Appendix A.

Construction Emissions

Construction emissions are described as "short-term" or temporary in duration; however, they have the potential to represent a significant impact with respect to air quality. Construction of the proposed project would result in the temporary generation of VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions from construction activities such as demolition, site preparation, grading, building construction (home construction), architectural coating, and paving. Fugitive dust emissions are primarily associated with earth disturbance and grading activities and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on-site and off-site. Construction-related NO_X emissions are primarily generated by exhaust emissions from heavy-duty construction equipment, material and haul trucks, and construction worker vehicles. VOC emissions are mainly generated by exhaust emissions from construction vehicles, off-gas emissions associated with architectural coatings, and asphalt paving. For the purpose of this analysis, construction of the proposed project was estimated to begin in April 2026 and conclude in October 2027 and was modeled based on an applicant-provided preliminary schedule; see Appendix A. Note that construction emissions would likely decrease if the construction schedule were deferred to later years because of improvements in technology and more stringent regulatory requirements. The duration of

construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required by the CEQA Guidelines. The calculations of pollutant emissions from the construction equipment account for the type of equipment, horsepower and load factors of the equipment, and the duration of equipment use. Table 1 presents the proposed project's maximum daily construction emissions during the entire construction duration using the worst-case summer or winter daily construction-related criteria pollutant emissions for each phase of construction. The PM_{10} and $PM_{2.5}$ emissions reflect the combined exhaust and fugitive dust emissions after implementation of best available dust control measures outlined in SCAQMD Rule 403. Complete CalEEMod output files are included as part of Appendix A.

Table 1: Unmitigated Construction—Maximum Daily Regional Emissions by Year

Construction Year	Regional Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Maximum Daily from Project Construction (2026)	1.52	19.63	18.22	0.06	6.71	2.20
Maximum Daily from Project Construction (2027)	48.03	6.50	9.26	0.02	0.85	0.35
Maximum Daily Construction Emissions						
Maximum Daily Emissions	**48.03**	**19.63**	**18.22**	**0.06**	**6.71**	**2.20**
SCAQMD Significance Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound
The PM_{10} and $PM_{2.5}$ emissions reflect the combined exhaust and mitigated fugitive dust emissions in accordance with SCAQMD Rule 403.
Source of Emissions: Appendix A.

As shown above in Table 1, the proposed project's construction emissions would not exceed the applicable significance threshold for any of the pollutants. Therefore, the proposed project would have a less than significant impact related to regional air quality during project construction.

Operational Emissions

Long-term operational emissions would be generated, resulting from daily operations at the proposed townhomes. Operational emissions for residential land use development projects are typically

distinguished as mobile-, area-, and energy-source emissions. Mobile source emissions are those associated with automobiles that would travel to and from the project site. Assumptions used to estimate mobile source emissions that would be generated by the proposed project were consistent with those presented in the project-specific Trip Generation Memorandum. The proposed project would replace the existing commercial uses on-site, but for conservative purposes, the analysis does not account for the removal of the existing emissions, such as car trips, that would be replaced by the proposed project. Area-source emissions are those associated with landscape maintenance activities and periodic architectural coatings. The proposed project would be all electric and would not have any natural gas infrastructure. Therefore, there are no direct emissions related to building energy use for space or water heating. Table 2 presents the proposed project's estimated maximum daily operational emissions.

Table 2: Maximum Daily Operational Regional Pollutants

Operational Activity	Regional Pollutant Emissions (pounds per day)[1]					
	VOC	NO_X	CO	SO_X	PM_{10} (Total)	$PM_{2.5}$ (Total)
Area	3.8148	0.0331	3.4631	0.0002	0.0016	0.0012
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile (Automobiles)	1.2362	0.8657	10.1283	0.0267	2.5859	0.6670
Overall Maximum Daily[1]	**5.0510**	**0.8988**	**13.5915**	**0.0268**	**2.5875**	**0.6683**
SCAQMD Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds
[1] Emissions shown represent the maximum daily emissions for summer and winter seasons for each operational emission source and pollutant. Therefore, total daily operational emissions represent the maximum daily emissions that could occur.
Source of Table: Appendix A.

As shown in Table 2, the proposed project's regional daily operational emissions would not exceed any of the SCAQMD thresholds of significance. Therefore, the proposed project would have a less than significant impact related to regional air quality during project operation.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact. This impact evaluates the potential for the proposed project's construction and operational emissions to expose sensitive receptors to substantial pollutant concentration. Sensitive receptors are defined as those individuals who are sensitive to air pollution, including children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide [NO_2] and CO), commercial and/or industrial facilities would be considered sensitive receptors. To result in a less than significant impact, the following criteria must be true:

- Criterion 1: Localized significance threshold (LST) assessment: emissions and air quality impacts during project construction or operation must be below the applicable LSTs to screen out of needing to provide a more detailed air quality analysis. If the proposed project exceeds any applicable LST when the mass rate lookup tables are used as a screening analysis, then project-specific air quality modeling may be performed to determine significance.
- Criterion 2: A CO hotspot assessment must demonstrate that the proposed project would not result in the development of a CO hotspot that would result in an exceedance of the CO ambient air quality standards.
- Criterion 3: TAC analysis must demonstrate that TAC emissions from construction and operations of the proposed project would not result in significant health risk impacts to nearby sensitive receptors.

Criterion 1: Localized Significance Threshold Analysis—Criteria Pollutants

The localized construction and operational analyses use thresholds (i.e., LSTs) that represent maximum emissions for a project that would not cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard. If the proposed project's construction or operational emissions are under those thresholds, it follows that the proposed project would not cause or contribute to an exceedance of the standard and would not expose sensitive receptors to substantial pollutant concentrations.

Friant Ranch Case and Project Health Impacts

In the 5th District Court of Appeal case *Sierra Club v. County of Fresno (Friant Ranch, L.P.)* (also referred to as *Friant Ranch)* the Court found the project EIR deficient because it did not identify specific health-related effects resulting from the estimated amount of pollutants generated by the project. The ruling stated that the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The California Supreme Court held that when an EIR concluded that a project would have significant impacts to air quality, an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." In order to determine compliance with this case, the Court developed a multi-part test that includes the following:

1. The air quality discussion shall describe the specific health risks created from each criteria pollutant, including diesel particulate matter (DPM).

   This air quality analysis details the specific health risks created from each criteria pollutant above under Section 2.3, Air Quality, Environmental Setting, Air Pollutants. As such, this analysis meets the Part 1 of the *Friant Ranch* case test.

2. The analysis shall identify the magnitude of the health risks created from the project. On page 24 of the Ruling, it is stated that "[t]he Court of Appeal identified several ways in which the EIR could have framed the analysis so as to adequately inform the public and decision-makers of possible adverse health effects."

The *Friant Ranch* case found that an EIR's air quality analysis must meaningfully connect the identified air quality impacts to the human health consequences of those impacts or meaningfully explain why that analysis cannot be provided. As noted in the brief of *Amicus Curiae* by the SCAQMD *Friant Ranch* (Brief), [16] SCAQMD has air quality modeling and health impact evaluation capability among the most sophisticated of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes. The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the proposed project due to various factors. The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, the resulting maximum health risk value is only a calculation of risk; it does not necessarily mean anyone will contract cancer as a result of the project. Similarly, SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_X or VOC emissions from relatively small projects due to photochemistry and regional model limitations. The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful.

On the other hand, for extremely large regional projects (unlike the proposed project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources—as part of their rulemaking activity, specifically, 6,620 pounds per day of NO_X and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone. As shown above in Table 1, project-related construction activities

[16] South Coast Air Quality Management District (SCAQMD). 2015. Application of the South Coast Air Quality Management District for Leave to File Brief of *Amicus Curiae* in Support of Neither Party and *[Proposed]* Brief of *Amicus Curiae*. Website: https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf. Accessed March 2, 2025.

would generate a maximum of 48.03 pounds per day of VOC and 19.63 pounds per day of NO_X; and, as shown above in Table 2, operation of the proposed project is estimated to generate 5.05 pounds per day of VOC and 0.98 pounds per day NO_X. The proposed project would not generate emissions anywhere near levels that would reach 6,620 pounds per day of NO_X or 89,190 pounds per day of VOC emissions. Therefore, the proposed project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Notwithstanding, this analysis does evaluate the proposed project's localized impact to air quality for emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ by comparing the proposed project's on-site emissions to the SCAQMD's applicable LST thresholds. As evaluated in this analysis provided below, the proposed project would not result in emissions that exceeded the SCAQMD's LSTs during either the construction or operational period. Therefore, the proposed project would not be expected to exceed the most stringent applicable federal or State ambient air quality standards for emissions of NO_X, CO, PM_{10}, or $PM_{2.5}$.

Localized Construction Analysis

The LST Methodology only applies to on-site emissions and states that "off-site mobile emissions from the project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only on-site emissions were compared with the applicable LSTs.

Utilizing the earthmoving activity acreages and phase durations from CalEEMod (Section 5.6.1), the number of acres disturbed per day were 1.5 for site preparation and 1.0 for grading. As specified in SCAQMD's guidance, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, the appropriate thresholds were selected based on the maximum number of acres disturbed in a day. To ensure a conservative analysis, the proposed project emissions have been compared to the 1 acre per day LST.

Table 3 presents the proposed project's maximum daily on-site emissions compared with the applicable LSTs. The closest sensitive receptor is within approximately 50 meters. The LSTs for the project site were obtained from the LST Methodology for a 1-acre project site located in Source Receptor Area 20–Central Coastal Orange County, with sensitive receptors at a distance of 50 meters. As noted in Table 3, emission estimates account for implementation of SCAQMD Rule 403 (incorporated into the proposed project through SC AIR-1), and the construction vehicle trip lengths were adjusted to 0.5 mile to represent localized emissions.

Table 3: Construction Localized Significance Screening Analysis

Activity	On-site Emissions (pounds per day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily from Project Construction (2026)	14.1883	15.5950	5.0431	1.8778
Maximum Daily from Project Construction (2027)	5.8850	8.4082	0.2398	0.2144
Maximum Daily On-site Construction Emissions1	**14.1883**	**15.5950**	**5.0431**	**1.8778**

Activity	On-site Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction Localized Significance Threshold (Source Receptor Area 20, 1 acre disturbed, 50 meters)	**93**	**738**	**13**	**5**
Exceed Screening Threshold?	**No**	**No**	**No**	**No**

Notes:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less
$PM_{2.5}$ = particulate matter with an aerodynamic resistance diameter of 2.5 micrometers
SCAQMD = South Coast Air Quality Management District
[1] Assumes overlap of construction activities based on construction schedule shown in Appendix A.
The PM_{10} and $PM_{2.5}$ emissions reflect the combined exhaust and mitigated fugitive dust emissions in accordance with SCAQMD Rule.
Source of emissions: Appendix A.
Source of thresholds: South Coast Air Quality Management District (SCAQMD) Mass Rate Localized Significance Threshold (LST) Lookup Table for Source Receptor Area 20, 1 acre disturbed, within nearest sensitive receptor at a distance of 50 meters from the project site.

As shown in Table 3, the proposed project's maximum daily on-site emissions would not exceed any applicable SCAQMD LSTs. Therefore, localized construction impacts related to these air pollutants would be less than significant.

Localized Operational Analysis

Similar to the construction LST analysis above, the applicable operational LSTs were obtained for a project located in Source Receptor Area 20 with the nearest sensitive receptor being at a distance of 50 meters. SCAQMD provides LST thresholds for projects equal to 1 acre, 2 acres, or 5 acres in size. For the project site of 2.83 acres, the lower, more conservative threshold for a 2-acre site is used.

As described above, the LST Methodology recommends that only on-site emissions are evaluated using LSTs. Because most of the proposed project's mobile source emissions would occur on the local and regional roadway network away from the project site, a trip length of 0.5 mile was used in the modeling input assumptions to account for on-site emissions and from mobile sources. The 0.5-mile on-site trip length is a conservative estimate that takes into account the maximum project site distance a vehicle could travel, not the most likely or fastest route, to ensure all potential impacts are considered. On-site area-, energy-, and mobile source emissions were included in this analysis. Table 4 presents the proposed project's maximum daily on-site emissions compared with the appropriate LSTs.

Table 4: Operational Localized Screening Significance Analysis

Emissions Source	Pounds per Day			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	0.0331	3.4631	0.0016	0.0012
Energy	0.0000	0.0000	0.0000	0.0000
Mobile (Automobiles)	0.2891	2.5408	0.1479	0.0392
Maximum Daily On-site Operational Emissions	**0.3221**	**6.3233**	**0.1496**	**0.0404**
Localized Significance Thresholds (Source Receptor Area 20, 2-acre site, 50 meters)	**128**	**1,089**	**6**	**2**
Exceeds Screening Threshold?	**No**	**No**	**No**	**No**

Notes:
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
The highest daily emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ were in the summer season.
Source of Emissions: Appendix A.
Source of thresholds: SCAQMD Mass Rate Lookup Tables for a 2-acre site in Source Receptor Area 20 for sensitive receptors located within 50 meters of the project site.

As shown in Table 4, the proposed project's maximum daily on-site operational emissions would not exceed any applicable SCAQMD LSTs. Therefore, the proposed project's operational activities would not cause or contribute substantially to an existing or future ambient air quality standard violation. Accordingly, the proposed project's operational criteria air pollutant and ozone precursor concentrations would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant.

Criterion 2: Carbon Monoxide Hotspot Analysis

A CO hotspot represents a condition wherein high concentrations of CO may be produced by motor vehicles accessing a congested traffic intersection under heavy traffic volume conditions. It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Accordingly, vehicle emissions standards have become increasingly more stringent to help remedy this impact. The CO hotspot analysis contained in the SCAQMD 1992 CO Plan is used to determine potential CO hotspot impacts from the proposed project, because by using the 1992 CO Plan as a worst-case scenario, the proposed project can measure CO impacts against intersections that experienced significantly more vehicle traffic than those adjacent to the proposed project. The 1992 CO Plan is used as a worst-case scenario because it included a CO hot spot analysis for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and

Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. Subsequently, the CO Plan determined that no CO hotspot would occur even with 100,000 vehicles per day at this one intersection.

According to the transportation analysis prepared by Urban Crossroads, the proposed project would only generate 25 AM peak-hour trips and 32 PM peak-hour trips under the 61-unit scenario. Therefore, the proposed project would not result in traffic volumes exceeding 100,000 vehicles per day at any of the intersections evaluated near the project site. As a result, none of the intersections near the proposed project site would have peak-hour traffic volumes exceeding those at the intersections analyzed in the 1992 CO Plan. Additionally, the adjacent roadways are not located in an area where vertical or horizontal atmospheric mixing is substantially limited, such as a tunnel or overpass. Furthermore, there are no factors unique to the local meteorology to conclude that this intersection would yield higher CO concentrations if modeled in detail. Therefore, the operational CO impact would be less than significant.

Criterion 3: Project-specific Toxic Air Pollutants

An assessment was made of the potential health impacts on surrounding sensitive receptors resulting from TAC emissions during construction. The SCAQMD has defined health risk significance thresholds. These thresholds are represented as a cancer risk to the public and a non-cancer hazard from exposures to TACs. Cancer risk represents the probability (in terms of risk per million individuals) that an individual would contract cancer resulting from exposure to TACs continuously over a period of several years. The principal TAC emission analyzed in this assessment was DPM from operation of off-road equipment and diesel-powered delivery and worker vehicles during construction. DPM has been identified by the ARB as a carcinogenic substance. For purposes of this analysis, DPM is represented as exhaust emissions of PM_{10}. The California Office of Environmental Health Hazard Assessment (OEHHA) has developed guidance for estimating cancer risks that considers the increased sensitivity of infants and adults to TAC emissions, different breathing rates, and time spent at home. This guidance was applied in estimating cancer risks from the construction and operation of the proposed project. To assess impacts to off-site sensitive receptors, the American Meteorological Society/EPA Regulatory Model (AERMOD) air dispersion model was used to estimate the concentrations from PM_{10} and $PM_{2.5}$ exhaust at nearby sensitive receptors within 1,000 feet of the project site. The Hotspots Analysis and Reporting Program (HARP2) software was used to identify the cancer risks associated with DPM generated during construction activities.

Toxic Air Contaminant Construction Analysis

Major sources of DPM during construction include off-road construction equipment and heavy-duty delivery truck activities. The results of the Health Risk Assessment (HRA) prepared for project construction for cancer risk and long-term chronic cancer risk are summarized below. Detailed parameters, a description of methodology, and complete calculations are contained in Appendix A.

The estimated health and hazard impacts at the Maximally Exposed Individual Resident (MEIR) and Maximally Exposed Individual Worker (MEIW) from the proposed project's construction emissions, prior to incorporation of mitigation, are provided in Table 5.

Table 5: Estimated Health Risks and Hazards During Project Construction

Source	Cancer Risk (risk per million)	Chronic Non-cancer HI
Maximally Exposed Individual Resident[1]	8.73	0.0078
Maximally Exposed Individual Worker[2]	1.02	0.0124
Significance Threshold	10	1
Exceeds Individual Source Threshold?	**No**	**No**

Notes:
HI = hazard index
1 The location of the construction MEIR was determined to be an existing single-family residence within approximately 141 feet north of the project boundary, at 33.5956629°N -117.723849"W.
2 The location of the construction MEIW was determined to be an existing office within approximately 100 feet southeast of the project boundary, at 33.594049°N, -117.723602"W.
Source: Appendix A.

As shown in Table 5, the proposed project's construction emissions would not exceed any risk significance threshold. Therefore, the proposed project would have a less than significant impact related to residential health risks and hazards during project construction.

Toxic Air Contaminant Operation Analysis

The proposed project is a residential project and would not have stationary sources or on-site sources of TACs during operation. Traffic generated by the residential project would consist of mostly light-duty gasoline-powered vehicles, which are not a significant source of TAC and air pollutant emissions. Thus, the proposed project would not generate a significant amount of DPM or other TAC emissions during operation and would not result in significant health impacts to nearby sensitive receptors during operation.

Cumulative Toxic Air Contaminant Analysis

As previously discussed, projects that exceed project-specific significance thresholds are considered cumulatively considerable by the SCAQMD. Conversely, projects that do not exceed project-specific thresholds are generally not considered cumulatively significant. As discussed in Criteria 1 through 3 above, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Since the proposed project would not exceed project-specific thresholds, it would not be considered to result in cumulatively significant impacts.

The Proposed Project as a Receptor

The proposed project would locate new sensitive receptors (residents) that could be subject to existing sources of TACs at the project site. However, as demonstrated above, the proposed project

would comply with all existing regulations and would not exacerbate environmental hazards or conditions that already exist. Accordingly, no further analysis is required. The California Supreme Court concluded in *California Building Industry Association v. BAAQMD* that CEQA generally does not require an analysis of the impact of existing environmental conditions on a project's future users or residents.

In summary, the proposed project would not expose sensitive receptors to substantial pollutant concentrations either during construction or operation. Impacts would be less than significant.

d) Result in other emission (such as those leading to odors) adversely affecting a substantial number of people?

Less than significant impact. Odors can cause a variety of responses. The impact of an odor is dependent on interacting factors such as frequency (how often), intensity (strength), duration (in time), offensiveness (unpleasantness), location, and sensory perception. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

The SCAQMD does not provide a suggested screening distance for a variety of odor-generating land uses and operations. However, the San Joaquin Valley Air Pollution Control District (Valley Air District) does have a screening distance for odor sources. These screening distances by type of odor generator are listed below in Table 6.

Table 6: Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Odor Generator	Screening Distance
Source: San Joaquin Valley Air Pollution Control District (Valley Air District). 2015. Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). March 19. Website: https://valleyair.org/transportation/GAMAQI.pdf. Accessed February 10, 2025.	

Construction-Related Odors

Potential sources that may emit odors during construction activities include exhaust from diesel construction equipment. However, because of the temporary nature of these emissions, the intermittent nature of construction activities, and the highly diffusive properties of DPM exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction. Odors from these sources would be localized and generally confined to the immediate area surrounding the proposed project site. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites for a residential subdivision. As such, the proposed project would not cause odors that adversely affect a substantial number of people during the construction period; potential impacts during construction would be less than significant.

Operational-related Odors

The proposed project includes the construction and development of a new residential infill community consisting of a total of up to 61 for-sale townhomes and associated amenities, landscaping, and paving. Operations of the proposed project could lead to odors from associated vehicle exhaust and outdoor cooking. However, such odors generated by project operation would be small in quantity and duration and would not pose an objectionable odor impact to nearby receptors. Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, composting facilities, feedlots, coffee roasters, asphalt batch plants, and rendering plants. The proposed residential project would not produce any offensive odor emitting end uses such as coffee roasting, composting, feed lots, refining, sewage treatment, or solid waste management and would not be considered an odor generator as identified in Table 6, and potential impacts during operation would be less than significant

Summary

The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people from construction or operations. Therefore, approval of the proposed project would not result in any significant effects relating to other emissions (such as odors), and impacts would be less than significant.

Applicable Existing Regulations

The proposed project would be required to demonstrate compliance with the following regulations.

SCAQMD 403 SCAQMD Rule 403 requires the implementation of best available dust control measures during activities capable of generating fugitive dust. The proposed project must follow the standard SCAQMD rules and requirements with regard to fugitive dust control, which include, but are not limited to the following:

1. All active construction areas shall be watered two times daily.
2. Speed on unpaved roads shall be reduced to less than 15 miles per hour (mph).
3. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.
4. Any on-site stockpiles of debris, dirt, or other dusty material shall be covered or watered twice daily.
5. All operations on any unpaved surface shall be suspended if winds exceed 15 mph.
6. Access points shall be washed or swept daily.
7. Construction sites shall be sandbagged for erosion control.
8. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
9. Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) Section 23114.
10. Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
11. Replace the ground cover of disturbed areas as quickly possible.

SCAQMD 1113 All interior and exterior architectural coatings used on-site during project construction must meet or exceed the VOC content limits established by SCAQMD Rule 1113.The project sponsor shall include in any construction contracts and/or subcontracts a requirement that all interior and exterior architectural coatings used in project construction meet the VOC content limits established by SCAQMD Rule 1113.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.4 Biological Resources *Would the project:*				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan?	☐	☐	☐	☒

Environmental Evaluation

The analysis in this section is based, in part, on a biological resources evaluation, which consisted of a field survey and desktop survey conducted by FirstCarbon Solutions (FCS). Desktop survey results are included in Appendix B.

Setting

Methods

The biological resources evaluation included a review of existing environmental documentation for the project site and vicinity, including literature pertaining to the habitat requirements of special-status species with the potential to occur in the project vicinity; and federal register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). FCS also reviewed topographic maps, aerial photographs, and published soil surveys and queried special-status species databases, including the USFWS Information for Planning and Consultation (IPaC) database,[17] the California Natural Diversity Database (CNDDB),[18] and the California Native Plant Society Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California.[19]

The biological resources evaluation included a field survey of the project site on January 2, 2025, to ascertain general site conditions and identify whether existing vegetation communities provide suitable habitat for special-status plant or wildlife species.

Results

An FCS Biologist conducted a general biological survey of the project site on January 2, 2025, between approximately 10:30 a.m. to 11:30 a.m. Weather conditions during the field survey were sunny, with an average temperature around 62–66°F (degrees Fahrenheit) and wind speeds between 0 and 2 mph.

Environmental Setting

The project site is developed and is surrounded by the MNWD water storage facility to the east, Glenwood Drive and residential development to the north, and Argonaut and commercial development to the west and south. The project site is mostly paved or covered by an office building and is flat, with minimal slopes increasing from south to north. Ornamental trees are located along the boundaries or adjacent to the site on all sides, including hedgerows of pine (*Pinus* spp.) trees along the eastern and northern boundaries.

[17] United States Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation (IPaC). Website: https://ecos.fws.gov/ipac/. Accessed November 27, 2024.

[18] California Department of Fish and Wildlife (CDFW). 2024. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed November 27, 2024.

[19] California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed November 27, 2024.

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

Less than significant impact with mitigation incorporated. The project site is developed and is mostly paved or covered by an office building and contains ornamental trees located along the site boundaries and near the building. According to the CNDDB and CNPSEI of Rare and Endangered Vascular Plants of California, 83 special-status plant species have been recorded within 10 miles of the project site or within the *San Juan Capistrano, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map and the eight surrounding quadrangle search area that encompasses the project site (Appendix B). The potential for occurrence of a species was based on presence of suitable habitats, soil types and recency, proximity, and number of occurrences recorded in the CNPSEI and CNDDB. Based on the surface disturbances occurring throughout the project site, as well as its situation as developed land in an urbanized area, the likelihood for the potential for persistence and occurrence of populations of many special-status plant species is lowered. Because of the urban/developed nature of the project site and lack of suitable habitat, all special-status plants that occur in the region were assessed as having no potential for occurrence (Appendix B, Table 1). Thus, special-status plants are not expected to occur on the project site.

Sixty special-status wildlife species were identified as occurring within 10 miles of the project site as recorded in the CNDDB or as identified in the USFWS IPaC database. Because of the urbanized/developed nature of the project site and vicinity, all special-status wildlife species identified in the database reviews were determined to have no or low potential for occurrence on the project site. However, the project site contains trees that could provide marginally suitable nesting habitat for Cooper's hawk, a California Species of Special Concern. In addition to Cooper's hawk, trees within the project site may provide nesting habitat for various migratory and nesting birds acclimated to anthropogenic environments, which are protected under the Migratory Bird Treaty Act (MBTA). With the implementation of Mitigation Measure (MM) BIO-1a and MM BIO-1b, which require a pre-construction survey and avoidance of direct and indirect impacts on active nests, potential project-related impacts to protected bird nests (including Cooper's hawk) would be reduced to a less than significant level.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

No impact. No riparian or other sensitive natural communities were recorded on or adjacent to the project site; therefore, the proposed project would have no impact on any riparian habitat or other sensitive natural community.

c) Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. There were no waters or wetland features detected on the project site that would be considered potentially jurisdictional by the United States Army Corps of Engineers (USACE), nor any features that would be considered potentially jurisdictional by State regulatory agencies including the San Diego Regional Water Quality Control Board (San Diego RWQCB) and CDFW. Additionally, the project site does not contain vernal pools or features indicative of the historic presence of vernal pools. According to the National Resources Conservation Service (NRCS) Web Soil Survey (WSS),[20] two soil types are mapped on the project site, Calleguas clay loam and Capistrano sandy loam. While Calleguas soils are known to support vernal pools, there would be no potential for vernal pools to occur due to the developed nature of the site. Therefore, implementation of the proposed project would not result in impacts to State or federally protected wetlands, including vernal pools. No impacts would occur.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Less than significant impact with mitigation incorporated. The project site is developed and is surrounded by urbanized areas and roads on all sides that limit wildlife movement through the project site. The project site itself does not serve as a wildlife movement corridor.

The project site contains vegetation, including trees within the site and along the boundaries, that could provide suitable nesting habitat for bird species protected under the MBTA and the Fish and Game Code. These species include Cooper's hawk and other avian species. Only avian species adapted to urbanized areas may use the trees on-site for nesting.

A total of 77 trees would be removed and replaced at a 1:1 ratio. Nearly all trees removed by the project would be replaced with trees that would function in a similar capacity for nesting. The proposed trees would include native species, as well as climate-adaptive and drought-tolerant species. If ground-disturbing or vegetation-removing construction activities are initiated during the nesting season, they could disturb nesting and breeding birds on the ground surface, in trees and shrubs, and on structures on and adjacent to the project site, which would be considered a significant impact. Potential construction-related project impacts on special-status and migratory birds include destruction of eggs or occupied nests, mortality of young, and parental abandonment of nests with eggs or pre-fledged young birds. With the implementation of MM BIO-1a and MM BIO-1b, potential project impacts to nesting Cooper's hawk and other native and migratory birds would be reduced to a less than significant level.

[20] United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2025. Web Soil Survey (WSS). Website: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed February 15, 2025.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. The General Plan for the City of Aliso Viejo contains the following two Ecological and Biological Resources policies for the Conservation/Open Space Element:

Policy COS-3.1 Support regional and sub-regional efforts to conserve ecological and biological resources.

Policy COS-3.2 Protect sensitive habitat areas and vegetation, particularly along Aliso Creek, within Aliso Woods, and within the Aliso and Wood Canyons Wilderness Park, by maintaining these resources as long-term open space.

The proposed project would not conflict with these policies. Therefore, there are no local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, with which the proposed project would conflict. No impact would occur.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

No impact. The project site is located within the boundaries of the County of Orange Natural Communities Conservation Plan (County of Orange NCCP) Habitat Conservation Plan (HCP), an HCP and NCCP authorized by the CDFW through the NCCP Act (California Fish and Game Code [FGC] § 2800) and Sections 2081 and 2084 of the California Endangered Species Act (CESA) and by the USFWS through Sections 7 and 10 of the Endangered Species Act.

The project site does not contain Covered Habitats or suitable habitat for Identified Species covered under the County of Orange NCCP HCP. Therefore, the proposed project would not conflict with an HCP, NCCP, or other approved local, regional, or State HCP. No impact would occur.

Mitigation Measures

MM BIO-1a Nesting Bird Pre-construction Surveys

If ground-disturbing or vegetation-removing construction activities or tree removal is proposed during the breeding/nesting season for migratory birds (February 1 through September 15), a qualified Biologist shall conduct pre-construction surveys for special-status birds and other migratory birds within the construction area, including a 300-foot survey buffer (where accessible), no more than 3 days prior to the start of ground-disturbing activities in the construction area.

MM BIO-1b Avoidance of Active Avian Nests

If an active nest (i.e., occupied by eggs or fledglings) is located during pre-construction surveys or at any point during the construction phase of the proposed project, the City of Aliso Viejo shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until the eggs or fledglings no longer are in the nest or a qualified Biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and a 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.5 Cultural Resources *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource as pursuant to Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Environmental Evaluation

Setting

This section describes the existing cultural setting and potential effects from project implementation on the project site and its surrounding area. The following discussion is based on a records search at the South Central Coastal Information Center (SCCIC), the Native American Heritage Commission (NAHC), and a cultural resources pedestrian survey conducted by FCS. The non-confidential SCCIC records search, pedestrian survey photographs, and NAHC correspondence are included in Appendix C.

South Central Coastal Information Center

On May 30, 2024, a record search/literature review was conducted at the SCCIC located at California State University, Fullerton. The purpose of this review was to access any existing cultural resources survey reports, archaeological site records, and historic maps to evaluate whether previously documented pre-contact or historic archaeological sites, architectural resources, cultural landscapes, or Tribal Cultural Resources (TCRs) exist within or near the project site. The record search/literature review was also conducted to evaluate whether the project site contains any historic properties listed on or determined eligible for listing on the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), the California Historic Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, and the Built Environment Resource Directory (BERD) for Orange County. The results of the SCCIC records search indicate that 10 pre-contact cultural resources have been recorded within the 0.5-mile search radius, one of which (P-30-000414) is within the project boundaries. In addition, there are 16 area-specific survey reports on file with the SCCIC, two of which (OR-00255 and OR-00702) partially address the project site and three of which (OR-

00254, OR-00431, and OR-00705) address the project site entirely, indicating that the project site has been previously surveyed for cultural resources and produced positive results for cultural resources.

Native American Heritage Commission

On May 15, 2024, a records search request was sent to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File (SLF) for the project site. On June 5, 2024, a response from the NAHC was received indicating that their SLF search came back positive for TCRs within the project site. The NAHC included a list of 23 Tribal representatives who may have additional knowledge of the project site. To ensure that all Native American knowledge and concerns over potential TCRs that may be affected by implementation of the proposed project are addressed, FCS sent letters to all 23 Tribal representatives on November 26, 2024. Two responses were received. The first response was received on November 26, 2024; the Gabrieleño Band of Mission Indians–Kizh Nation requested Lead Agency contact information. The second response was received on January 8, 2025, from the Juaneño Band of Mission Indians, Acjachemen Nation, stating that the proposed project is a sensitive area that is located in the Tribe's territory with known burial sites near the project site. The Tribe expressed a request to consult on the proposed project as it moves forward. The Tribe also requested additional information pertaining to the expected extent of ground disturbance, as well as SCCIC record search results. No additional responses have been received to date.

Cultural Resources Pedestrian Survey and Buried Site Potential

On June 6, 2024, an FCS Archaeologist conducted a pedestrian survey for unrecorded cultural resources within the project site. The entirety of the project site is hardscaped. The perimeter of the project site is enclosed by a parking lot dedicated to the business center (constructed between 1988 and 1992) located at the center of the project site. Overview shots of the project site were taken from the northeast, northwest, southeast, and southwest corners that showcase the structure and the surrounding parking lot. Visibility of the exposed soil was non-existent since the entirety of the site is hardscaped; thus, inspection of the soil for cultural resources was not possible. Survey conditions were documented using digital photographs and field notes. No pre-contact or historic resources were found during the pedestrian survey.

In addition to the pedestrian survey, the potential for yet-identified cultural resources in the project vicinity was reviewed against geologic and topographic geographic information system data for the general area and information from other nearby projects. The proposed project was evaluated against a set of criteria originally identified by a geoarchaeological overview that was prepared for the California Department of Transportation (Caltrans) Districts 6 and 9.[21] This study mapped the "archaeological sensitivity," or potential to support the presence of buried pre-contact archaeological deposits, based on geology and environmental parameters including distance to water and landform slope. The methodology used in the study is applicable to other parts of California, such as the Bay Area, and generally concluded that sites consisting of flat, Holocene-era deposits in close proximity to

[21] Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal. 2010. Volume I: A Geoarchaeological Overview and Assessment of Caltrans District 6 and 9, Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways. Submitted to Central California Department of Transportation, District 6.

natural water resources had a moderate to high probability of containing subsurface archaeological deposits when compared to earlier Pleistocene deposits situated on slopes or further away from drainages, lakes, and rivers.

According to the isotopic gravity map with geology of Santa Ana, Southern California,[22] the surface of the project site rests entirely on alluvial valley deposits (Holocene to late Pleistocene; Qya). Applying the criteria set forth in Meyer et al., all Holocene-era deposits have the potential to contain archaeological deposits, which increases with the ease of the slope and proximity to water resources. The terrain of the project site is relatively flat, and the closest water source is Aliso Creek, located approximately 0.7 mile east of the project site. In addition, positive results from the NAHC SLF search for TCRs and the positive SCCIC results for cultural resources indicate a moderate to high potential for unanticipated buried cultural resources to be impacted by project construction.

Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as pursuant to Section 15064.5?

No impact. Historical resources in this context refer to the built environment, mainly buildings and structures over 45 years in age that may be eligible for inclusion on the CRHR or NRHP. Records search results conducted at the SCCIC did not identify any historical resources within the 0.5-mile search radius, nor within the proposed project boundaries. Additionally, the results of the pedestrian survey indicated that the project site consists of an enclosed parking lot and a business center building that was constructed between 1988 and 1992. As such, no historical resources were identified during the pedestrian field survey. Thus, the proposed project would not cause a substantial adverse change in the significance of any such known resources. No mitigation measures are required and there would be no impacts to historical resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant impact with mitigation incorporated. Results from the SCCIC indicate that 10 pre-contact archaeological resources are recorded within a 0.5-mile radius of the project site, of which one pre-contact resource is recorded within the project boundaries. There are no historic era archaeological resources located in or within a 0.5-mile radius of the project site. The results of the pedestrian survey failed to locate or identify any archaeological resources due to the lack of soil visibility across the project site. Given the results of the record searches, the potential to impact unidentified archaeological resources is considered moderate to high. It is possible that earthmoving activities associated with project construction could encounter previously undiscovered

[22] Langenheim, V.E., Tien-Chang Lee, Shawn Biehler, A.C. Jachens, and D.M. Morton. 2006. Isotopic gravity map with geology of the Santa Ana 30' x 60' quadrangle, southern California. United States Geological Survey. Map. Scale 1:100,000.

archaeological resources. Archaeological resources can include but are not limited to stone, bone, wood, or shell artifacts or features, including hearths and structural elements. Damage or destruction of these resources would be a potentially significant impact. MM CUL-1 would require a Worker Environmental Awareness Program (WEAP) training, a site survey conducted by a qualified Archaeologist, and archaeological monitoring. MM CUL-2 would require consultation with a qualified Archaeologist in the event that buried archaeological resources are discovered during construction, as well as inadvertent discovery procedures. Implementation MM CUL-1 and MM CUL-2 would ensure that potential impacts to archaeological resources will be reduced to a level of less than significant.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less than significant impact with mitigation incorporated. While no formal cemeteries or areas containing human remains are known to be in the project site's vicinity, the possibility always exists that construction-related ground disturbance may uncover previously undiscovered human remains. In the unlikely event such a discovery is made, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Section 5097.94 and Section 5097.98 must be followed. Additionally, implementation of MM CUL-3, which details inadvertent discovery procedures, would reduce potential impacts of previously undiscovered human remains to a less than significant level.

Mitigation Measures

MM CUL-1 Prior to the initiation of construction activities, all construction personnel conducting ground disturbance at the site shall be provided a Worker Environmental Awareness Program (WEAP) cultural resources "tailgate" training. The training shall include visual aids, a discussion of applicable laws and statutes relating to archaeological resources, types of resources that may be found within the project site, and procedures to be followed in the event such resources are encountered. The training shall be conducted by an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology.

An Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology shall conduct an updated survey of the site following demolition and exposure of native soils and prior to any project-related trenching or grading to check for the inadvertent exposure of cultural materials.

This shall be followed by archaeological monitoring during the grading and trenching phase of the proposed project. At the completion of these phases, archaeological monitoring shall be reduced to periodic "spot checks." In the event exposed soils indicate cultural materials may be present, this may be followed by regular or full-time archaeological monitoring as determined by the Archaeologist.

MM CUL-2 In the event that buried archaeological resources are discovered during construction, operations shall stop within a 100-foot radius of the find and an Archaeologist who meets the Secretary of Interior's Professional Qualification Standards for archaeology shall be consulted to determine whether the resource requires further study. The qualified Archaeologist shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during construction within the project area shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria. If the resources are determined to be unique historic resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. The Lead Agency, along with other relevant or Tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

MM CUL-3 In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 shall be followed. If during the course of project construction, there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the site where human remains are discovered and/or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine whether the remains are Native American and if an investigation of the cause of death is required. If the Coroner determines the remains to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the Most Likely Descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with

appropriate dignity, the human remains, and any associated grave goods as provided in Public Resource Code Section 5097.98.

2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD or on the project site in a location not subject to further subsurface disturbance:
   - The NAHC is unable to identify an MLD or the MLD failed to make a recommendation within 48 hours after being notified by the commission.
   - The descendant identified fails to make a recommendation.
   - The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.6 Energy *Would the project:*				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Environmental Evaluation

Setting

Energy use, especially through fossil fuel consumption and combustion, relates directly to environmental quality since it can adversely affect air quality and generate greenhouse gas (GHG) emissions that contribute to climate change. Electrical power is generated through a variety of sources, including fossil fuel combustion, hydropower, wind, solar, biofuels, and others. Natural gas is widely used to heat buildings, prepare food in restaurants and residences, and fuel vehicles, among other uses. Fuel use for transportation is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes such as auto, carpool, and public transit; and miles traveled by these modes and is generally based on petroleum-based fuels such as diesel and gasoline. Electric vehicles (EVs) may not have any direct emissions but do have indirect emissions via the source of electricity generated to power the vehicle. Construction and routine operation and maintenance of transportation infrastructure also consume energy. Southern California Edison (SCE) provides electricity and natural gas services within the City of Aliso Viejo. SCE provides electricity and natural gas as customers request their services.

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than significant impact. A discussion of the proposed project's anticipated energy usage is presented below. Energy use consumed by the proposed project was estimated and includes

electricity and fuel consumption for project construction and operation. Energy calculations are included as part of Appendix A.

Short-term Construction Impacts

For the purpose of this analysis, construction of the proposed project was estimated to begin in April 2026 and conclude in October 2027 and was modeled based on an applicant-provided preliminary schedule (see Appendix A). If the construction schedule moves to later years, construction emissions would likely decrease because of improvements in technology and more stringent regulatory requirements as older, less efficient equipment is replaced by newer and cleaner equipment. The proposed project would require demolition, site preparation, grading, building construction, architectural coating, and paving. The construction phase would require energy for the manufacture and transportation of building materials, preparation of the site (e.g., site clearing, and grading), and the actual construction of the buildings. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks.

The types of on-site equipment used during construction of the proposed project could include gasoline- and diesel-powered construction and transportation equipment, including trucks, front-end loaders, forklifts, and cranes. On-site, off-road construction equipment is estimated to consume a total of approximately 27,788 gallons of fuel over the entire construction duration (Appendix A).

Fuel use associated with construction vehicle trips generated by the proposed project was also estimated; trips include construction worker trips, haul truck trips for material transport, and vendor trips for construction material deliveries. Fuel use from these vehicles traveling to and from the project site was based on (1) the projected number of trips the proposed project would generate during construction, (2) average trip distances by trip type, and (3) fuel efficiencies estimated in the ARB Emissions Factors (EMFAC) model mobile source emission model. In total, the proposed project is estimated to generate approximately 347,132 VMT and a combined 20,449 gallons of gasoline and diesel for vehicle travel during construction.

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. Municipal Code Section 8.12.070 restricts noise sources associated with construction, repair, remodeling, or grading of any real property, provided the activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, 8:00 p.m. and 8:00 a.m. on Saturday, or at any time on Sunday or a federal holiday. As on-site construction activities would be restricted during these hours, it is anticipated that the use of construction lighting would be minimal.

The overall construction processes are already designed to be efficient in order to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully because of the added expense associated with renting the equipment, maintaining it, and fueling it. Therefore, the opportunities for future efficiency gains during construction are limited. Therefore, it is anticipated that the construction phase of the proposed project would not result in wasteful, inefficient, and unnecessary consumption of energy. Construction-related energy impacts would be less than significant.

Long-term Operational Impacts

The proposed project would consume energy as part of building operations and transportation activities. Operation of the proposed project would consume an estimated 478,814 kilowatt hours (kWh) of electricity. The proposed residential buildings would be built all-electric and the proposed project would install solar photovoltaic (PV) systems that would generate renewable energy, consistent with the 2022 Building Energy Efficiency Standards. The proposed project's buildings (including townhomes) would be designed and constructed in accordance with the City's latest adopted energy efficiency standards, which are based on the State's Building Energy Efficiency Standards. These are widely regarded as the most advanced Building Energy Efficiency Standards and compliance would ensure that building energy consumption would not be wasteful, inefficient, or unnecessary. As it relates to energy use from vehicular travel, the proposed project was estimated to generate approximately 412 daily vehicle trips for the 61-unit project. Project-related vehicle trips would consume an estimated 72,634 gallons of gasoline, diesel, natural gas, and electricity annually. Furthermore, the current office building generates energy usage and the proposed project's energy usage would be offset by energy usage under existing conditions. Thus, transportation fuel consumption would not be wasteful, inefficient, or unnecessary. Impacts would be less than significant.

b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less than significant impact. The proposed project would be evaluated with existing State energy standards and with energy conservation policies included in the General Plan. The proposed project would be served with electricity provided by SCE. In 2022, the latest year with available data, SCE obtained 33.2 percent of its electricity from renewable energy sources. SCE also offers a Green Rate 50 percent option that sources 66.7 percent of its power mix from eligible renewable energy sources and a Green Rate 100 percent option that sources 100 percent of its power mix from eligible renewable energy sources.[23] SCE would be required to meet the future objective of 60 percent of electricity from renewable energy sources by 2030. Additionally, the proposed project is planned to be an all-electric design and would therefore utilize more renewable energy sources during project operation compared to existing development.

The proposed residential project would be designed in accordance with Title 24, California's Energy Efficiency Standards for residential buildings. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC] and water heating systems), and indoor and outdoor lighting. CALGreen requires all new garages for the proposed homes to install electrical panels of adequate size to support the installation of EV charging systems. Therefore, it is anticipated the proposed project would be designed and built to minimize transportation energy through the promotion of the use of electric-powered vehicles and it is anticipated that existing and planned capacity and supplies of

[23] Southern California Edison (SCE). 2022 Power Content Label. Website: https://www.sce.com/sites/default/files/custom-files/PDF_Files/SCE_2022_Power_Content_Label_B%26W.pdf. Accessed February 10, 2025.

transportation fuels would be sufficient to support the proposed project's demand. The proposed project would install solar PV systems in compliance with Title 24, Part 6, California's Energy Code.

The General Plan Conservation/Open Space Element contains the following policies related to energy conservation.

Energy Supply and Conservation

Policy COS-6.1 Encourage green building designs for new construction and renovation projects within the City.

Policy COS-6.2 Coordinate with regional and local energy suppliers to ensure adequate supplies of energy to meet community needs, implement energy conservation and public education programs, and identify alternative energy sources where appropriate.

Policy COS-6.3 Encourage building orientations and landscaping that enhance natural lighting and sun exposure.

Policy COS-6.3 Encourage expansion of neighborhood-level products and services and public transit opportunities throughout the City to reduce automobile use.

While several of these policies are requirements at City level or voluntary, compliance with Title 24 standards and other applicable regulations would ensure that the proposed project would not conflict with any of the energy conservation policies related to the proposed project's building, mechanical systems, and indoor and outdoor lighting.

The proposed project would comply with existing State energy standards and with energy conservation policies contained in the General Plan. As such, the proposed project would not conflict with State or local renewable or energy efficiency objectives. Potential impacts would be less than significant.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.7 Geology and Soils *Would the project:*				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Evaluation

Setting

Geology and Soils

The analysis in this section is based, in part, on the Geotechnical Due Diligence Review prepared by SA Geotechnical, Inc. (SA GEO) on May 31, 2024, included in Appendix D of this document. The report concluded that the proposed grading and development is considered geotechnically feasible provided the recommendations in the report are implemented during design, grading, and construction.

Paleontological Resources

The analysis in this section is based, in part, on the Cultural Resources Due Diligence Memorandum prepared by FCS on July 3, 2024, which included paleontological records searches of the San Diego Natural History Museum (The Nat) online fossil locality database and the Natural History Museum of Los Angeles County (NHM) collections, which are available online through the Integrated Digitized Biocollections (iDigBio), and the University of California Museum of Paleontology (UCMP) online fossil locality database.

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones; fish, amphibians, reptiles, birds, mammals, etc.), invertebrates (animals without backbones; starfish, clams, coral, cephalopods, etc.), microscopic plants and animals (microfossils), and trace fossils/ichnofossils (i.e., footprints, burrows, etc.). Fossils are valuable, nonrenewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils are preserved in sedimentary rocks and, despite the abundance of these rocks and the vast numbers of organisms that have lived through time, preservation of plant or animal remains as fossils is a rare occurrence.

The Society of Vertebrate Paleontology (SVP) defines a significant fossil resource as, “identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic

information." Paleontological resources are considered older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).[24]

The sensitivity of an area with respect to paleontological resources hinges on its geologic setting and whether significant fossils have been discovered in the area or in similar geologic units.

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than significant impact. Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. Ground rupture is most likely to occur along active faults and typically occurs during earthquakes of magnitude 5.0 or higher. Ground rupture only affects the area immediately adjacent to a fault.

The project site is located in Southern California, which is a seismically active area. The type and magnitude of seismic hazards affecting the project site are dependent on the distance to the causative fault and the intensity and magnitude of the seismic event. The seismic hazards may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction and/or ground lurching.

Active faults are not known to exist within the project site, as discussed in the Geotechnical Due Diligence Review. According to the Geotechnical Due Diligence Review, the project site is not within a California State-designated earthquake fault zone, and the potential for primary ground rupture is considered very low. Furthermore, according to the most recent Alquist-Priolo Earthquake Fault Zone and Seismic Hazard Zone Map, a known earthquake fault is not located near the project site or known to traverse the project site.[25] Additionally, the General Plan Safety Element states that there are no known fault zones or seismic zones in the City.[26] Therefore, impacts related to rupture of a known earthquake fault would be less than significant.

[24] Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

[25] California Geologic Survey. 2024. Earthquake Zones of Required Investigation Map. Website: https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/?print_preview=true. Accessed December 3, 2024.

[26] City of Aliso Viejo. 2004. General Plan Safety Element. Website: https://www.avcity.org/DocumentCenter/View/395/Safety-Element-PDF. Accessed January 22, 2025.

ii) Strong seismic ground shaking?

Less than significant impact. The City, as well as most of Southern California, is located in a region of historic seismic activity. Strong levels of seismic ground shaking can cause damage to buildings. The intensity of ground shaking on the project site would depend upon the earthquake's magnitude, distance to the epicenter, and geology of the area between the project site and epicenter.

According to the Geotechnical Due Diligence Review, the closest active fault to the project site is the Newport-Inglewood Fault located 15.76 miles northwest and the San Joaquin Hills Fault.[27] During seismic events, the project site could experience moderate ground shaking associated with the faults described above. The maximum moment magnitude would be generated from the San Joaquin Hills Fault; however, other regionally active faults could produce ground shaking at the project site during an earthquake.[28]

Pursuant to Municipal Code Chapter 13.02, Building Regulations, the City has adopted the 2022 CBC and related codes. The proposed project would be required to comply with all applicable regulations in the 2022 CBC as amended by the Municipal Code, which includes design requirements to minimize the effects of seismic ground shaking. The proposed project would be subject to the current CBC, as adopted by the City's Planning and Building Department, with respect to seismic design parameters. Conformance with these standard engineering practices and design criteria would reduce the effects of seismic ground shaking.

The Geotechnical Due Diligence Review noted that the project site has the potential for strong seismic shaking during an earthquake event. Section 3 of the Geotechnical Due Diligence Review makes site-specific recommendations concerning earthwork, grading and fill, foundations, seismic design parameters, corrosivity, groundwater, and stormwater infiltration. The Geotechnical Due Diligence Review concluded that the proposed project would be feasible from a geotechnical standpoint provided that the preliminary recommendations are implemented during design, grading, and construction. Municipal Code Chapter 13.08.170, Soil engineering and engineering geology reports, requires implementation of the recommendations provided in the Geotechnical Due Diligence Review, including seismic design parameters. Compliance with Municipal Code Chapter 13.08.170 and the 2022 CBC would reduce potential impacts related to strong seismic ground shaking to a less than significant level.

Following compliance with standard engineering practices, the CBC, the Municipal Code, and the site-specific recommendations provided in the Geotechnical Due Diligence Review, potential impacts concerning exposure of people or structures to potential adverse effects involving strong seismic ground shaking would be less than significant.

[27] SA Geotechnical, Inc. 2024. Geotechnical Subsurface Exploration Due Diligence Study, and Preliminary Geotechnical Recommendations, Proposed Residential Development, 95 Argonaut, City of Aliso Viejo, California. May 31.

[28] Ibid.

iii) Seismic-related ground failure, including liquefaction?

No impact. Liquefaction is a phenomenon where earthquake-induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. When this occurs, the soil can completely lose its shear strength and enter a liquefied state. For liquefaction to occur, a project site must be subject to three factors: underlying loose, course-grained (sandy) soils, a groundwater depth of approximately 25 feet, and a potential for seismic shaking from nearby large-magnitude earthquakes.

The project site is not located in a Liquefaction Hazard Zone.[29] Additionally, the Geotechnical Due Diligence Review indicates that the project site is not located within a potential liquefaction zone as defined by the State's Seismic Hazard Mapping. The Geotechnical Due Diligence Review states that based on the absence of groundwater in the uppermost 50 feet, liquefaction potential is considered very low to nil. Furthermore, the General Plan indicates that the project site is not located within an area with liquefaction potential.[30] Therefore, the proposed project would not cause potential substantial adverse effects involving seismic-related ground failure, including liquefaction. There would be no impact.

iv) Landslides?

Less than significant impact. Landslides can occur if ground shaking and/or heavy rainfall disturb areas of steep slopes consisting of unstable soils. According to the General Plan, earthquake-induced landslides have the potential to occur within the City. Generally, these types of failures consist of rock falls, landslides, and debris flows. Areas having the potential for earthquake-induced landslides generally occur in areas of steep slopes consisting of unstable soils are disturbed by ground shaking and/or heavy rainfall.[31]

The project site is not mapped within an area with landslide potential by the General Plan. As shown in the General Plan Safety Policy Map, the nearest landslide zone is located adjacent to the project site's eastern property boundary.[32] However, as shown in the Geotechnical Due Diligence Review, the project site is not in an area mapped as having previous occurrences of earthquake-induced landslides or in an area where geological conditions indicate a potential for landslides. An approximately 20-foot-high descending slope is present along the eastern property boundary. Accordingly, the Geotechnical Due Diligence Review conducted a slope stability analysis. The Geotechnical Due Diligence Review determined that no significant modifications to the existing fill slope along the eastern property line are planned as part of the proposed project. The existing slope

[29] California Geologic Survey. 2024. Earthquake Zones of Required Investigation Map. Website: https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/?print_preview=true. Accessed December 3, 2024.

[30] City of Aliso Viejo. 2004. General Plan, Figure S-1 Safety Policy Map. Website: https://avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed December 3, 2024.

[31] City of Aliso Viejo. 2004. General Plan, Safety Element. Website: https://avcity.org/DocumentCenter/View/395/Safety-Element-PDF. Accessed December 3, 2024.

[32] City of Aliso Viejo. 2004. General Plan, Figure S-1 Safety Policy Map. Website: https://avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed December 3, 2024.

is composed of compacted artificial fill materials, and the proposed improvements are not anticipated to adversely impact the slope. Based on the slope stability analysis, the existing slope was found to be grossly stable. However, in general, slopes are considered susceptible to surficial instability in the form of erosion, raveling, and slumping. Municipal Code Chapter 13.08.170 requires implementation of the site-specific recommendations referenced in the Geotechnical Due Diligence Review related to slope stability and slope setbacks. These recommendations would be required as conditions of approval (COA GEO-1) in accordance with Municipal Code Chapter 13.08.170 and would ensure that on-site runoff is controlled and directed off-site in a nonerosive manner and that site drainage and slopes are maintained over the life of the project and would establish minimum setback criteria for descending slopes. Therefore, the proposed project would not result in significant impacts related to landslides. Impacts would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant impact. The Geotechnical Due Diligence Review indicates that the project site is underlain by sedimentary bedrock of the Monterey and Niguel Formations that is successively overlain by unconsolidated alluvium. The Geotechnical Due Diligence Review noted the presence of compacted artificial fill underlying the site as a result of original mass grading. Approximately 25 to 75 feet of artificial fill was encountered in all borings, which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard. The proposed project would be required to implement the site-specific recommendations referenced in the Geotechnical Due Diligence Review, which includes remedial grading consisting of removal of weathered/unsuitable artificial fill materials in their entirety.

During construction, the proposed project would be required to comply with erosion and siltation control measures outlined in Municipal Code Chapter 13.08, Grading and Excavation Code, which requires that excavations and fills that may affect drainage and watercourses be performed in accordance with good engineering practice, thereby reducing to a minimum the hazards and damage to public and private property. This would include measures such as using sandbags or straw bales as temporary erosion control.

Additionally, the proposed project would be subject to compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009DWQ, and all subsequent amendments) (Construction General Permit); see Impact 2.10(a). The Construction General Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring plan, which must include erosion and sediment control BMPs that would meet or exceed measures required by the Construction General Permit to control potential construction-related pollutants. Following compliance with the established regulatory framework, including Municipal Code Chapter 13.08 and Chapter 13.08.170 and the Construction General Permit, potential impacts concerning soil erosion and loss of topsoil would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than significant impact. As discussed in Impact 2.7(a), the project site would not be subject to significant impacts from seismically induced liquefaction or landslides.

Lateral spreading is a type of ground deformation that occurs when surface material extends or spreads on gentle slopes.[33] Ground shaking, especially when inducing liquefaction, may cause lateral spreading toward unsupported slopes.

Subsidence is a gradual settling or sudden sinking of Earth's surface that occurs when the withdrawal of groundwater, oil, or natural gas vertically displaces a large portion of land. Soils that are particularly subject to subsidence include those with high silt or clay content.

Sedimentary bedrock of the Monterey and Niguel Formations that is successively overlain by unconsolidated alluvium underlie the project site. The Geotechnical Due Diligence Review evaluated site conditions and identified the need for removal and recompaction of all weathered/unsuitable fill materials in order to provide competent subgrade and bearing conditions for the proposed structural slabs and foundations. Accordingly, the Geotechnical Due Diligence Study recommends disposal of the upper 3 to 4 feet of any unsuitable/disturbed artificial fill material. The removals for building pads should extend a minimum of 4 feet laterally, beyond the building footprint. Removals within the proposed drive areas may be limited to removal and recompaction of the upper 1 to 2 feet, below existing grades. Where deeper unsuitable material is encountered, the removals should be extended to the bottom of unsuitable materials to competent, unweathered/undisturbed artificial fill. Earthwork would be required to meet compaction standards and import soils must be approved by a Geotechnical Consultant.

Pursuant to Municipal Code Chapter 13.08.170, Soil engineering and engineering geology reports, the proposed project would incorporate all site-specific recommendations of the Geotechnical Due Diligence Study as COA GEO-1, which would address any identified potential soil and geologic hazards. Furthermore, the proposed project would be required to comply with all applicable regulations in the 2022 CBC as amended by the Municipal Code, which includes design requirements to mitigate the effects of potential soil and geologic hazards, including landslide, lateral spreading, subsidence, liquefaction, and seismic settlement. The City would review project design and construction plans for compliance with the CBC and the Municipal Code prior to construction activities. Thus, compliance with the City's established regulatory framework and standard engineering practices and design criteria, which would be verified through the City's plan review process, would ensure potential impacts associated with a geologic unit or soil that is unstable or would become unstable at the project site would be less than significant.

[33] United States Geological Survey (USGS). Lateral Spread. https://www.usgs.gov/media/images/lateral-spread. Accessed January 22, 2025.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than significant impact. The Geotechnical Due Diligence Study anticipated on-site soils to have a "High" expansion potential and would be subject to climatic and landscape moisture. As such, the recommendations provided in the Geotechnical Due Diligence Review include foundation design parameters such as remedial grading measures, post-tensioned slabs, and caisson design measures. Municipal Code Chapter 13.08.170 requires implementation of the recommendations provided in the Geotechnical Due Diligence Review. This requirement is incorporated into the proposed project as COA GEO-1. Additionally, the City's Building Division would review construction plans to verify compliance with standard engineering practices, the Aliso Viejo Municipal Code, and the CBC. Compliance with the Municipal Code and the City's established regulatory framework; standard engineering practices, which would be verified through the City's plan review process; and the CBC would ensure potential impacts related to expansive soil are less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No impact. Sewers are available for disposal of the proposed project's wastewater. The proposed project would connect to the existing sanitary sewer system for wastewater disposal and would not include the use of septic tanks. Therefore, no impacts would occur, and no mitigation is required.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than significant impact with mitigation incorporated. Geologic mapping indicates that the project site is underlain by sedimentary bedrock of the Monterey Formation that is successively overlain by fill. According to the Geotechnical Due Diligence Study subsurface exploration, the project site was mass graded in the 1980s, resulting in thick artificial fill materials 25 to 70 feet deep placed over bedrock. Undisturbed sediments of the Monterey and Niguel Formations were encountered at depth of 25 to 75 feet.

According to The Nat online fossil locality database and the NHM collections (which are available online through the iDigBio), there are no recorded fossil localities within the project site.[34,35] There are 23 recorded vertebrate fossil localities (4521, 5547, 5752, 6283, 6284, 6286, 6550, 6551, 7541, 7532, 7543, 7544, 7546, 7547, 7548, 7549, 7550, 7551, 7552, 7553, 7554, 7555 and 7755) approximately 1.09 miles northeast of the project site. Additional localities lie within 1 mile southwest of the site.

[34] Integrated Digitized Biocollections (iDigBio). 2024. Online records search tool. National Science Foundation. Website: https://www.idigbio.org/portal/search. Accessed on December 26, 2024.

[35] San Diego Natural History Museum (The Nat). 2024. Paleontology Collection Database Results, Pleistocene-age vertebrate localities in Aliso Viejo, CA.

To address the potential for an unanticipated discovery during construction, implementation of MM GEO-1 would be required. MM GEO-1 would require a worker training by a qualified Paleontologist, prior to the start of construction, to inform construction personnel of the potential to encounter fossils and procedures to follow in the event fossils are encountered during construction. Implementation of MM GEO-1 would reduce the potentially significant impact to less than significant. The impact would be less than significant with mitigation incorporated.

Condition of Approval

COA GEO-1 In accordance with Municipal Code 13.08.170, Soil Engineering and Engineering Geology Reports, a soil engineering and engineering geology report shall be required for grading projects unless otherwise waived by the building official. The reports shall include information appropriate for the site including any information required by the building official. Recommendations included in the reports and approved by the building official shall be incorporated in the grading plans or specifications.

Accordingly, prior to issuance of grading permit, the project applicant shall provide grading plans or specifications that include all recommendations from the proposed project's May 31, 2024, Geotechnical Subsurface Exploration Due Diligence Study prepared by SA Geotechnical, Inc., or from the latest geotechnical study for the proposed project.

Mitigation Measures

MM GEO-1 The project applicant shall enlist a qualified Paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) to prepare a Worker Environmental Awareness Program (WEAP) presentation for construction personnel. It will include information on paleontological resources, laws protecting them, types of fossils that could occur at the project site, and protocol for unanticipated discoveries. In the event that fossils are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify the qualified Paleontologist to examine the discovery. The qualified Paleontologist shall document the discovery as needed in accordance with SVP standards, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. Based on the significance of the find, the qualified Paleontologist shall determine procedures to be followed before construction is allowed to resume at the location of the find. If, in consultation with the qualified Paleontologist, it is determined that avoidance is not feasible, the qualified Paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) to outline salvage and recovery procedures. If deemed necessary by the qualified Paleontologist, the PRIMP shall include construction monitoring requirements as well. The PRIMP shall be submitted to the City for review and approval and the approved plan shall be implemented.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.8 Greenhouse Gas Emissions *Would the project:*				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Evaluation

Setting and Threshold of Significance

The project site is within the SoCAB, which is under the jurisdiction of the SCAQMD. In 2008, the SCAQMD formed a working group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the SoCAB. The working group developed several different options, which are contained in the SCAQMD Draft Guidance Document-Interim CEQA GHG Significance Threshold (Interim GHG Thresholds). The working group has not provided additional guidance since the release of the interim guidance in 2008. In 2010, the SCAQMD Tier 3 threshold was expanded to include non-industrial projects, as explained in the minutes from the most recent working group meeting.[36] The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by the Lead Agency in adopting its own threshold.

In summary, the SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap CO_2 concentrations at 450 parts per million (ppm) and stabilize global climate.

To determine whether the proposed project would have a significant impact with respect to the generation of GHG emissions, the appropriate tier for this project is Tier 3, which states that if GHG emissions are less than 3,000 metric tons (MT) carbon dioxide equivalent (CO_2e) per year, project-level and cumulative GHG emissions would be less than significant. However, this threshold was developed to meet the 2020 GHG emissions goals. To be consistent with State goals detailed in Senate Bill (SB) 32, Executive Order B-30-15, and Executive Order S-3-05 to reduce GHG emissions

[36] South Coast Air Quality Management District (SCAQMD). 2010. Greenhouse Gas CEQA Threshold Stakeholder Working Group Meeting No. 15. September 28.

by 40 percent below 1990 levels by 2030, a scaled screening GHG threshold can be developed for an assumed opening year of 2027. Though the SCAQMD has not published a quantified threshold beyond 2020, a threshold of 2,160 MT CO_2e per year would be appropriate.[37] Therefore, this analysis utilizes 2,160 MT CO_2e per year for a quantitative threshold of significance for GHG emissions and ARB's 2022 Scoping Plan for consistency with an applicable GHG emissions reduction plan.

A project's incremental contribution to a cumulative impact can be found not to be cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area of the project.

This analysis includes estimates of GHG emissions associated with project construction and operational activities using CalEEMod Version 2022.1. The model is considered by SCAQMD to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects in California. These estimates have been disclosed to comply with CEQA Guidelines Section 15064.4(a) and to provide evidence that the implementation of the plans, policies, and regulations adopted to reduce GHG emissions would result in actual GHG emissions reduction.

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant impact. Both construction and operational activities have the potential to generate GHG emissions. The following is a discussion of the proposed project's contribution to GHG emissions during both the construction and operation phases.

Construction Greenhouse Gas Emissions

The proposed project would generate GHG emissions during construction activities, resulting from emission sources such as construction equipment, haul trucks, and construction worker vehicles. Although these emissions would be temporary and short-term in nature, they could represent a substantial contribution of GHG emissions. Construction emissions were modeled using CalEEMod Version 2022.1. Table 7, below, shows the annual construction GHG emissions.

Table 7: Proposed Project Construction GHG Emissions

Construction Year	Total GHG Emissions (MT CO_2e per year)
Project Construction–2026	268
Project Construction–2027	192

[37] The 2,160 MT CO_2e per year threshold for opening year 2027 is calculated by reducing the 3,000 MT CO_2e per year threshold (developed to meet the 2020 GHG emissions goals) by 40 percent, then interpolating to obtain the scaled GHG emissions threshold for 2027. Based on a starting threshold of 3,000 MT CO_2e per year in 2020 a threshold of 1,800 MT CO_2e per year in 2030, the 3,000 MT CO_2e per year threshold would be reduced by 120 MT CO_2e per year through 2030.

Construction Year	Total GHG Emissions (MT CO_2e per year)
Total Construction Emissions	**460**
Emissions Amortized Over 30 Years[1]	**15**

Notes:
GHG = greenhouse gas
MT CO_2e = metric tons carbon dioxide equivalent
[1] Construction GHG emissions are amortized over the 30-year lifetime of the proposed project.
Source: Appendix A.

As shown above, the proposed project would generate approximately 460 MT CO_2e during construction. Over 30 years the construction GHG emissions would be amortized to approximately 15 metric tons carbon dioxide equivalent (MT CO_2e) per year. Since SCAQMD has not established a construction GHG threshold, total construction emissions were amortized over 30 years and included in the emissions inventory to account for the short-term, one-time GHG emissions from the construction phase of the proposed project.

Operational Greenhouse Gas Emissions

Operational, or long-term, emissions are those emissions that occur over the life of the project. Project operations were modeled for the 2027 operational year. To present a conservative estimate of emissions, the baseline for the analysis was assumed to be zero. Because the proposed project would demolish and replace an existing structure, the proposed project's incremental increase in GHG emissions would be lower than what was estimated and presented below. Sources for operational GHG emissions are summarized below.

Motor Vehicles: These emissions refer to GHG emissions contained in the exhaust from the cars and other on-road vehicles that would travel to and from the project site. Based on the project-specific trip generation rates presented in the Trip Generation Memorandum, the proposed project was estimated to generate 412 daily vehicle trips for the 61-unit project.[38] For the purpose of conservative analysis, the emissions in Table 8, below, do not take credit for the vehicle trips and associated emissions that would be replaced by the proposed project.

Natural Gas: These emissions refer to the GHG emissions that occur when natural gas is burned on the project site. The proposed project would be built all-electric and would, therefore, not result in any GHG emissions from natural gas use.

Indirect Electricity: These emissions refer to those generated by off-site power plants to supply electricity required for the proposed project. Although not included in the modeling and Table 8, below, the proposed project would install PV solar panels, consistent with Title 24, Part 6, California's Energy

[38] Urban Crossroads. February 12. Argonaut Residential Trip Generation Assessment. 2025.

Code. The inclusion of solar panels would provide on-site renewable energy that would reduce the proposed project's consumption of electricity generated at off-site power plants.

Area Sources: These emissions refer to those produced during activities such as landscape maintenance.

Water Transport: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.

Waste: These emissions refer to the GHG emissions produced by decomposing waste generated by the proposed project.

Table 8 presents the estimated annual GHG emissions from the proposed project's operational activities. As shown in Table 8, the proposed project would generate approximately 556 MT CO_2e per year after the inclusion of 15 MT CO_2e per year from project construction. In addition, with continued implementation of various Statewide measures, the proposed project's operational energy and mobile source emissions would continue to decline in the future.

Table 8: Operational Greenhouse Gas Emissions—Unmitigated

GHG Emissions Source	GHG Emissions (MT CO_2e per year)
Area	1
Energy	76
Mobile (Automobiles)	444
Waste	14
Water	6
Amortized Construction	15
Total Annual Project Emissions	**556**
Applicable Threshold[1]	**2,160**
Exceed Applicable Threshold	**No**

Notes:
MT CO_2e = metric tons carbon dioxide equivalent
[1] The 2,160 MT CO_2e per year threshold for opening year of 2027 is calculated by reducing the 3,000 MT CO_2e per year threshold (developed to meet the 2020 GHG emissions goals) by 40 percent, then interpolating to obtain the scaled GHG emissions threshold for 2027.
Source: Appendix A.

As shown in Table 8, the proposed project's GHG emissions would not exceed the applicable threshold of significance. In addition, the emissions shown in Table 8 were estimated without taking any reductions for the existing land uses. The proposed project would replace existing structures with new residential buildings. The existing uses are currently generating GHG emissions that would no

longer occur once the existing structures are demolished. Thus, the proposed project's net increase in GHG emissions would be even lower than what is shown in Table 8. In summary, construction and operational GHG emissions would result in a less than significant impact on the environment.

b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?2022 Scoping Plan Consistency

The 2022 Scoping Plan identifies additional GHG reduction actions and strategies necessary to achieve the AB 1279 target of 85 percent below 1990 levels by 2045. These actions and strategies build upon those identified in the first update to the Scoping Plan (2013) and in the second update to the Scoping Plan (2017). Although a number of these measures are currently established as Statewide regulations, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions will be adopted as required to achieve Statewide GHG emissions targets. Many of the measures are implemented at the State level and therefore not applicable to the proposed project. However, as it relates to local climate actions, Appendix D of the ARB 2022 Scoping Plan highlights three priority areas for local jurisdictions to focus on when reducing GHGs: (1) transportation electrification; (2) VMT reduction; and (3) building decarbonization. The proposed project would be consistent with and would further the goals of all three priority areas.

Regarding transportation electrification, the proposed project would provide EV charging infrastructure in accordance with the State CALGreen Code. Accordingly, each dwelling unit would be EV capable by installing a raceway to accommodate a future branch circuit for future electric vehicle supply equipment EVSE installation.[39] Therefore, the proposed project would be consistent with transportation electrification by having the infrastructure to accommodate the future residents' EV charging needs.

Regarding VMT reduction, according to the Argonaut Residential Vehicle Miles Traveled Screening Evaluated, prepared by Urban Crossroads in February 12, 2025, the City Guidelines state that local-serving uses such as day care centers, non-destination hotels, affordable housing, places of worship, municipal services, and other local essential services may be presumed to have a less than significant impact as local-serving in nature and would tend to shorten vehicle trips. The proposed project does not include any local-serving uses. However, the City Guidelines also consider small projects that generate fewer than 110 net new daily vehicle trips to have a less than significant VMT impact. The Argonaut Residential Trip Generation Assessment (Appendix I) estimates the proposed project to generate a net increase of 79 daily vehicle trips, which does not exceed the 110 daily vehicle trip threshold. Therefore, the proposed project would not have a significant VMT impact and would be consistent with VMT reduction goals.

[39] California Energy Codes and Standards. 2022. CALGreen Light-Duty Electric Vehicle Charging Infrastructure Requirements. Website: https://calgreeninfo.com/download/47/resource_file/fieldList/2022+CALGreen+EV+Light+Duty.pdf. Accessed February 10, 2025.

Regarding building decarbonization, the proposed project would have an all-electric design and would therefore comply with this goal. Furthermore, the proposed project complies with all relevant Energy Code and CALGreen requirements, which would ensure energy efficiency. Impact Section 2.6 a) demonstrates that the proposed project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the CEQA Guidelines.

The proposed project would be consistent with the appliable measures outlined in the 2022 Scoping Plan. Therefore, the proposed project would be consistent with the 2022 ARB Scoping Plan and potential impacts would be less than significant.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.9 Hazards and Hazardous Materials *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Environmental Evaluation

Setting

The analysis in this section is based, in part, on the Phase I Environmental Site Assessment (Phase I ESA) prepared by Hillmann Consulting LLC, on April 24, 2024. The Phase I ESA is included in Appendix E of this document.

No Recognized Environmental Conditions (RECs),[40] Historical Recognized Environmental Conditions (HRECs),[41] or Controlled Recognized Environmental Conditions (CRECs)[42] were identified on the project site. There were no significant data gaps identified. *De minimis* conditions are described below.[43]

The project site appears to have been developed as agricultural land from at least 1938 to 1981. Given the 43 years since any agricultural use as well as the grading activities of current development, any remaining pesticide contamination is unlikely and therefore this is not considered to be a REC in connection with the project site.

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than significant impact. Construction of the proposed project would include the routine transport, use, and disposal of limited quantities of hazardous materials necessary for construction, including fuel and solvents. The use of these hazardous materials would be typical of construction

[40] The term Recognized Environmental Condition (REC) is defined by American Society of Testing and Materials (ASTM) E1527-21 as "(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment."

[41] The term Historical Recognized Environmental Condition (HREC) is defined as a "previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations)." The ASTM E1527-21 standard has clarified that a historical recognized environmental condition is not a recognized environmental condition.

[42] The term Controlled Recognized Environmental Condition (CREC) is a type of recognized environmental condition and defined by ASTM E1527-21 as a "recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations)."

[43] The term *de minimis* condition is defined by the ASTM as, "…a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." A condition determined to be a *de minimis* condition is not an REC nor a CREC.

projects, would be short-term, and would be handled in accordance with standard construction practices, as well as with applicable federal, State, and local regulations. Standard construction practices would be observed such that hazardous materials are appropriately contained and remediated as needed, as required by local, State, and federal law. Regulatory requirements would include California Code of Regulations Title 22, Division 4.5, for appropriate management of hazardous materials, as well as the requirements of the EPA, Resource Conservation and Recovery Act (RCRA), California Department of Toxic Substance Control (DTSC), Division of Occupational Safety and Health (Cal/OSHA), Caltrans, and SCAQMD.

The proposed project would include residential development, which does not typically use or store large quantities of hazardous materials. During the operational phase of the proposed project, hazardous materials may be handled on the project site. Hazardous materials that would likely be used during operation would likely be limited to fertilizers, herbicides, pesticides, solvents, household cleaning agents, and similar materials used for maintenance and operation of the apartments, apartment building facilities, amenities, and landscaping. These types of materials are common and represent a low risk to people and the environment when used as intended. The proposed project would also be required to adhere to State and federal regulatory requirements as discussed above. Therefore, impacts associated with hazardous materials would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than significant impact. As discussed above, the Phase I ESA determined that the project site appears to have been developed as agricultural land from at least 1938 to 1981. However, the Phase I ESA determined that the previous agricultural use is not considered a REC. The Phase I ESA determined no RECs, HRECs, or CRECs were identified on the project site.

The Phase I ESA determined there is a potential that asbestos-containing materials (ACMs) are present in acoustical ceiling tiles, adhesives/mastics, and drywall. In the event ACM is detected, proper removal and disposal of the materials in compliance with regulatory requirements such as SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) would occur prior to any demolition activities.

As previously discussed above under Impact 2.9(a), the proposed project would be required to comply with all applicable local, State, and federal laws and regulations pertaining to the transport, use, disposal, handling, and storage of hazardous waste during the construction phase to reduce the likelihood and severity of accidents during transit. Proper handling of the use and disposal of hazardous materials associated with residential uses would reduce the potential for exposure.

Operation of the proposed project would not involve the transport, use, or disposal of large quantities of hazardous materials. The use of hazardous materials on the project site post-construction would consist of those commonly used in a residential setting for routine maintenance and cleaning and would not be of a significant quantity to create a reasonably foreseeable upset or accident. As such,

the proposed project would not introduce uses to the site that would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The proposed project would be required to comply with additional regulatory requirements including, but not limited to, the Code of Federal Regulations, Title 49, Transportation, specific to the transport of hazardous materials; California Code of Regulations Titles 8, 22, and Title 26, and their enabling legislation set forth in California Health and Safety Code Division 20, Chapter 6.95, Hazardous Materials Release Response Plans and Inventory; and the requirements of the Orange County Health Care Agency Environmental Health Division (i.e., the Certified Unified Program Agency), which would ensure safety standards related to the use and storage of hazardous materials are implemented. Consistency with local, State, and federal regulations related to the transport, storage, use, and disposal of hazardous materials would minimize the potential for upset and accident conditions to occur within the site. Therefore, impacts would be less than significant, and no mitigation would be required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No impact. There are no schools within 0.25 mile of the project site. The nearest schools are Don Juan Avila Middle and Elementary School (26278 Wood Canyon Drive), 0.99 mile southwest of the project site; Aliso Viejo Middle School (111 Park Avenue), 1.13 miles southeast of the project site; and Laguna Hills High School (25401 Paseo De Valencia), 1.16-mile northeast of the project site. As discussed in Impact 2.9(a), construction of the proposed project would include the limited use of hazardous materials, such as fuel and solvents. The use of these hazardous materials would be in compliance with all applicable local, State, and federal regulations. During operation of the proposed project, limited use of hazardous materials would likely be used for building maintenance. Similarly, these hazardous materials would be stored, handled, and disposed of in accordance with applicable regulations. Thus, the proposed project would not include any uses that could potentially generate hazardous materials in significant quantities that would have an impact to surrounding schools. Therefore, there would be no impact.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. Government Code Section 65962.5 refers to the Hazardous Waste and Substance Site List, commonly known as the Cortese List. The Cortese List contains hazardous waste and substance sites with known underground storage tanks (USTs) having a reportable release; and solid waste disposal facilities from which there is a known migration. The Cortese List also includes hazardous substance sites selected for remedial action; historic Cortese sites; and sites with known toxic materials identified through the abandoned site assessment program. The proposed project site is not located on a site which is included on a hazardous materials site list compiled pursuant to California Government Code Section 65962.5. The closest site recognized by the Cortese List is approximately 2.04-miles northeast of the project site and is an active Voluntary Cleanup site located at 23804

Mercury Road in Lake Forest.[44] None of the activities occurring at this site would be close enough to the project site to have an impact. Therefore, the proposed project would not create a significant hazard to the public or the environment. No impact would occur, and no mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No impact. The project site is not within 2 miles of an airport. The nearest airport is John Wayne Airport located 9.65 miles northwest of the project site. The project site is not within the Airport Influence Areas of this airport and is not located within an airport land use plan. Therefore, the proposed project would not result in a safety hazard of excessive noise for people working or living at the project site. No impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant impact. The City has developed an Emergency Operations Plan (EOP) consistent with the Standardized Emergency Management System (SEMS) outlining the City's response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The EOP is designed to incorporate and coordinate all the facilities and personnel of the City into an efficient organization capable of reacting adequately in the face of any disaster and to conduct such operations as the nature of the disaster deems necessary. It serves as an extension of the California Emergency Plan and the Emergency Resource Management Plan. The EOP is not intended to address normal day-to-day emergencies or the well-established and routine procedures used in coping with such emergencies. Instead, the operational concepts reflected in the EOP focus on potential large-scale disasters that can generate unique situations requiring unusual emergency responses. The EOP provides comprehensive policy and guidance for emergency and response operations and details the responsibilities of residents, organizations, and City departments. The EOP also establishes evacuation routes and identifies emergency shelter facilities and water supplies.

The General Plan Safety Element identifies evacuation routes in the City. Within the vicinity of the project site, Aliso Creek Road and Glenwood Drive are identified as primary evacuation routes.[45]

The project site is within Zone 20 of Aliso Viejo's Evacuation Zones. Designated evacuation zones within Zone 20 include Glenwood Drive, Aliso Creek Road, Aliso Viejo Parkway, and Moulton

[44] Department of Toxic Substances Control. 2024. EnviroStor Hazardous Waste and Substances List. Website: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Aliso+Viejo. Accessed December 4, 2024.

[45] City of Aliso Viejo. 2004. General Plan, Figure S-1 Safety Policy Map. Website: https://avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed December 3, 2024.

Parkway.[46] The project site is adjacent to Glenwood Drive, and construction would not require closure or partial closure of Glenwood Drive. The proposed project would be constructed completely within the project site and construction equipment would access the project site via Argonaut, which is the main access point to the project site. If any road closures to Argonaut are required, the project applicant and construction crew would be required to coordinate with the City of Aliso Viejo Public Works Department to ensure that emergency access routes are maintained during construction. Thus, construction of the proposed project would not impede the use of surrounding roadways for emergencies or access for emergency response vehicles.

Operation of the proposed project would not interfere with roadways, and the proposed project would provide internal circulation for emergency vehicle access. The proposed project has been designed to provide emergency service providers access to the site from any of the public streets or the drive aisles. The 24-foot private drive meets Orange County Fire Authority (OCFA) turnaround and access requirements (See Exhibit 5). The design of the proposed project would provide adequate emergency access consistent with City requirements, including the required number and design of access points and safety features. Therefore, the proposed project would not result in significant impacts to emergency access during construction and/or operation. The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No impact. The project site is located in an urbanized, flat area and does not contain slopes that could contribute to wildfire. According to the General Plan, the project site is not located along an urban-wildfire interface and is not located in the portions of the City abutting the Aliso and Woods Canyon Wilderness Park within OCFA's Very High Fire Hazard Severity Zone (VHFHSZ), where wildfires are of the greatest risk.[47] Additionally, the project site and its surrounding areas do not have a history of wildfire.[48] California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California and ranks fire threats on a scale of no fire threat, moderate, high, and very high fire severity. According to the CAL FIRE Hazards Severity Zone Mape Viewer, the project site is not located in a Fire Hazard Severity Zone (FHSZ).[49]

[46] City of Aliso Viejo. 2024. Citywide Evacuation Zones. Website: https://avcity.org/DocumentCenter/View/3750. Accessed January 21, 2025.

[47] City of Aliso Viejo. 2004. General Plan, Safety Element. Website: https:// avcity.org/DocumentCenter/View/395/Safety-Element-PDF. Accessed December 4, 2024.

[48] California Department of Forestry and Fire Protection (CAL FIRE). 2024. California Wildfire History Map. Website: https:// projects.capradio.org/california-fire-history/#10.64/33.5901/-117.7005. Accessed December 4, 2024.

[49] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed December 4, 2024.

Further, the project site is in a developed, built-up urban area that is not adjacent to any VHFHSZ or areas in the wildland-urban interface. Therefore, the proposed project is not likely to expose people or structures to wildland fire hazards. No impact would occur.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.10 Hydrology and Water Quality *Would the project:*				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
(i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
(iii)create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Environmental Evaluation

Setting

The following analysis is based in part on the Preliminary Water Quality Management Plan (PWQMP) and the Preliminary Hydrology Report prepared by X Engineering & Consulting, Inc., both included in Appendix F.

The project site is located within the Aliso Creek Watershed. Site drainage is generally broken up into two main watershed subareas in the existing condition. Drainage originates from overland flow of sloped landscaping and roof runoff that sheet flows east and west into perimeter gutters at the edge of the parking lot. Gutter flow drains into two curb outlets on either side of the driveway aisle located at the present-day driveway access to Argonaut. Stormwater flows into the gutter along Argonaut and to an existing catch basin approximately 250 feet south of the project site. This catch basin collects stormwater into a 39-inch reinforced concrete pipe (RCP) that eventually increases up to a 78-inch RCP downstream. The 78-inch RCP drains along a rip rap energy dissipation structure at Aliso Creek, where stormwater is conveyed to the Pacific Ocean at South Laguna Beach.

The project site is covered by asphalt concrete pavement and is approximately 76 percent impervious. The proposed project would increase the project site to 79 percent impervious.[50] Apart from minor landscape drains that outlet to parking lot curb face, there are no known underground storm drain facilities on-site.

According to the General Plan's Safety Element, the project site is not within a designated 100-year flood zone. The nearest 100-year flood zone is located south of the Aliso Viejo Parkway and Cedarbrook, 0.64 mile southeast of the project site.[51] Additionally, according to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer, the project site is within an area of minimal flood hazard (Zone X).[52]

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than significant impact. Project impacts related to water quality could occur over three different periods:

[50] X Engineering & Consulting. 2024. Water Quality Management Plan (WQMP), 95 Argonaut. September.

[51] City of Aliso Viejo. General Plan, Safety Element, Figure S-1 Safety Policy Map. Website: https://avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed December 16, 2024.

[52] Federal Emergency Management Agency (FEMA). 2024. National Flood Hazard Layer (NFHL) Viewer. Website: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed December 16, 2024.

- During the demolition, earthwork, and construction phase, where the potential for erosion, siltation, and sedimentation would be the greatest;
- Following construction, before the establishment of ground cover, when the erosion potential may remain relatively high; and
- After project completion, when impacts related to sedimentation would decrease markedly but those associated with urban runoff would increase.

Polluted runoff can have harmful effects on drinking water, recreational water, and wildlife. Urban runoff pollution includes a wide array of environmental, stormwater characteristics depending on-site conditions (e.g., land use, impervious cover, and pollution prevention practices), rain events (duration, amount of rainfall, intensity, and time between events), soil type and particle sizes, the amount of vehicular traffic, and atmospheric deposition. Major pollutants typically found in runoff from urban areas include sediments, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogens, and bacteria. Most urban stormwater discharges are nonpoint sources.

The City is within the jurisdictional area of the of the San Diego RWQCB. The San Diego RWQCB requirements are further clarified by the Orange County Drainage Area Management Plan (DAMP), which requires the preparation and implementation of Water Quality Management Plans (WQMPs) for development projects. The DAMP reduces the pollution content of stormwater to the Maximum Extent Practicable (MEP). The purpose of the Orange County DAMP is to satisfy NPDES permit conditions for creating and implementing a Storm Water Management Plan (SWMP) to reduce pollutant discharges to the MEP. The DAMP contains guidelines on structural and nonstructural BMPs for meeting the NPDES goals. Consistent with the DAMP, the project applicant would be required to submit a SWPPP prior to project grading and construction for City review along with a Preliminary Project WQMP and a Hydrology Report.

As described in the proposed project's Hydrology Report, drainage originates from overland flow of sloped landscaping and roof runoff that sheet flows east and west into perimeter gutters at the edge of the parking lot. Peak flow originates as overland flow from a highpoint in subarea A-1. Runoff originating as overland flow along the site boundary and from the proposed buildings would be conveyed into area drains placed throughout the development.

As the proposed project would disturb more than 1 acre of land, it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities Construction General Permit (Construction General Permit). Construction activity subject to the Construction General Permit includes any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than 1 acre. The Construction General Permit requires development and implementation of a SWPPP and monitoring plan, which must include erosion and sediment control BMPs that would meet or exceed measures required by the Construction General Permit to control potential construction-related pollutants. Erosion-control BMPs prevent erosion, whereas sediment controls trap sediment once it has been mobilized. The types of required BMPs

are relative to the amount of soil disturbed, the types of pollutants used or stored at the project site, and proximity to water bodies.

The WQMP prepared for the proposed project is intended to comply with the requirements of the County of Orange NPDES Stormwater Program. The WQMP outlines the operation and maintenance of all BMPs to be used at the project site, including a catch basin storm filter, hydrologic source controls, and structural and nonstructural source controls.

Additionally, project construction activities would be required to comply with applicable City requirements to control erosion and reduce or eliminate stormwater runoff containing sediment, including Municipal Code Chapter 13.08 Article XIII, Erosion Control, which requires preparation of an Erosion Control Plan, submitted to the building official, and the implementation of erosion and sediment control measures. Project construction activities would also be required to comply with water quality measures included in the City's Water Quality Ordinance (Municipal Code Chapter 7.35, Stormwater Management). The Water Quality Ordinance is designed to effectively prohibit non-stormwater discharges into the storm sewers, reduce the discharge of pollutants, and achieve compliance with the Clean Water Act and the Porter-Cologne Water Quality Control Act. Specifically, in accordance with Section 7.35.080, Control of Urban Runoff–New Development and Redevelopment Projects, prior to the City's issuance of a grading or building permit for the proposed project, the project applicant would be required to submit project plans demonstrating compliance with all applicable local ordinances; California Stormwater Quality Association (CASQA) standards; and the City's water quality manual, which includes the City's jurisdictional urban runoff management plan or local implementation plan, the Orange County DAMP, and the City's NPDES permit. In addition to the requirements of Municipal Code Section 7.35.080, project construction activities would be required to comply with Municipal Code Section 7.35.070, Control of Urban Runoff – Construction Projects, which requires the project applicant to submit a pollution control plan, construction BMP plan, and/or an erosion and sediment control plan meeting the requirements of the water quality manual and to submit evidence of coverage under the Construction General Permit prior to issuance of a permit involving ground-disturbing activities.

Compliance with the above regulations would ensure that impacts related to water quality during construction of the proposed project would be less than significant.

The proposed project would comply with the NPDES requirement through implementation of the WQMP and with the Orange County DAMP; as such, construction of the proposed project would not violate water quality standards or degrade surface or groundwater quality.

During operations, the project site would be subject to compliance with the Regional Municipal Separate Storm Sewer System (MS4) permit. The Regional MS4 Permit (Order No. R9-2013-0001, as amended), requires co-permittees, including the City, to reduce the discharge of pollutants from new development and significant redevelopment to the MEP. All development projects are required to implement source control and site design practices. Per the MS4 Permit requirements for redevelopment, the proposed project will also incorporate Low Impact Development (LID) elements into the site design as well as implementation of BMPs.

The proposed hydromodification management system would be designed to attenuate and manage stormwater flows to mimic pre-development hydrology, per MS4 Permit requirements. The system includes two MWS for water quality treatment, followed by a subsurface concrete detention structure located in the southeasterly portion of the site. The proposed detention system, sized 42 inches by 42 inches by 5.5 inches, is designed for hydromodification management as well as peak flow mitigation.

As described in the Hydrology Report, the impervious surfaces would increase by 3 percent under the proposed project. Under the proposed project conditions, runoff from the project site would be routed to two 8- by 16-foot proposed MWS for water quality treatment prior to entering a proposed subsurface detention basin in the southeasterly portion of the project. The detention system is designed for hydromodification management as well as peak flow mitigation. Peak flows from the site would ultimately discharge through a proposed 18-inch pipe connection into an existing 24-inch RCP storm drain downstream. Drainage under the proposed project would mimic the existing drainage condition to the maximum extent possible. Runoff generally flows from north to south. Drainage under the proposed project condition would generally concentrate sheet flow into drainage inlets and catch basins and route it into subsurface storm drainage pipes. Runoff under proposed project conditions would be conveyed to dual MWS units for water quality treatment. These dual MWS units are designed to handle a typical heavy storm, specifically one that is bigger than 85 percent of all storms in a year and lasts 24 hours. Stormwater flows exceeding this value, including flows from the MWS, would then be routed into a subsurface detention facility with a flow control outlet orifice suitable for mitigating hydromodification and peak stormwater flows. The proposed project would include a proprietary biofiltration as a BMP with no infiltration and BMPs to ensure that the ongoing operation and maintenance of the proposed project is consistent with the DAMP. The proposed condition peak flow drainage would mimic the existing condition to the maximum extent possible.

Under typical storm conditions (e.g., 2- to 10-year events), treated stormwater is detained and slowly released through a low-flow 1.5-inch orifice and a notched riser, reducing flow rates and minimizing downstream erosion. For larger storm events (e.g., 25-year storm event), excess flows bypass the MWS units and pass through the detention system, again slowing release through orifices and a weir before connecting to an existing 24-inch RCP via a new 18-inch pipe located approximately 110 feet south along Argonaut. The proposed system would reduce the post-development peak flow from 9.0 cfs (unmitigated) to 7.5 cfs (mitigated), which is less than the existing condition flow of 7.8 cfs. Therefore, the proposed project would not negatively impact downstream infrastructure.

The proposed project would be subject to federal, State, and local regulations related to water quality, including the City's Water Quality Ordinance. Implementation of the measures outlined above, including water quality operational BMPs, would reduce pollutants of concern associated with the stormwater runoff from the project site in compliance with the Regional MS4 Permit and ensure the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. The impact would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than significant impact. The project site is located within the boundaries of the MNWD. MNWD's potable water supply is entirely imported water purchased from the Municipal Water District of Orange County.[53] As such, project implementation would not substantially decrease groundwater supplies associated with water demand such that the proposed project would impede sustainable groundwater management of the basin.

The proposed project would reduce the pervious surfaces as compared to the existing conditions. Under the existing conditions, the project site is approximately 76 percent impervious. The proposed project would increase the project site to 79 percent impervious.[54] However, according to the Preliminary Hydrology Report, on-site stormwater infiltration is not feasible considering that the site is underlain by relatively thick artificial fill, which is predominantly silty/clayey, overlying bedrock. Since the project site is not considered suitable for infiltration, the proposed project does not propose infiltration BMPs. The project site does not currently allow for infiltration and groundwater recharge; thus, the proposed project would not interfere substantially with groundwater recharge such that the proposed project could impede sustainable groundwater management of the basin. As such, the proposed project would not interfere with groundwater recharge or impede sustainable groundwater management of a basin. Impacts would be less than significant.

c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

(i) result in substantial erosion or siltation on- or off-site;

Less than significant impact. As discussed above, the proposed project would increase impervious surfaces at the project site by 3 percent, which is not considered substantial because the proposed project would be subject to the NPDES permit requirements and would implement BMPs and LID elements to reduce runoff and erosion; the proposed condition peak flow drainage would mimic the existing condition to the maximum extent possible; and the proposed project would include a basin to reduce the proposed 25-year storm flow rate from the project site.[55] As previously discussed, drainage under the proposed project condition would generally concentrate sheet flow into drainage inlets and catch basins and would route it into subsurface storm drainage pipes. Runoff would be conveyed to dual MWS units for water quality treatment; specifically, one that would be sized to be bigger than 85 percent of all storm related flow events in a year and lasts 24 hours. Stormwater flows exceeding this value, including flows from the MWS would then be routed into a subsurface detention

[53] Moulton Niguel Water District (MNWD). 2025. 2020 Urban Water Management Plan, 2021. Website: https://www.mnwd.com/wp-content/uploads/2021/12/2020-Urban-Water-Management-Plan.pdf. Accessed January 23, 2025.

[54] X Engineering & Consulting. 2024. Water Quality Management Plan (WQMP), 95 Argonaut. September.

[55] Ibid.

facility with a flow control outlet orifice suitable for mitigating hydromodification and peak stormwater flows. The proposed basin would reduce the proposed project's peak flow to below the existing conditions. Under the existing conditions, the attenuated peak flow is 7.7 cubic feet per second (cfs). With implementation of the basin, the proposed attenuated peak flow of 7.1 cfs was shown to not have an adverse effect on the existing storm drain.[56]

According to the Geotechnical Due Diligence Review, slopes are considered susceptible to erosion. Implementation of the recommendations provided in the Geotechnical Due Diligence Review in accordance with the Municipal Code, as discussed in Section 2.7, Geology and Soils, would ensure that on-site runoff is controlled and directed off-site in a nonerosive manner and that site drainage and slopes are maintained over the life of the proposed project. Additionally, the proposed project would not alter the course of a river or stream, as the site is developed and located in an urban and developed area. As such, the proposed project would not alter the existing drainage pattern at the project site in a manner which would result in on- or off-site erosion or siltation. Additionally, the proposed project would implement the provisions provided in the WQMP prepared for the proposed project, which includes ongoing operation and management of BMPs at the project site. Further, the proposed project would be required to adhere to Article XIII of Chapter 13.08 of the City's Municipal Code, which contains provisions related to erosion control such as grading specifications and erosion control device requirements. Adherence to the WQMP would also ensure compliance with the County NPDES Stormwater Program. As such, impacts would be less than significant.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

Less than significant impact. As discussed above, the proposed project would increase impervious surfaces on the project site as compared to the existing conditions. However, the proposed project would implement BMPs designed to manage stormwater runoff. The proposed project would not alter the course of a river or stream. The proposed project would be consistent with the approved drainage plan provided in the Hydrology Report, including the proposed basin discussed above, which would reduce peak flows from the project site and would not result in increased surface runoff in a manner which would result in flooding. The proposed project's peak flow drainage would mimic the existing condition to the maximum extent possible. All project drainage would be routed to two proposed MWSs for water quality treatment prior to entering a proposed subsurface detention basin in the southeasterly portion of the project site. The detention system is designed for hydromodification management as well as peak flow mitigation. Peak flows from the project site would ultimately discharge through a proposed 18-inch pipe connection into an existing 24-inch RCP storm drain downstream. As such, impacts would be less than significant.

[56] X Engineering & Consulting. 2024. Preliminary Hydrology Report, 95 Argonaut. September.

(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Less than significant impact. As discussed above, the proposed project would not substantially alter the existing drainage pattern at the project site through the increase of impervious surfaces at the project site or by altering the course of a river or stream. The proposed project would connect to existing water and sanitary sewer lines and would include the installation of stormwater management systems in-site. Stormwater from the proposed project would be routed to two proposed MWS for water quality treatment prior to entering a proposed subsurface detention basin in the southeasterly portion of the project site to meet water quality objectives as required by the MS4 Permit. The proposed project would be designed consistent with the approved drainage plan provided in the Hydrology Report and would not exceed the capacity of the existing stormwater drainage system. Additionally, the proposed project would implement the provisions provided in the WQMP and the Geotechnical Due Diligence Review prepared for the proposed project—which includes ongoing operation and management of BMPs at the project site and measures to ensure that on-site runoff is controlled and directed off-site in a nonerosive manner. Further, adherence to the WQMP would ensure compliance with County NPDES Stormwater Program, which would include biofiltration, and MWS and detention systems to control and reduce the discharge of pollutants in stormwater. Compliance with the WQMP would address potential additional sources of polluted runoff from the project site. The impact would be less than significant.

(iv) impede or redirect flood flows?

Less than significant impact. The project site is within an area of minimal flood hazard (Zone X); and the proposed project would be consistent with the approved drainage plan provided in the Hydrology Report and would not cause flood flows to be impeded or redirected. Any potential flooding on-site would be treated via two MWS prior to entering a proposed subsurface detention basin in the southeasterly portion of the project. Peak flows from the site will ultimately discharge through a proposed public 18-inch pipe connection into an existing 24-inch RCP storm drain downstream approximately 110 feet south along Argonaut. As such, the impact would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than significant impact. The project site is approximately 5.02 miles from the Pacific Ocean and is not near any other large body of water; therefore, the project site is not at risk of inundation from a tsunami or seiche. As discussed above, the project site is within an area of minimal flood risk and would not include the storage of hazardous materials that could be released into the environment due to inundation from a flood other than small quantities of typical household cleaners. As such, the impact would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than significant impact. The project site is within the Aliso Creek Watershed and the Water Quality Control Plan for the San Diego Basin (Basin Plan). The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards as well as water quality goals and policies that govern the Santa Ana River Basin.[57] The proposed project would be required to comply with the goals and policies outlined in the Basin Plan, such as nonpoint source pollution control policies, which requires the proposed project to implement LID strategies and site-specific BMPs, and implementation programs, which requires coordination with local stormwater permits. As previously discussed, the proposed project would comply with the WQMP prepared for it to ensure that the proposed project meets water quality standard and would not degrade surface or groundwater quality. Therefore, the proposed project would not conflict with or obstruct implementation of a water quality control plan. Impacts would be less than significant.

Mitigation Measures

None required.

[57] California State Water Resources Control Board (State Water Board). 2024. San Diego Regional Water Quality Control Board (San Diego RWQCB). San Diego Basin Plan. Website: https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/. Accessed December 16, 2024.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.11 Land Use and Planning *Would the project:*				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Environmental Evaluation

Setting

The General Plan currently designates the project site Business Park. The proposed project would require a GPA to change the land use designation from Business Park to HDR. The HDR land use designation is intended to provide residential development with a density between 18 and 30 dwelling units per gross acre, with an average density of 20 units per gross acre.The project site is currently zoned Business Park-2 (Exhibit 4). The proposed project requests a rezone to change the zoning designation from Business Park-2 to RH Residential–High Density District. The RH Residential–High Density zoning district is intended to provide for the development and preservation of high-density neighborhoods consisting of attached and multiple dwelling units such as townhomes, apartments, condominiums, and senior housing.

Would the project:

a) Physically divide an established community?

No impact. The project site is in a highly developed and urbanized area and the project site is currently developed with an office building and parking lot. The surrounding area contains commercial and residential uses, similar to the project site. Land adjacent to the proposed project are designated for Very High Density Residential to the north, for Business Parks to the south and west, and Community Facilities to the east. The project site is not large enough or otherwise configured in such a way that would create a physical barrier within an established community. A typical example of such a barrier would be a project that involved a continuous right-of-way, such as a roadway, which would divide a community and impede access between parts of the community. The proposed project does not include these types of features. Implementation of the proposed project would not disrupt the surrounding land uses or divide the physical arrangement of the established communities to the north

and east of the project site. Therefore, the proposed project would not physically divide an established community. No impact would occur, and no mitigation is required.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than significant impact. The proposed project would include a GPA to amend the General Plan land use designation from Business Park to HDR and a rezone to change the zoning from Business Park-2 to RH Residential–High Density. The land uses to the north, south, east, and west of the project site are designated by the General Plan Very High Density Residential, Business Park, and Community Facilities. The proposed GPA would be consistent with the existing surrounding land uses, and with the approval of these changes, the proposed project would not conflict with any applicable land use plan, policy, or regulation adopted for the purposes of avoiding or mitigating an environmental effect. Table 9 shows an analysis of the proposed project's consistency with relevant policies of the Aliso Viejo General Plan adopted for the purpose of avoiding or mitigating an environmental effect. As shown in Table 9, the proposed project is consistent with all applicable General Plan policies.

Table 9: Project Consistency with Applicable General Plan Policies

Aliso Viejo General Plan Policies and Actions	Project Consistency
Land Use Element	
Policy LU-2.1: Preserve the current pattern of development that encourages more intense and higher density development at the core of the community (near Grand Park and Aliso Viejo Town Center) and less intense uses radiating from the central core.	**Consistent.** The proposed project includes redevelopment of an underutilized office space that is not within the City's central core. The proposed project would include 61 townhome units, which is consistent with the town homes located just northwest of the site at Glenwood Drive. Therefore, the proposed project would provide an appropriate density, consistent with this policy.
Policy LU-2.4: Encourage land uses that complement (in type, size, scale and design) the community's topography, scenic vistas, and natural resources.	**Consistent.** The proposed project includes townhome development in an area that is developed and urbanized. Redevelopment of the site would be generally consistent with existing surrounding uses, including the existing town homes northwest of the site. Further, as discussed in Section 2.1, Aesthetics, the proposed project would not have an adverse effect or damage a scenic vista or natural resources. As such, the proposed project is consistent with this policy.
Policy LU-4.1: Encourage environmentally sensitive development patterns, promote public education, and enforce infrastructure criteria that protect residents and	**Consistent.** The proposed project consists of mixed-use infill redevelopment in an urbanized area and would not degrade environmentally sensitive areas of

Aliso Viejo General Plan Policies and Actions	Project Consistency
property from hazards related to slope stability and flooding.	the City. The proposed project is not located near a flood zone. The proposed project would comply with all recommendations in the project-specific geotechnical review, per COA GEO-1. On-site drainage and water quality improvements would provide protection from localized flooding. Additionally, the proposed project is not located within or near a flood zone. As such, the proposed project is consistent with this policy.
Policy LU-4.2: In areas where residential and business park or office land uses abut each other, use buffering techniques employing water-conserving landscaping, setbacks, screening, and appearance standards to improve compatibility.	**Consistent.** The proposed project would be buffered from adjacent business park uses by setbacks, landscaping, and retaining walls.
Policy LU-4.4: Reduce the discharge of pollutants and runoff flow from urban development to the maximum extent practicable.	**Consistent.** As discussed in Section 2.10, Hydrology and Water Quality, the proposed project includes an on-site stormwater system that would reduce on-site runoff. Specifically, runoff from the project site would be routed to two proposed modular wetland systems (MWS) for water quality treatment prior to entering a proposed subsurface detention basin in the southeasterly portion of the project. The proposed water quality Best Management Practices (BMPs) would adhere to Water Quality Management Plan (WQMP) requirements, including providing operational BMPs that would reduce pollutants of concern associated with the stormwater runoff from the project site in compliance with the Regional Municipal Separate Storm Sewer System (MS4) Permit and ensure the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. As such, the proposed project is consistent with this policy.
Policy LU-5.3: Ensure that new development is consistent with City and service provider plans to complete needed improvements and funding capacity for such improvements.	**Consistent.** As discussed in Section 2.15, Public Services and Section 2.19, Utilities and Service Systems, existing public and utility services are generally anticipated to be adequate to serve the proposed project. Any improvements would be constructed in compliance with City and service provider standards and the applicant would pay all applicable fees as required. As such, the proposed project is consistent with this policy.
Policy LU-8.2: Require recycling, composting, source reduction and education efforts throughout the	**Consistent.** As discussed in Section 2.19, Utilities and Service Systems, the proposed project would be

Aliso Viejo General Plan Policies and Actions	Project Consistency
community, including residential, businesses, industries, and institutions, within the construction industry, and in all City-sponsored activities.	required to comply with applicable federal, State, and local regulations regarding the recycling, composting, source reduction, and education efforts. As such, the proposed project is consistent with this policy.
Policy LU-11.1: Ensure that new development contributes its fair share to the timely construction of new school facilities, to the extent permitted by law, and compatible with other City land use objectives.	**Consistent.** As discussed in Section 2.15, Public Services, the project applicant would be required to pay all statutory fees in place at the time in compliance with Senate Bill (SB) 50 and demonstrate proof of payment to the City for approval of a building permit. Payment of developer fees under SB 50 would ensure school related impacts are less than significant. As such, the proposed project is consistent with this policy.
Policy LU-12.2: As a condition upon new development, require payment of park fees and/or dedication and provision of parkland, recreation facilities and/or multiuse trails that improve the public and private recreation system.	**Consistent.** As discussed in Section 2.15, Public Services, the project applicant would be required to pay all public benefits fees in accordance with the Municipal Code Chapter 14.16, which would satisfy the City's parkland requirement. The proposed project would also provide on-site amenities to residents that would partially offset impacts to parks facilities. Additionally, the proposed project would provide 40,259.9 square feet of open space including 5,587 square feet of usable open space to help offset impacts to park facilities. As such, the proposed project is consistent with this policy.
Conservation/Open Space Element	
Policy COS-1.2: Reduce the amount of water used for landscaping and increase use of native and low water plants. Maximize use of native, low water plants for landscaping of areas adjacent to sidewalks or other impermeable surfaces.	**Consistent.** The proposed project would be required to comply with the City's landscaping requirements, including Chapter 7.30, Water Efficient Landscape Regulations, which would increase water efficiency. The project proposes landscaping that includes native and/or low water plants. As such, the proposed project is consistent with this policy.
Policy COS-1.4: Promote water conservation measures, reduce urban runoff, and prevent groundwater pollution within development projects, property maintenance, City operations and all activities requiring City approval.	**Consistent.** As discussed in Section 2.10, Hydrology and Water Quality, the proposed project would implement structural, source control, and site design BMPs to address water quality conditions associated with the proposed project. The proposed project would adhere to WQMP requirements, which would reduce pollutants of concern associated with the stormwater runoff from the project site in compliance with the Regional MS4 Permit and ensure the proposed project would not violate any water quality standards or waste

Aliso Viejo General Plan Policies and Actions	Project Consistency
	discharge requirements or otherwise substantially degrade surface or ground water quality. As such, the proposed project is consistent with this policy.
Policy COS-4.2: Encourage and maintain high-quality architectural and landscaping designs that enhance or complement the community's visual character.	**Consistent.** The proposed project would include townhomes with a Spanish Eclectic architectural style, which would be subject to design review as required by Chapter 15.62 of the City's Municipal Code.
Policy COS-5.1: Integrate air quality planning with City land use, economic development, and transportation planning efforts.	**Consistent.** As discussed in Section 2.3, Air Quality, the proposed project would not generate pollutant emissions in excess of applicable significance thresholds. As such, the proposed project is consistent with this policy.
Policy COS-5.3: Support alternative transportation modes and technologies and develop bike- and pedestrian-friendly neighborhoods to reduce emissions associated with automobile use.	**Consistent.** The proposed project would provide electric vehicle (EV) charging infrastructure consistent with the latest CALGreen requirements, which would allow future residents to charge electric vehicles, in turn reducing air quality emissions from fossil fueled vehicles. As such, the proposed project is consistent with this policy.
Policy COS-6.1: Encourage green building designs for new construction and renovation projects within the City.	**Consistent.** The proposed project would be required to comply with 2022 Title 24 standards and CALGreen. Additionally, the proposed project would be built all-electric and install solar photovoltaic (PV) systems that would generate renewable energy consistent with the 2022 Building Energy Efficiency Standards. As such, the proposed project is consistent with this policy.
Policy COS-7.5: Ensure that new development provides park land and/or improvements at a fair share ratio, pursuant to the City's Parkland Ordinance.	**Consistent.** Refer to response to Land Use Element Policy 12-2.
Policy COS-8.1: Balance the benefits of development with a project's potential impacts to cultural resources.	**Consistent.** As discussed in Section 2.5, Cultural Resources, the project site does not contain known cultural resources; however, there is the potential for unknown or undiscovered resources to be uncovered through ground-disturbing construction activities. The proposed project would be required to implement mitigation measures, which would reduce potential impacts to cultural resources to a level that is less than significant. MM CUL-1 would require a Worker Environmental Awareness Program (WEAP) training, a site survey conducted by a qualified Archaeologist, and archaeological monitoring. MM CUL-2 would require consultation with a qualified Archaeologist in the event that buried archaeological resources are

Aliso Viejo General Plan Policies and Actions	Project Consistency
	discovered during construction, as well as inadvertent discovery procedures. Implementation MM CUL-1 and MM CUL-2 would ensure that potential impacts to archaeological resources will be reduced to a level of less than significant. As such, the proposed project is consistent with this policy.
Safety Element	
Policy S-1.1: Avoid development in areas susceptible to erosion and sediment loss.	**Consistent.** As discussed in Section 2.7, Geology and Soils, grading and earthwork activities associated with project construction would expose soils to potential short-term erosion by wind and water. However, project construction activities would be required to comply with applicable City requirements to control erosion and reduce or eliminate stormwater runoff containing sediment, including Aliso Viejo Municipal Code Chapter 13.08, Article XIII, Erosion Control, which requires the implementation of erosion and sediment control measures. Project construction activities would also be required to comply with applicable water quality measures, including the City's Water Quality Ordinance (Municipal Code Chapter 7.35, Stormwater Management), which include conditions and requirements established by the City related to the reduction or elimination of stormwater runoff pollutants during construction and operational phases of the proposed project. As such, the proposed project is consistent with this policy.
Policy S-1.2: Investigate specific geologic conditions underlying all new development or redevelopment proposals in areas where potential fault rupture, liquefaction, slope instability or other geological hazards are suspected.	**Consistent.** As discussed in Section 2.7, Geology and Soils, the geologic conditions associated with development of the project site have been investigated in the Preliminary Geotechnical Due Diligence Study. The project site is not susceptible to potential fault rupture or liquefaction. The proposed project would be required to comply with site-specific geotechnical recommendations associated with potential earthquake ground shaking, slope instability, or other geological hazards. As such, the proposed project is consistent with this policy.
Policy S-2.3: Ensure adequate fire equipment access and fire suppression resources to all developed and open space areas within the City.	**Consistent.** The proposed project would include a total of three new fire hydrants on the eastern, western, and southern portions of the project site and would connect to existing water lines. The proposed project would be required to comply with all City and Orange County Fire Authority (OCFA) requirements for

Aliso Viejo General Plan Policies and Actions	Project Consistency
	fire prevention and safety measures, including site access and would be subject to approval by the City and OCFA. As such, the proposed project is consistent with this policy.
Policy S-3.1: Require that new development and redevelopment minimize stormwater and urban runoff into drainage facilities by incorporating on-site design features such as detention basins, water features, or other suitable strategies. Where feasible, support the use of common detention facilities serving more than one development.	**Consistent.** Refer to response to Land Use Element Policy LU-4.4 and Conservation/Open Space Element Policy COS-1.4.
Policy S-5.3: Apply design techniques and standards that employ adequate street and property lighting and place an increased emphasis on public areas to reduce potential criminal activity in new development and reuse projects.	**Consistent.** All lighting installed as part of the proposed project would be subject to compliance with the City's lighting requirements. In addition, the proposed project would be required to comply with the City's Crime Prevention Through Environmental Design (CPTED) requirements in accordance with Municipal Code Section 15.50.020, CPTED Safety Requirements. Prior to issuance of a building permit, Orange County Sheriff's Department (OCSD) would review the proposed project plans to ensure the proposed project adheres to all applicable security requirements. As such, the proposed project is consistent with this policy.
Noise Element	
Policy N-3.1: Ensure stationary noise impacts on sensitive receptors and noise emanating from construction activities, private developments/residences, landscaping activities and special events are minimized.	**Consistent.** As discussed in Section 2.13, Noise, the proposed project would result in less than significant impacts related to noise. As such, the proposed project is consistent with this policy.

Impacts are therefore considered less than significant, and no mitigation is required.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.12 Mineral Resources *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Evaluation

Setting

The information and analysis for Mineral Resources impacts is based on the General Plan. The project site is zoned Business Park-2 and is located in an urbanized area in the City, and no known mineral resources are present on-site.

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No impact. The General Plan does not identify any mineral resources in the City. The project site does not support mineral extraction and does not contain any mineral resource zones or other areas designated as containing known mineral resources. The project site is currently developed and is currently zoned Business Park-2 and is currently designated Business Park. The proposed project would redesignate the site HDR and would rezone the project site RH. These land use and zoning classifications do not support mineral resource extraction,[58] which precludes the potential for impacts associated with mineral resources. No impact would occur.

[58] City of Aliso Viejo. 2004. City of Aliso Viejo General Plan, Land Use Element, Land Use Policy Map, Figure LU-1. Website: http://avcity.org/DocumentCenter/View/397/Land-Use-Policy-Map-PDF. Accessed January 21, 2025.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No impact. The Aliso Viejo General Plan does not designate any lands within the City as mineral resources deposit areas. There are no existing mineral resource recovery operations on the project site or surrounding area.[59] Additionally, the project site is not zoned for mineral resources.[60] Therefore, the proposed project would not result in the loss of availability of known mineral resources of value to the region or result in the loss of a locally important mineral resource recovery site described on a local general plan, specific plan, or other land use plan. No impact to mineral resources would occur.

Mitigation Measures

None required.

[59] City of Aliso Viejo. 2004. City of Aliso Viejo General Plan, Land Use Element, Land Use Policy Map, Figure LU-1. Website: http://avcity.org/DocumentCenter/View/397/Land-Use-Policy-Map-PDF. Accessed January 21, 2025.

[60] City of Aliso Viejo. 2024. City of Aliso Viejo Municipal Code. Website: https://www.codepublishing.com/CA/AlisoViejo/#!/AlisoViejo15/AlisoViejo1510.html#15.10. Accessed January 21, 2025.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.13 Noise *Would the project result in:*				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Evaluation

Setting

The primary noise sources near the project site include traffic from Glenwood Drive to the north and Argonaut to the south and west. The closest noise-sensitive receptors to the project site are single-family residences located northwest of the project site.

Existing Conditions

Ambient Noise

The dominant noise sources in the project vicinity include traffic on local roadways, primarily from traffic on Glenwood Drive, which runs along the northern boundary of the project site, and on Argonaut located near the southwest corner of the project site.

An ambient noise monitoring effort was conducted to document daytime ambient noise levels on the project site. Short-term noise monitoring was conducted by Vista Environmental on Monday, May 6, 2024, between 12:23 p.m. and 12:56 p.m. The noise measurements were taken during the midday

hours, as the midday hours typically have the highest daytime noise levels in urban environments. It should be noted that peak noise hours often vary slightly from peak traffic hours as peak noise hours more closely align with high volume traffic that is still free-flowing, while peak traffic hours often result in slower vehicle speeds due to the volume of traffic on the roadway. The short-term existing noise measurement results are summarized in Table 10.

Table 10: Existing Ambient Noise Levels on the Project Site

Site ID #	Description	L_{eq}	L_{max}
ST-1	Measurements taken on north side of the project site, approximately 90 feet south of Glenwood Drive centerline. Primary noise sources observed were vehicles on Glenwood Drive.	57.9	72.0
ST-2	Measurements taken on southwest corner of the project site, approximately 70 feet east and 60 feet north of Argonaut centerline. Primary noise sources observed were vehicles on Argonaut and truck delivery on-site.	56.0	73.1

Characteristics of Noise

Noise is defined as unwanted sound. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. Most of the sounds that we hear in the environment do not consist of a single frequency but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. Noise is typically generated by transportation, specific land uses, and ongoing human activity.

The standard unit of measurement of the loudness of sound is the dB. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. A change of 3 dB is the lowest change that can be perceptible to the human ear in outdoor environments. While a change of 5 A-weighted decibel (dBA) is considered to be the minimum readily perceptible change to the human ear in outdoor environments.

Since the human ear is not equally sensitive to sound at all frequencies, the dBA scale was derived to relate noise to the sensitivity of humans, it gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for a number of various sound level metrics, including the day/night sound level (L_{dn}) and the Community Noise Equivalent Level (CNEL), both of which represent how humans are more sensitive to sound at night. In addition, the equivalent continuous sound level (L_{eq}) is the average sound energy of time-varying noise over a sample period and the L_{max} is the maximum instantaneous noise level occurring over a sample period.

Regulatory Framework

The project site is located within the City of Aliso Viejo, in Orange County. The City addresses noise in the Noise Element of the General Plan and the Municipal Code.

City of Aliso Viejo General Plan

The City addresses noise in the City's General Plan. The objectives of the General Plan's Noise Element are to identify noise sources in the City and define strategies for reducing the negative impact of noise on the community. The Noise Element identifies baseline and projected noise levels so that this information can guide future land use decisions in a manner that limit noises and its effect on the community.

The following applicable goals and policies to the proposed project are from the Noise Element of the General Plan.

Goal N-1 Minimize the impact of point source noise and ambient noise levels throughout the community.

Policy N-1.1 Ensure that construction and occupancy of new development are compatible with, and do not exceed thresholds defining the acceptable noise environment in surrounding areas.

Policy N-1.2 Require inclusion of noise-reducing design features in development projects to address the impact of noise on residential development.

Policy N-2.3 Require inclusion of sound-reducing design measures in development projects impacted by transportation-related noise.

Policy N-2.4 Encourage use of alternative transportation technologies that minimize noise impacts.

Goal N-3 Minimize noise impacts from sources other than transportation.

Policy N-3.1 Ensure stationary noise impacts on sensitive receptors and noise emanating from construction activities, private developments/residences, landscaping activities and special events are minimized.

Policy N-3.2 Require that mixed-use structures and areas be designed to prevent transfer of noise and vibration from commercial uses to residential uses.

Table 11 (Table N-1 in the City's General Plan Noise Element) summarizes Orange County's residential noise standards, which have been adopted by the City. The standards represent the maximum acceptable noise levels as measured from any residential property in the City. Accordingly, it is unlawful to cause the noise level on any residential property to exceed the exterior noise standards: (1) for a cumulative period of more than 30 minutes in any hour; (2) by plus 5 dBA for a cumulative period of more than 15 minutes in any hour; (3) by plus 10 dBA for a cumulative period of

more than 5 minutes in any hour; (4) by plus 15 dBA for a cumulative period of more than 1 minute in any hour; or (5) plus 20 dBA for any period of time. In addition, any noise that exceeds the interior noise standards established for residential uses: (1) for a cumulative period of more than 5 minutes in any hour; (2) by plus 5 dBA for a cumulative period of more than 1 minute in any hour; or (3) by plus 10 dBA for any period of time, is unlawful.

Table 11: Orange County Residential Noise Standards

	Daytime Noise Standards (7:00 a.m. through 10:00 p.m.)	Nighttime Noise Standards (10:00 p.m. through 7:00 a.m.)
Interior Noise Standards	55 dBA	45 dBA
Exterior Noise Standards	55 dBA	50 dBA

Note:
dBA = A-weighted decibel
Standards are based on measurements taken from any residential property in the City.
Source: Aliso Viejo General Plan, Noise Element, Table N-1.

City of Aliso Viejo Municipal Code

The City of Aliso Viejo has established noise performance standards and permissible hours for construction activities in the Municipal Code. These provisions are summarized below:

Section 8.12.050 Exterior noise standards

A. The following exterior noise standards (Table 12), unless otherwise specifically indicated, shall apply to all residential property with the City:

Table 12: Exterior Noise Standards

Land Use	Noise Level	Time Period
Residential Exterior Noise Standards		
Density of less than 10 du/acre	50 dBA	7:00 a.m. – 10:00 p.m.
	45 dBA	10:00 p.m. – 7:00 a.m.
Density of more than 10 du/acre	55 dBA	7:00 a.m. – 10:00 p.m.
	50 dBA	10:00 p.m. – 7:00 a.m.
Nonresidential Exterior Noise Standards		
Commercial	65 dBA	7:00 a.m. – 10:00 p.m.
	60 dBA	10:00 p.m. – 7:00 a.m.
Manufacturing/Industrial	70 dBA	24 hours per day

Land Use	Noise Level	Time Period
Notes: dBA = A-weighted decibels du/acre = dwelling units per acre Source: Aliso Viejo Municipal Code Section 8.12.050, Exterior Noise Standards.		

Section 8.12.060, Interior Noise Standards

Section 8.12.060 establishes interior noise standards for residential property within the City. For all residential properties, the interior noise standard is 55 dBA between the hours of 7:00 a.m. to 10:00 p.m. and 45 dBA between the hours of 10:00 p.m. and 7:00 a.m.

Section 8.12.070, Exemptions

Section 8.12.070 establishes a list of activities that the Municipal Code considers exempt from the provisions of the City's noise ordinance. Exempt activities that are relevant to the proposed project include:[61]

E. Noise sources associated with construction, repair, remodeling, or grading of any real property, provided the activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, 8:00 p.m. and 8:00 a.m. on Saturday, or at any time on Sunday or a federal holiday.

F. Noise sources associated with the maintenance of real property, provided the activities take place between the hours of 7:00 a.m. and 8:00 p.m. on any day except Sunday or a federal holiday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday or a federal holiday.

G. Any activity to the extent regulation thereof has been preempted by State or federal law.

H. Noise sources associated with solid waste collection and removal, provided such activities take place between 7:00 a.m. and 6:00 p.m. Monday through Friday where audible in residential areas; or between 7:00 a.m. and 6:00 p.m. on Saturdays where audible in residential areas; or between 5:00 a.m. and 9:00 p.m. any day where such activity is not audible in residential areas; or as otherwise provided in an approved franchise agreement between a waste hauler and the City.

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

[61] City of Aliso Viejo. 2025. Aliso Viejo Municipal Code 8.12.070 Exemptions. Website: https://www.codepublishing.com/CA/AlisoViejo/html/AlisoViejo08/AlisoViejo0812.html#8.12.070. Accessed February 14, 2025.

Short-term Construction Impacts

Less than significant impact. For purposes of this analysis, a significant impact would occur if construction activities would result in a substantial temporary increase in ambient noise levels in excess of the City's established standards applicable to construction noise.

The Municipal Code Section 8.12.070 establishes allowable hours and noise standards for construction activities and equipment. Construction activities, including the operation of any tools or equipment used in construction, are allowed between the hours of 7:00 a.m. through 8:00 p.m. Monday through Friday and from 8:00 a.m. through 8:00 p.m. Saturday. Construction activities on Sundays and federal holidays are prohibited all hours.

While the City does not establish noise level thresholds for construction activities, this analysis uses the noise limits established by the Federal Transit Administration (FTA) to identify the potential for impacts due to substantial temporary construction noise. The FTA identifies construction noise limits in the Transit Noise and Vibration Impact Assessment Manual.[62] During daytime hours, a significant temporary increase would be an increase in excess of the average daily noise levels of 80 dBA L_{eq} as measured at a receiving residential land use.

Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings. Impact equipment such as pile drivers would not be used during construction of the proposed project.

The site preparation phase, which includes excavation and grading of the project site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery and compacting equipment such as bulldozers, draglines, backhoes, front loaders, roller compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Construction of the proposed project would require the use of graders, excavators, dozers, front-end loaders, and backhoes. The maximum noise level generated by each bulldozer, excavator, and grader is assumed to be 85 dBA L_{max} at 50 feet from this equipment. A characteristic of sound is that

[62] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual.

each doubling of sound sources with equal strength increases a sound level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, a reasonable worst-case combined noise level during this phase of construction would be 90 dBA L_{max} at a distance of 50 feet from the acoustic center of a construction area. This would result in a reasonable worst-case hourly average of 86 dBA L_{eq}.

The closest noise-sensitive receptors to the project site are single-family residences located northwest of the project site. The closest residence would be located approximately 200 feet from the acoustic center of construction activity where multiple pieces of heavy construction equipment would potentially operate simultaneously at the project site. At this distance, with minimal shielding from an existing 6-foot masonry walls, worst-case construction noise levels could range up to approximately 70 dBA L_{max} intermittently and could have an hourly average of up to 64 dBA L_{eq}, at the façade of the nearest single-family residential home. The calculation spreadsheet with detailed modeling assumptions is provided in Appendix G.

These reasonable worst-case construction noise levels would only occur periodically throughout the day as construction equipment operates along the nearest project boundaries. Additionally, these noise levels would drop off at a rate of 6 dBA per doubling of distance as the equipment moves over the project site.

Furthermore, the proposed project would be required to comply with the City's permissible hours for construction (7:00 a.m. through 8:00 p.m. Monday through Friday and 8:00 a.m. through 8:00 p.m. Saturday), which would ensure that construction noise would not result in a substantial increase in nighttime noise levels in the project vicinity. In addition, the calculated conservative worst-case construction noise levels would not exceed the FTA's average daily threshold of 80 dBA L_{eq} as measured at the nearest residential receptors. It should also be noted that these temporary, reasonable, worst-case maximum construction noise levels would not exceed existing maximum noise levels on the project site that were documented by the ambient noise monitoring effort. The reasonable worst-case hourly average noise levels would exceed documented existing ambient noise levels of 56 dBA to 57.9 dBA L_{eq} by no more than 8 dBA. This would not be considered a substantial temporary increase in ambient noise levels. Therefore, the analysis demonstrates that the proposed project's construction noise impact from on-site activities would be less than significant.

Operational/Stationary Source Noise Impacts

Less than significant impact. A significant impact would occur if the proposed project would result in an exceedance of the City's noise performance standards for stationary noise sources. A significant impact would occur if operational noise levels generated by stationary noise sources at the proposed project site would result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds established by the City. As shown in Table 13 above, the City's Residential Noise Standard for exterior daytime noise (7:00 a.m. through 10:00 p.m.) is 55 dBA and exterior nighttime noise (10:00 p.m. through 7:00 a.m.) is 50 dBA.

Implementation of the proposed project would include operation of new mechanical ventilation equipment. Noise levels for residential-grade mechanical ventilation equipment systems range up to

approximately 70 dBA L_{eq} at a distance of 3 feet. The proposed project would have residential-grade mechanical ventilation equipment for each proposed residential units. The proposed mechanical ventilation equipment could be located as close as 200 feet from off-site noise-sensitive receptors. At this distance, with minimal shielding from an existing 6-foot concrete wall, worst-case resulting noise levels could range up to approximately 16 dBA L_{eq}. The noise calculation sheet is provided in Appendix G.

These operational noise levels would not exceed the City's most stringent nighttime noise performance thresholds of 50 dBA as measured at the nearest residential property. In addition, they would not exceed existing ambient noise levels in the project vicinity, which, as noted above, range from 56 dBA to 57.9 dBA L_{eq}. Therefore, rooftop mechanical ventilation system operational noise levels would not result in a substantial permanent increase in noise levels in excess of established standards. The impact of mechanical ventilation equipment operational noise levels on sensitive off-site receptors would be less than significant.

Operational/Mobile Source Noise Impacts

Less than significant impact. A significant impact would occur if project-generated traffic would result in a substantial increase in ambient noise levels compared with those that would exist without the proposed project. Typically, a doubling of the Average Daily Traffic (ADT) hourly volumes on a roadway segment is required in order to result in an increase of 3 dBA in traffic noise levels, which, as discussed in the characteristics of noise discussion above, is the lowest change that can be perceptible to the human ear in outdoor environments. Therefore, for the purposes of this analysis, a doubling of the existing ADT volumes would result in a substantial permanent increase in traffic noise levels.

According to the Trip Generation Assessment prepared by Urban Crossroads (Appendix I),[63] the existing peak-hour trips on Argonaut adjacent to the project site are 38 AM peak-hour trips and 24 PM peak-hour trips. However, the proposed project would only generate 25 AM peak-hour trips and 32 PM peak-hour trips under the 61-unit scenario. Therefore, net new proposed project trips would not double existing traffic trips on any roadway segment in the project vicinity. Furthermore, this increase in trips would result in a less than 1 dBA increase in existing traffic noise levels along any roadway segment in the project vicinity. This increase is below a level that would be a perceptible increase and well below a level that would be considered a substantial increase in traffic noise levels. Therefore, the proposed project would not double average daily trips on Argonaut adjacent to the project site and would not generate 3 dBA increase in traffic noise levels. Thus, the proposed project would not result in a substantial permanent increase in ambient noise levels from project-generated traffic trips, and mobile source operational noise impacts would be less than significant**.**

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact. A significant impact would occur if the proposed project would generate groundborne vibration or groundborne noise levels in excess of established standards. The

[63] Urban Crossroads. 2024. Argonaut Residential Trip Generation Assessment. June 1.

City has not established requirements regarding construction vibration impacts; therefore, for the purposes of this analysis, the FTA guidelines for vibration impacts are used to determine potential significant construction and operational-related vibration impacts.[64]

This section analyzes both construction and operational groundborne vibration and noise impacts. Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. Groundborne noise is generated when vibrating building components radiate sound, or noise, generated by groundborne vibration. In general, if groundborne vibration levels do not exceed levels considered to be perceptible, then groundborne noise levels would not be perceptible in most interior environments. Therefore, this analysis focuses on determining exceedances of groundborne vibration levels.

Short-term Construction Vibration Impacts

Of the variety of equipment that would be used during construction, small vibratory rollers would produce the greatest groundborne vibration levels. Impact equipment such as pile drivers would not be used during construction of the proposed project. Small vibratory rollers produce groundborne vibration levels ranging up to 0.101 inch per second (in/sec) peak particle velocity (PPV) at 25 feet from the operating equipment.

The closest structure to the project site is a water tower to the east of the project site, located approximately 80 feet from the nearest construction footprint where small vibratory rollers would potentially operate. At this distance, groundborne vibration levels would range up to 0.01 in/sec PPV from operation of the types of equipment that would produce the highest vibration levels. This is well below the FTA's most stringent threshold for construction vibration damage of 0.12 in/sec PPV for a structure that is extremely susceptible to vibration damage. As a result, construction of the proposed project would not expose the nearby water tower to groundborne vibration levels in excess of their applicable FTA damage criteria, and this impact would be less than significant.

The nearest building structure to the project site is the Azarian US Gymnastics building to the west of the project site and is located approximately 115 feet from the nearest construction footprint where small vibratory rollers would potentially operate. At this distance, groundborne vibration levels would range up to 0.01 in/sec PPV from operation of the types of equipment that would produce the highest vibration levels. This is below the FTA's construction vibration damage criteria of 0.3 in/sec PPV for this type of structure, a building of engineered concrete and masonry construction. As a result, construction of the proposed project would not expose nearby buildings to groundborne vibration levels in excess of their applicable FTA damage criteria, and this impact would be less than significant.

[64] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

Operational Vibration Impacts

Implementation of the proposed project would not include any new permanent sources of groundborne vibration that would expose persons in the project vicinity to groundborne vibration levels that could be perceptible without instruments at any existing sensitive land use in the project vicinity. Additionally, there are no active sources of groundborne vibration in the project vicinity that would produce vibration levels that would be perceptible without instruments within the project site. Therefore, there would be no impact related to operational groundborne vibration.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The nearest airport to the project site is John Wayne Airport, located approximately 9.65 miles northwest of the project site. While aircraft noise is occasionally audible at the project site, because of the distance from the airport and the orientation of runways and flight patterns, the project site does not lie within the established noise contours of John Wayne Airport and is not close enough to any other airports to be affected by aviation noise. Therefore, implementation of the proposed project would not expose persons residing or working in the project vicinity to noise levels from airport activity that would exceed normally acceptable standards for the proposed land use development, and no impact would occur.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.14 Population and Housing *Would the project:*				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Evaluation

Setting

According to the California Department of Finance, the City had a population of 50,068 persons as of January 1, 2024.[65]

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than significant impact. As described above, the City had a provisional population estimate of 50,068 persons as of January 1, 2024.[66] The 2004 Aliso Viejo General Plan Final EIR anticipated a population of 48,071 persons at buildout. The buildout population identified in the General Plan Final EIR has already been exceeded.

[65] California Department of Finance. 2024. Table 2: E-5 City/County Population and Housing Estimates, 1/1/2024. Website: https:// view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdof.ca.gov%2Fwp-content%2Fuploads%2Fsites%2F352%2FForecasting%2FDemographics%2FDocuments%2FE-5_2024_InternetVersion.xlsx&wdOrigin=BROWSELINK. Accessed December 6, 2024.

[66] Ibid.

According to the California Department of Finance, the City has an average of 2.54 persons per household in 2024.[67] The proposed project would include the construction of 61 3-story townhomes, which would increase the City's population by up to 155 persons based on the California Department of Finance's average household size.[68] This is approximately 0.3 percent of the City's existing population, which is a negligible increase of the City's total population.

SCAG is the designated Metropolitan Planning Organization (MPO) for six counties (Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial) and 191 cities, including the City of Aliso Viejo. As the federally-designated MPO, SCAG is responsible for developing and adopting regional housing, population, and employment growth forecasts for local Orange County governments, among other counties. The latest SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is adopted in April 2024.[69]

While the 2024 RTP/SCS does not provide population projections below the county-level, the 2024 RTP/SCS states that a rough estimate of the future jurisdiction-level population based on Connect SoCal's household forecast can be derived using county-level population to housing ratio.[70] Using the 2050 Orange County population to housing ratio of 2.745, Aliso Viejo is projected to have a population of approximately 56,000 for the year 2050. As such, the proposed project would not exceed SCAG's growth projections for the City.

Furthermore, in 2021, SCAG adopted the 6th Cycle Final Regional Housing Needs Assessment (RHNA) Allocation Plan, which assigns a share of the region's future housing need to each jurisdiction in the SCAG region. The City's share of the region's new housing need for the 2021–2029 planning period as established by SCAG in the RHNA is 1,195 units. Of these, the City's housing need includes 390 units for very-low-income households, 214 for low-income households, 205 for moderate-income households, and 386 for above-moderate-income households.[71] The proposed project would provide 61 residential units including three very-low-income units and 58 market rate units. Therefore, the proposed project would help to accommodate the RHNA housing allocation for the City in order to meet housing needs.

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[67] California Department of Finance. 2024. Table 2: E-5 City/County Population and Housing Estimates, 1/1/2024. Website: https:// view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdof.ca.gov%2Fwp-content%2Fuploads%2Fsites%2F352%2FForecasting%2FDemographics%2FDocuments%2FE-5_2024_InternetVersion.xlsx&wdOrigin=BROWSELINK. Accessed December 6, 2024.

[68] 2.54 persons per household * 61 residential units= 155 persons

[69] Southern California Association of Governments (SCAG). 2024. The Southern California Association of Governments' 2024–2050 Regional Transportation Plan/ Sustainable Communities Strategy. Website: https://scag.ca.gov/connect-socal. Accessed June 18, 2025.

[70] Southern California Association of Governments (SCAG). 2024. 2024 – 2050. Connect SoCal 2024 Demographics & Growth Forecast. Website: https://scag.ca.gov/sites/default/files/2024-05/23-2987-tr-demographics-growth-forecast-final-040424.pdf. Accessed June 18, 2025.

[71] City of Aliso Viejo. 2024. City of Aliso Viejo Adopted 2021-2029 Housing Element. Website: https://avcity.org/DocumentCenter/View/393/Housing-Element-PDF. Accessed January 21, 2025.

Additionally, the proposed project would not indirectly induce substantial unplanned population growth through the extension of roads or other infrastructure, as the project site and surrounding area are currently served by adjacent roadways and utilities infrastructure. Therefore, the proposed project would not induce unplanned population growth either directly or indirectly, and impacts would be less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No impact. There are no existing residences on-site, which precludes the possibility that the proposed project would displace people or housing. As such, no impact would occur.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.15 Public Services *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

Environmental Evaluation

Setting

The information in this section is based, in part, on correspondence with City of Aliso Viejo public service providers, included as Appendix H of this report. Correspondence consisted of responses to an inquiry sent via email to public service providers on December 16, 2024. Responses were provided to FCS between December 17, 2024, and January 14, 2025.

Fire

The City falls under the jurisdiction of OCFA, which provides services to 23 of Orange County's 34 cities and all unincorporated areas of the county. OCFA's services include emergency responses to 911 calls, fire inspections, plan review, public information and education, and arson investigation.

OCFA Fire Station 57 is located at 57 Journey, which is 2 miles south of the project site. It employs five firefighters and two paramedics and operates 24 hours a day, 7 days a week. OCFA Fire Station 57 also serves as a Division Headquarters, housing the local fire chief, administrative staff, and community educator. Division Chief Mike Summers serves as the Fire Chief for the City.[72]

[72] City of Aliso Viejo. 2025. Fire Authority. Website: https://avcity.org/198/Fire-Authority. Accessed January 27, 2025.

Police

The City contracts with the Orange County Sheriff's Department (OCSD) for its law enforcement needs. OCSD–Aliso Viejo Station is located at 11 Journey, which is 2.4 miles south of the project site. The staff dedicated to the City includes one Crime Prevention Specialist, one Emergency Management Coordinator, 17.65 Deputies (Patrol, Traffic Motor, School Resource Officer, Special Enforcement Team and Directed Enforcement Team), two Community Service Officers, 1.5 Investigators, and 2.33 Sergeants. The partial numbers are staff whose duties are split among other cities. There are 15 specialized units that can be contacted to provide service to the City when needed. They include units such as Canine, Gang Enforcement, Homicide Detail, and more.[73]

Schools

The project site falls within the Capistrano Unified School District (CUSD). During the 2023–2024 school year, the CUSD enrolled 48,326 students.[74] CUSD serves the City of San Juan Capistrano, City of Dana Point, City of Laguna Niguel, and the City of San Clemente, as well as a portion of the City of Aliso Viejo, City of Mission Viejo, City of Rancho Santa Margarita, and a very small portion of the Cities of Laguna Beach and Laguna Woods and a portion of unincorporated Orange County.[75] The proposed project is within the service area of Oak Grove Elementary School (584 students), Aliso Viejo Middle School (799 students), and Aliso Niguel High School (2,608 students).[76] During the 2023–2024 school year, Oak Grove Elementary School enrolled 584 students, Aliso Viejo Middle School enrolled 799 students, and Aliso Niguel High School enrolled 2,608 students.[77]

Level 1 Developer Fees are established by the State and are considered a basic mitigation fee that all residential and commercial projects must pay. In January 2024, the State Allocation Board approved the Level 1 Developer Fee of $5.17 per square foot of residential development.[78]

Parks

The City of Aliso Viejo Recreation & Community Services department owns and manages Vista Park and Iglesia Park, which are a total of 7.4 acres. Additionally, Aliso Viejo Community Association

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[73] City of Aliso Viejo. 2025. Police Services. Website: https://avcity.org/212/Police-Services. Accessed January 27, 2025.

[74] California Department of Education Data Reporting Office. 2024. Capistrano Unified Report (30-66464). Website: https://dq.cde.ca.gov/dataquest/dqcensus/enrgrdlevels.aspx?agglevel=District&year=2023-24&cds=3066464. Accessed January 28, 2025.

[75] King Consulting. 2024. Developer Fee Justification Study, Capistrano Unified School District. Website: https://www.capousd.org/documents/Developer%20Fees/Residential-and-Commercial-Industrial-Fee-Study-May-2024-Res.-2324-30.pdf. Accessed January 28, 2025.

[76] Ibid.

[77] California Department of Education Data Reporting Office. 2024. Capistrano Unified Report (30-66464). Website: https://dq.cde.ca.gov/dataquest/dqcensus/enrgrdlevels.aspx?agglevel=District&year=2023-24&cds=3066464. Accessed January 28, 2025.

[78] King Consulting. 2024. Developer Fee Justification Study, Capistrano Unified School District. Website: https://www.capousd.org/documents/Developer%20Fees/Residential-and-Commercial-Industrial-Fee-Study-May-2024-Res.-2324-30.pdf. Accessed January 28, 2025.

(AVCA) is responsible for an estimated 179 acres of parkland.[79] The closest park is Glenwood Community Park, located 0.07 mile north of the project site, across Glenwood Drive. Glenwood Community Park is a private park owned and managed by the Glenwood Park neighborhood homeowners' association.[80] Crosswalks and traffic lights are available on Glenwood Drive, allowing for pedestrian access to Glenwood Community Park. The second two closest parks are Pinewood Park and Argonaut Park. Pinewood Park is less than 0.1 mile away in a straight line, but with no accessible pathways through the landscaping and hillsides, residents of the proposed project would need to travel around 0.4 mile on sidewalks along major roadways.

Libraries

Orange County provides a range of public libraries, cultural facilities, and recreation services. The nearest Orange County Public Library branch to the project site is the Laguna Woods Branch, located at 24266 El Toro Road in the City of Laguna Woods, approximately 1.07 miles north of the project site. Additionally, the Aliso Viejo Branch is located at 1 Journey, approximately 1.65 miles south of the project site. Orange County Public Libraries provides library services to the City of Aliso Viejo through its system-wide network of 32 branches across the county. Aliso Viejo residents have access to all services as membership is not specific to individual branches; as such, residents of the City have access to resources and services throughout the entire Orange County Public Library system. The Aliso Vejo branch is currently closed for renovations but is expected to reopen in 2025. The most current tenant projections are from 2023, during which the Aliso Viejo Branch had 140,931 visitors, with an average daily attendance of 470 people.

Upon reopening, the Aliso Viejo Branch is expecting an increase of usage as the redesign will add more amenities, such as quiet study rooms, more electricity, seating available throughout the branch, and a new program room for events.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?

Less than significant impact. According to Deputy Fire Marshal Eric Evans of Planning and Development, OCFA has the ability to provide fire protection services to the project site and the proposed project will require an OCFA Secured Fire Protection Agreement.[81]

[79] Weaver, Chris. Director of Parks & Landscape, Aliso Viejo Community Association. Personal communication: email. December 18, 2024.

[80] Play Parks Creative LLC. 2024. Glenwood Community Park (PRIVATE). Website: https://funorangecountyparks.com/glenwood-community-park-aliso-viejo.html. Accessed January 21, 2025.

[81] Evans, Eric. Deputy Fire Marshal, Orange County Fire Authority. Personal communication: email, January 14, 2025.

Additionally, the proposed project would be required to pay the applicable OCFA planning and development fees.[82] A total of three new fire hydrants would be installed on eastern, western and southern portions of the project site and would connect to existing water lines.

As discussed in Section 4.14, Population and Housing, the proposed project would generate 155 new residents. Fire protection and emergency service by the OCFA are currently provided to the area under existing conditions.

As discussed in Section 4.14, Population and Housing, the population growth resulting from the proposed project is consistent with SCAG's growth projections, and the 155 new residents would be considered planned growth that would be addressed with existing facilities. Therefore, the proposed project would not create a need for new or physically altered fire facilities to maintain acceptable service ratios, response times, or other performance objectives.

Furthermore, the proposed project would be required to comply with the California Fire Code, as amended, in accordance with Municipal Code Chapter 13.04, 2022 Edition of the California Fire Code, and would be subject to approval by OCFA. Adherence with fire code standards and approval by OCFA would reduce the potential demand for fire services by decreasing the likelihood and/or severity of a fire emergency at the project site. Implementation of City requirements, including compliance with the California Fire Code and approval of site plans by OCFA, as well as payment of planning and development fees, would ensure that there would be no substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities for fire protection services. As such, impacts would be less than significant.

b) Police protection?

Less than significant impact. OCSD did not respond to emails sent in December 2024 and January 2025 requesting information on expected impacts to police services as a result of the proposed project.

As described above, the proposed project would include the construction of a residential development that consists of 61 townhomes on the approximately 2.85-acre project site ranging from 1,200 to 1,800 square feet in size. Police protection services to the project site occurs under the existing conditions. While the proposed project would generate an estimated 155 residents, this would be considered planned growth, as discussed in Section 2.14, Population and Housing.

Because the proposed project would not induce substantial unplanned population growth, it is anticipated that the proposed project would be adequately served by OCSD and would not create a need for new or physically altered police facilities to maintain acceptable service ratios, response times, or other performance objectives. The proposed project would also be required to comply with the City's Crime Prevention Through Environmental Design (CPTED) requirements in accordance

[82] Orange County Fire Authority (OCFA) Planning and Development Services. 2024. 2024-25 Community Risk Reduction Fee Study. Website: https://ocfa.org/Uploads/CommunityRiskReduction/OCFA%202024-25%20Fee%20Schedule%20-%20Planning%20and%20Development.pdf. Accessed March 13, 2025.

with Municipal Code Section 15.50.020. OCSD would review the project plans to ensure the proposed project adheres to all applicable security requirements prior to issuing the building permit. Implementation of City requirements and approval of site plans by OCSD would further reduce potential impacts concerning police protection services. As such, impacts would be less than significant.

c) Schools?

Less than significant impact.

The schools that would serve the proposed project would be Oak Grove Elementary (Transitional Kindergarten [TK] through Grade 5), Aliso Viejo Middle School (Grades 6 through 8), and Aliso Niguel High School (Grades 9 through 12). The estimate of the current standard student generation factors for elementary, middle, and high school students used by the CUSD showed that as a result of the proposed project, Oak Grove Elementary would expect an additional 13 students, Aliso Viejo Middle school would expect an additional four students, and Aliso Niguel High School would expect an additional five students, for a total of 23 new students. CUSD shows no concerns about the potential growth associated with the housing development and states that the school district can accommodate the number of projected students.[83]

The 2024 Developer Fee Justification Study conducted by CUSD concluded that while there is capacity for students in grades TK through grade five, student capacity at the CUSD is currently exceeded for grades 6 through 12.[84] The proposed project would be subject to payment of school impact fees in accordance with SB 50. Pursuant to Government Code Section 65995(3)(h), payment of statutory fees is deemed to be "full and complete mitigation of impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use or development of real property . . ." The developer would be required to pay Level 1 Developer Fees in accordance with Government Code Section 65995(3)(h). Developer fees collected by CUSD pursuant to SB 50 are used for the provision of additional and reconstructed or modernized school facilities. The project applicant would be required to pay all statutory fees in place at the time and demonstrate proof of payment to the City for approval of a building permit. With payment of the Level 1 Developer Fees, CUSD would be able to accommodate the additional students generated by the proposed project, and potential impacts to schools would be less than significant.

d) Parks?

Less than significant impact. The proposed project would develop up to 61 dwelling units, which would generate an estimated 155 new residents (See Section 2.14, Population and Housing). The

[83] Hampton, Clark D. Deputy Superintendent, Business and Support Services, Capistrano Unified School District. Personal communication: email, December 17, 2024.

[84] King Consulting. 2024. Developer Fee Justification Study, Capistrano Unified School District. Website: https://www.capousd.org/documents/Developer%20Fees/Residential-and-Commercial-Industrial-Fee-Study-May-2024-Res.-2324-30.pdf. Accessed January 28, 2025.

new residents would increase the demand on existing neighborhood and regional parks. The additional use would further contribute to the need for maintenance and improvements.

The proposed project includes a total of 40,259.9 square feet of open space, which includes 5,587 square feet of on-site recreational amenities to residents that would partially offset impacts to parks facilities. These recreational amenities would include walkways, gathering spaces with electric barbeques, an open lawn area for free-play, and a tot lot (See Exhibit 6). According to Municipal Code Section 14.16.050, the City has a park ratio goal of five acres of parkland for every 1,000 persons. Therefore, the proposed project would need to dedicate 0.755 acre, or 32,888 square feet, of parkland to the City for its 155 new residents. The proposed project would provide approximately 17 percent of the required parkland. However, the applicant would comply with Municipal Code Chapter 14.16, which requires developers to dedicate land for park facilities or pay park and recreation impact fees to offset incremental demand on local parks. By providing on-site recreational amenities that exceed the required minimum open space and paying applicable park development fees, the proposed project would ensure that the incremental increase in recreational demand would not result in substantial physical deterioration of existing neighborhood and regional parks.

Although project residents would likely use public parks, implementation of the proposed project would not require new or physically altered park facilities, the construction of which could cause significant environmental impacts. Therefore, impacts would be less than significant.

e) Other public facilities?

Less than significant impact. A service letter was sent out to the Orange County Public Libraries Administration about expected impacts from the proposed project on December 16, 2024, and they responded on December 20, 2024. The library anticipates that the proposed project's anticipated population generation would utilize library services and that the increase in visitors would not have a significant impact on the library or its services.[85] Additionally, the Aliso Viejo Branch Library is currently undergoing redesign that would allow it to accommodate more visitors that would be added from the proposed project's additional residential population. Although the proposed project would increase demand for library services, the anticipated growth generated by the proposed project would be within the population growth projections anticipated and planned for by local and regional planning documents. The proposed project's impacts to the overall availability per capita of books, media, computers, and library public service space would not result in significant physical or environmental impacts, as the population growth resulting from the proposed project is within current City projections. Therefore, impacts would be less than significant.

Mitigation Measures

None required.

[85] Oakley, Julie. Library Administration, Orange County Public Libraries. Personal communication: email. December 20, 2024.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.16 Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Environmental Evaluation

Setting

As previously discussed in Section 2.15, Public Services, the closest park is Glenwood Community Park, located 0.07 mile north of the project site, across Glenwood Drive. Glenwood Community Park is a private park owned and managed by the Glenwood Park neighborhood homeowners' association.[86] Crosswalks and traffic lights are available on Glenwood Drive, allowing for pedestrian access to Glenwood Community Park. The second two closest parks are Pinewood Park and Argonaut Park. Pinewood Park is less than 0.1 mile away in a straight line, but with no accessible pathways through the landscaping and hillsides, residents of the proposed project would need to travel around 0.4 mile on sidewalks along major roadways. These parks provide public amenities such as picnic tables, barbecues, playgrounds, and basketball courts.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than significant impact. The proposed project would consist of approximately 61 3-story townhomes. The City has an estimated population of 50,068 persons as of January 1, 2024. As discussed previously in Section 2.14, Population and Housing, given the proposed project would develop up to 61 dwelling units, the proposed project would generate up to 155 new residents, which

[86] Play Parks Creative LLC. 2024. Glenwood Community Park (PRIVATE). Website: https://funorangecountyparks.com/glenwood-community-park-aliso-viejo.html. Accessed January 21, 2025.

would increase the demand on existing neighborhood and regional parks. The additional use would further contribute to the need for maintenance and improvements.

The City's Municipal Code requires open space equal to 25 percent of the total site area (30,819 square feet). The proposed project includes a total of 40,259.9 square feet of open space, exceeding the City's required minimum of 30,819 square feet for a project of this size. The proposed project would exceed the required minimum amount of open space. The proposed project would include 5,587.4 square feet of usable open space and 34,672.5 square feet of other type of open space. This open space includes decorative walkways, gathering spaces with electric barbeques, open lawn area for free-play, and a tot lot (See Exhibit 6). It is expected that these on-site recreational amenities would reduce the demand on neighborhood and regional parks and recreation facilities, reducing the proposed project's contribution to the deterioration of existing parks and recreational facilities.

As previously discussed, the proposed project is expected to add 155 persons to the current City population. As such, the proposed project would need to supply approximately 0.775-acres of parkland to meet the standard of 5 acres per 1,000 residents. To address the incremental increase in demand associated with the proposed project, the applicant would comply with Chapter 14.16 of the Aliso Viejo Municipal Code, which requires developers to dedicate land for park facilities or pay park and recreation impact fees. By providing on-site recreational amenities that exceed the required minimum open space and paying applicable park development fees, the proposed project would ensure that the incremental increase in recreational demand would not result in substantial physical deterioration of existing neighborhood and regional parks. Therefore, impacts would be less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Less than significant impact. The proposed project would include 5,587.4 square feet of usable open space and 34,672.5 square feet of other type of open space. Additionally, the proposed project design includes amenities such as decorative walkways, gathering spaces with electric barbeques, open lawn area for free-play, and a tot lot.

The potential environmental effects associated with construction of the proposed Project, including the proposed amenities have been analyzed throughout this Initial Study, and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. It is expected that these on-site recreational amenities would reduce the demand on neighborhood and regional parks and recreation facilities, reducing the proposed project's contribution to the deterioration of existing parks and recreational facilities. In addition, the project applicant would be required to pay all public benefits fees, which would offset impacts to parks and recreation facilities. Impacts would be less than significant in this regard.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.17 Transportation *Would the project:*				
a) Conflict with a program plan, ordinance or policy of the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Environmental Evaluation

Setting

This section is based, in part, on the Argonaut Residential Trip Generation Assessment and the Argonaut Residential Vehicle Miles Traveled (VMT) Screening Evaluation, prepared by Urban Crossroads on June 4, 2025, and included as Appendix I of this report.

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less than significant impact.

Transit Facilities

Public transportation services within the project site and surrounding area are provided by Orange County Transportation Authority (OCTA). Bus Route 90 provides service from Tustin to Dana Point via Moulton Parkway; a bus stop is located near the intersection of Moulton Parkway and Glenwood Drive. The nearest bus stop is the Moulton-Glenwood bus stop, located along the Moulton Parkway, 0.8 mile east of the project site. There are no existing or planned transit facilities adjacent to the

project site. Project implementation would not conflict with a program plan, ordinance, or policy addressing transit facilities.

Roadway Facilities

Vehicular access to the project site is currently provided from a driveway along the southern boundary of the project site. Vehicles would access the project site via a proposed driveway at the south of the project site along Argonaut. An internal private roadway system would provide two-way access to each unit's parking garage as well as to guest parking spaces that would be distributed throughout the site. Roadway facilities would continue to serve the project site and surrounding development. The proposed project would not involve modifications to any roadways and, thus, would not conflict with a program, plan, ordinance, or policy addressing roadway facilities.

Bicycle Facilities

The Aliso Viejo General Plan Circulation Element (Figure C-2) identifies existing bicycle facilities within the City.[87] According to the General Plan Circulation Element and the OCTA 2009 Commuter Bikeways Strategic Plan, Class II[88] on-road bicycle lanes currently exist along both sides of Glenwood Drive. Additionally, Aliso Creek Road and Moulton Parkway have Class II on-road bicycle lanes.[89] There are no planned bicycle facilities near the project site.[90] The proposed project would not involve modifications to any of these roadways or bicycle lanes and, thus, would not conflict with a program, plan, ordinance, or policy addressing bicycle facilities.

Pedestrian Facilities

Pedestrian facilities, including crosswalks, sidewalks, and traffic lights are currently available along both sides of Glenwood Drive north of the project site and along both sides of Argonaut south and west of the project site. Signalized crosswalks are available at the intersection of Glenwood Drive and Argonaut adjacent to the northwest corner of the project site. Non-signalized crosswalks are available at the intersection of Argonaut located southwest of the project site. Pedestrians would circulate within the site via proposed internal pedestrian walkways and concrete sidewalks. The proposed internal pedestrian walkways and sidewalks would connect to the existing sidewalks along Argonaut via the proposed driveway on the south side of the project site.

The proposed project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, or pedestrian facilities. Therefore, impacts would be less than significant.

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87 City of Aliso Viejo. 2004. General Plan Circulation Element, Figure C-2, Bikeways.

88 Class II bikeways are defined as on-road striped and signed bicycle lanes.

89 Alta Planning + Design, KOA Corporation. 2009. Final 2009 OCTA Commuter Bikeways Strategic Plan for the Orange County Transportation Authority. Map 1-1. Website: https://www.octa.net/pdf/bikeways09.pdf. Accessed February 18, 2025.

90 Orange County Transportation Authority (OCTA). 2025. Bikeways Planning, Orange County Bikeways Map. Website: https://www.octa.net/getting-around/active/oc-bike/bikeways-planning/overview/. Accessed February 18, 2025.

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Less than significant impact. VMT is a measurement of miles traveled by vehicles within a specified region and for a specified period of time. VMT is a measure of the use and efficiency of the transportation network and is calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round-trip) travel and is often estimated for a typical weekday for the purposes of measuring transportation impacts.

In September 2013, SB 743 was signed into law, which fundamentally changed transportation impact analysis as part of CEQA compliance. These changes include the elimination of auto delay, Level of Service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant traffic impacts. SB 743 identifies VMT as the most appropriate CEQA transportation metric. The justification for this paradigm shift is that LOS impacts lead to improvements that increase roadway capacity and, thus, induce more traffic and GHG emissions.

In May 2020, the City adopted its Aliso Viejo Transportation Impact Guidelines for CEQA and General Plan Consistency (AVTIG), which serves as the City's transportation analysis guidelines. The AVTIG includes screening criteria that are intended to provide a simplified way to determine whether a project's VMT would be expected to cause a less than significant CEQA transportation impact without having to conduct a detailed VMT analysis. Below is a discussion of the various screening criteria outlined in the AVTIG and an analysis of whether the proposed project would be "screened" from requiring a detailed VMT analysis, either in its entirety or partially based on individual land uses.

City Guidelines outline appropriate screening criteria for identifying when a proposed land use project is expected to have a less than significant impact, thus avoiding the need for a more detailed analysis. The screening criteria are divided into the following:

- Step 1: Transit Priority Areas (TPA) Screening
- Step 2: Low VMT Area Screening
- Step 3: Project Type Screening

A land use project needs only to meet one of the above screening criteria to result in a less than significant impact.

Consistent with guidance identified in the City Guidelines, projects located within a TPA or High-quality Transit Area (HQTA) (i.e., within 0.5 mile of an existing "major transit stop" or an existing stop along a "high-quality transit corridor") may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, consistent with City Guidelines, Aliso Viejo does not have any TPAs within the City. Therefore, the Step 1: TPA screening criteria is not met.

The proposed project is not located within a low VMT-generating area and would not qualify for Step 2: Low VMT Area screening criteria.

The City Guidelines state that local-serving uses such as day care centers, non-destination hotels, affordable housing, places of worship, municipal services, and other local essential services may be presumed to have a less than significant impact as local-serving in nature and would tend to shorten vehicle trips. The proposed project does not include any local-serving uses. However, the City Guidelines also consider small projects that generate fewer than 110 net new daily vehicle trips to have a less than significant VMT impact. The Argonaut Residential Trip Generation Assessment (Appendix I) estimates the proposed project to generate a net increase of 79 daily vehicle trips, which does not exceed the 110 daily vehicle trip threshold. Therefore, Step 3: Project Type screening criteria is met.

Based on the City's VMT screening types, the proposed project meets the Project Type screening criteria and is therefore considered to have a less than significant VMT impact. No additional VMT analysis is required, and impacts would be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than significant impact. The proposed project would not provide any off-site roadway improvements that could substantially increase hazards due to a design feature. No changes are proposed to existing roadways. On-site circulation would be 24 feet wide to allow for emergency access in compliance with OCFA requirements (Exhibit 5).

As part of the City's Site Development Permit process required under Municipal Code Section 15.74.020, Site Development Permits, the proposed project would be reviewed and only approved after finding the proposed development conforms with applicable requirements and standards set forth in the Municipal Code and General Plan, including the Circulation Element. The proposed project is designed to be consistent with existing residential land uses designated Very High Density Residential to the north of the project site. Additionally, the site already supports pedestrian activity associated with the proposed residential uses, including crosswalks and sidewalks available along both sides of Glenwood Drive north of the project site and along both sides of Argonaut south and west of the project site.

It would also be designed such that all driveway and ingress/egress would have sufficient line of sight that would not be impeded by landscaping, signage, or other obstructions. Furthermore, the proposed project is an urban use in an urbanized area, and would not introduce incompatible uses such as farm equipment. The proposed project is subject to the design review requirements set forth in Municipal Code 15.62.050 to further ensure that safe line of sight would be maintained and the proposed project would not create traffic hazards. Therefore, impacts would be less than significant.

d) Result in inadequate emergency access?

Less than significant impact. As discussed in Impact 2.9(f), the City has developed an EOP outlining the City's response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The EOP establishes evacuation routes. Additionally, the General Plan Safety Element identifies evacuation routes in the City. Within the

vicinity of the project site, Aliso Creek Road and Glenwood Drive are identified as primary evacuation routes.[91]

The project site is within Zone 20 of Aliso Viejo's Evacuation Zones. Designated evacuation zones within Zone 20 include Glenwood Drive, Aliso Creek Road, Aliso Viejo Parkway, and Moulton Parkway.[92] The project site is adjacent to Glenwood Drive, and construction would not require closure or partial closure of Glenwood Drive. The proposed project would be constructed completely within the project site and construction equipment would access the project site via Argonaut, which is the main access point to the project site. If any road closures to Argonaut are required, the project applicant and construction crew would be required to coordinate with the City of Aliso Viejo Public Works Department to ensure that emergency access routes are maintained during construction. Thus, construction of the proposed project would not impede the use of surrounding roadways for emergencies or access for emergency response vehicles.

The proposed project would provide internal circulation for emergency vehicle access. The proposed project has been designed to provide emergency service providers access to the site from any of the public streets or the drive aisles. The 24-foot private drive meets OCFA turnaround and access requirements (See Exhibit 5). The design of the proposed project would provide adequate emergency access consistent with City requirements, including the required number and design of access points and safety features. Therefore, the proposed project would not result in significant impacts to emergency access during construction and/or operation. The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Mitigation Measures

None required.

[91] City of Aliso Viejo. 2004. General Plan, Figure S-1 Safety Policy Map. Website: https://avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed December 3, 2024.

[92] City of Aliso Viejo. 2024. Citywide Evacuation Zones. Website: https://avcity.org/DocumentCenter/View/3750. Accessed January 21, 2025.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.18 Tribal Cultural Resources *Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

Environmental Evaluation

Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

Less than significant with mitigation incorporated. A review of the CRHR, local registers of historic resources, a records search conducted at the SCCIC, and a pedestrian survey failed to identify any listed TCRs that may be adversely affected by the proposed project. However, the NAHC SLF results were positive for TCRs in the project site, and subsequent outreach to Tribal representatives and a response from the Juaneño Band of Mission Indians, Acjachemen Nation indicated that the proposed project is in a sensitive area that is located in the Tribe's territory with

known burial sites near the project site. As such, no eligible or potentially eligible TCRs will adversely be affected by the proposed project. Should any undiscovered TCRs be encountered during project construction, implementation of MM TCR-1 through MM TCR-3 will ensure that potential impacts to TCRs will be reduced to a level of less than significant.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Less than significant with mitigation incorporated. Tribal consultation efforts conducted by the City of Aliso Viejo pursuant to SB 18 and Assembly Bill (AB) 52 to identify additional significant TCRs meeting the criteria set forth in subdivision(c) of Public Resources Code Section 5024.1 were initiated on May 28, 2025, and consultation letters were sent to the Tribes on the NAHC consultation list. The Gabrieleño Band of Mission Indians–Kizh Nation responded on June 2, 2025, and formally requested consultation with the City. The Kizh Nation has ancestral and cultural ties to the project site and seeks to protect and preserve TCRs, sacred sites, and traditional places within the Tribe's traditional territory. A consultation meeting was scheduled for July 17, 2025; however, due to unforeseen circumstances the meeting was cancelled on July 16, 2025, and Kizh Nation offered to provide consultation via email, but no email correspondence was received from the Tribe. On June 30, 2025 the City consulted with the Juaneño Band of Mission Indians Acjachemen Nation. The City emailed draft mitigation measures on August 18, 2025, for review to both consulting Tribes. A response was received on August 18, 2025, from the Kizh Nation providing the City with their standard mitigation measures. The Acjachemen Nation responded on August 21, 2025, indicating that the Tribe agrees with the City's draft mitigation measures. On August 25, 2025, the City emailed the revised mitigation measures with redlines to the Kizh Nation and requested a response by September 1, 2025. The Tribe responded on August 25, 2025, to address the revisions that were made to the mitigation measures, and a consultation meeting was scheduled for August 27, 2025, via a phone call, and a summary of that meeting was provided in a letter via email. The City addressed the concerns the Kizh Nation had with regard to the proposed mitigation measures on September 15, 2025; however, no response was received from the Tribe. On September 25, 2025, the City sent another email to the Kizh Nation expressing appreciation for their participation in the consultation process, thereby concluding the consultation.

Should any undiscovered TCRs be encountered during project construction, implementation of MM TCR-1 through MM TCR-3 will ensure that potential impacts to TCRs will be reduced to a level of less than significant.

Mitigation Measures

MM TCR-1 Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities

The project applicant shall retain a Native American Monitor from or approved by both the Gabrieleño Band of Mission Indians – Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation. The Monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

A copy of the executed monitoring agreement shall be submitted to the Director of Community Development prior to the earlier date of either: (1) the commencement of any ground-disturbing activity, or (2) the issuance of any permit required to commence any ground-disturbing activity.

The Monitor shall complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribes. Monitor logs shall identify and describe any discovered Tribal Cultural Resources (TCRs), including, but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, Tribal Cultural Resources, or TCRs), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of Monitor logs shall be provided to the project applicant and the Director of Community Development upon written request to the Tribe.

On-site Tribal monitoring shall conclude upon the latter of the following: (1) written confirmation to the Monitor and the Lead Agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Monitor to the Director of Community Development that no future planned construction activity and/or development/construction phase at the project site possesses the potential to impact to TCRs.

MM TCR-2 Unanticipated Discovery of Tribal Cultural Resource Objects (Non-funerary/Non-ceremonial)

Upon discovery of any Tribal Cultural Resources (TCRs), all construction activities in the immediate vicinity of the discovery (i.e., not less than the surrounding 50 feet)

shall cease. The City shall consult with the project Archaeologist and initiate Native American consultation procedures with the project's consulting Tribes (Gabrieleño Band of Mission Indians-Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation). The consultation effort is intended to be a meaningful and timely process of seeking, discussing, and considering carefully the views of others in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement on the appropriate treatment and disposition of TCRs discovered. A Cultural Resources and Monitoring and Treatment Plan shall be created by the Archaeologist in coordination with the consulting Tribes (Gabrieleño Band of Mission Indians-Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation) and all subsequent finds shall be subject to this plan. Project construction shall not resume within the immediate vicinity of the discovery (i.e., not less than the surrounding 50 feet) until a Cultural Resources and Monitoring Treatment Plan is prepared and implemented. The plan may include, but would not be limited to, reburying, relocating, recording, and/or another culturally appropriate treatment. If it is determined that mutual agreement cannot be reached within 30 days of the initial consultation meeting, the TCR(s) under review shall be reinterred on-site in a location free from future ground-disturbing construction activities. This measure does not apply to the finding of human remains, which must comply with California Health and Safety Code Section 7050.5.

MM TCR-3 Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects

A. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.
B. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource Code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed.
C. Human remains and grave/burial goods shall be treated alike per California Public Resources Code Section 5097.98(d)(1) and (2).
D. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods.
E. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.19 Utilities and Service Systems *Would the project:*				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Evaluation

Setting

According to the City's 2020 Urban Water Management Plan (UWMP), MNWD relies on a combination of imported water and recycled water. The District's potable water demands are supplied from imported sources via the Metropolitan Water District of Southern California (MWD) through the Municipal Water District of Orange County (MWDOC).

Imported water represents approximately 79 percent of MNWD's total water supply. MWD's water supply originates from two principal sources–the Colorado River via the Colorado River Aqueduct and the Feather River Watershed/Lake Oroville in Northern California through the State Water Project (SWP). Recycled water provides 21 percent of the district's water supplies and is produced at one of two local treatment plants.[93]

The MNWD is responsible for maintenance of the City's sewer and storm drain lines. Wastewater is collected via the MNWD's wastewater collection system and sent to the Regional Treatment Plant operated by SOCWA.

Telecommunication services would be provided by AT&T and Cox Communications.

Individual trash service will be provided through CR&R Incorporated, with collection occurring on a weekly basis. Waste from the City is disposed of at a number of solid waste facilities, with the majority of waste disposed at the Prima Deshecha Sanitary Landfill.[94]

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than significant impact.

Water

The proposed project would connect to an existing 10-inch domestic water line within Argonaut and would extend an existing 8-inch line into the site through the internal drive aisles. An existing 6-inch domestic water line that serves the existing office building would be capped. The proposed project would be served by the MNWD.

MNWD has completed a preliminary review of the proposed project and indicates there is available water supply to support the proposed project; however, additional information is needed to confirm whether water system upgrades/upsizing is required.[95] As a condition of approval, the project applicant would be required to comply with MNWD review and permitting requirements. Any potential improvements would occur on-site and/or within the project vicinity that has previously been

[93] Moulton Niguel Water District. 2021 (MNWD). 2020 Urban Water Management Plan. Website: https://www.mnwd.com/wp-content/uploads/2021/12/2020-Urban-Water-Management-Plan.pdf. Accessed December 12, 2024.

[94] California Department of Resources Recycling and Recovery (CalRecycle). 2025. RDRS Report 2: Jurisdiction Disposal and Beneficial Reuse by Destination. Website: https://www2.calrecycle.ca.gov/RecyclingDisposalReporting/Reports/JurisdictionDisposalAndBeneficial. Accessed January 28, 2025.

[95] Moulton Niguel Water District, Mark H. Mountford, P.E., Engineering Manager. Personal correspondence: letter. October 16, 2024

disturbed. The potential environmental effects associated with construction and operation of the proposed project, including the proposed water lines to serve the residential units are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. Thus, the proposed project would not require or result in relocation or construction of water facilities, the construction or relocation of which could cause significant environmental effects.

Impacts would be less than significant.

Wastewater

Wastewater is collected via the MNWD's wastewater collection system and sent to the Regional Treatment Plant operated by SOCWA. The project site has existing wastewater infrastructure associated with the office building. The proposed project would include the installation of an 8-inch system within the project site that would connect to an existing 8-inch sewer line in Argonaut. MNWD has performed a preliminary review of the proposed project and indicates there is available sewer capacity to support the proposed project. As a condition of approval, the project applicant would be required to comply with MNWD review and permitting requirements. Any potential improvements would occur on-site and/or within the project area that has previously been disturbed. The potential environmental effects associated with construction and operation of the proposed project, including the proposed sewer lines to serve the residential units are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. Thus, the proposed project would not require or result in relocation or construction of wastewater facilities, the construction or relocation of which could cause significant environmental effects.

Stormwater

The potential environmental effects associated with construction and operation of the proposed project, including the proposed stormwater facilities to serve the residential units are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. As such, impacts would be less than significant.

Electric Power and Natural Gas

The project site is currently served by electrical and gas infrastructure associated with the existing office building. The proposed project would be all electric and would not require natural gas or natural gas infrastructure. The proposed project would connect to existing electrical infrastructure.. The proposed project would be served by two new transformers. Electrical service is currently available in the project area and would be provided by SCE. Electricity would connect to existing lines running within Argonaut through a proposed joint trench within the project site and would be served by SCE. The proposed transformers would connect to the existing underground utility lines and would not cause significant environmental effects. SCE has conducted a preliminary review of the proposed

project and provided a will serve letter.[96] As a condition of approval, the project applicant would be required to comply with SCE review and permitting requirements. Any potential improvements would occur on-site and/or within the project area that has previously been disturbed. The potential environmental effects associated with construction and operation of the proposed project, including the proposed transformers, to serve the residential units are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory requirements and implementation of mitigation measures. Thus, the proposed project would not require or result in relocation or construction of electric power facilities, the construction or relocation of which could cause significant environmental effects. Impacts associated with the proposed project's electricity demand are discussed in Section 2.6, Energy.

Telecommunications

The project site is currently fully developed and served by telecommunications infrastructure. The proposed project would connect to the existing telecommunications infrastructure. Therefore, the proposed project would not require the installation or development of new or improved telecommunications facilities such that environmental impacts would occur. Impacts would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than significant impact. The 2020 UWMP includes a supply and demand assessment for projected years between 2025 and 2045 for normal year, single-dry year, and multi-dry year scenarios. Table 13, below, shows the multiple dry year supply and demand comparison through 2045.

Table 13: Multiple Dry Year Supply and Demand Comparison (AFY)

		2025	2030	2035	2040	2045
First year	Supply totals	33,435	33,111	32,934	32,790	32,588
	Demand totals	33,435	33,111	32,934	32,790	32,588
	Difference	0	0	0	0	0
Second year	Supply totals	33,419	33,124	32,953	32,797	32,636
	Demand totals	33,419	33,124	32,953	32,797	32,636
	Difference	0	0	0	0	0

[96] Southern California Edison, Kristine Newcomb, SCE Design Representative, letter dated October 22, 2024

		2025	2030	2035	2040	2045
Third year	**Supply totals**	31,969	31,714	31,556	31,396	31,280
	Demand totals	31,969	31,714	31,556	31,396	31,280
	Difference	0	0	0	0	0
Fourth year	**Supply totals**	31,906	31,680	31,529	31,357	31,280
	Demand totals	31,906	31,680	31,529	31,357	31,280
	Difference	0	0	0	0	0
Fifth year	**Supply totals**	31,844	31,646	31,501	31,319	31,280
	Demand totals	31,844	31,646	31,501	31,319	31,280
	Difference	0	0	0	0	0

Source: Moulton Niguel Water District (MNWD). 2021 (MNWD). 2020 Urban Water Management Plan. Website: https://www.mnwd.com/wp-content/uploads/2021/12/2020-Urban-Water-Management-Plan.pdf. Accessed December 12, 2024.

The demands are expected to be met through a combination of imported and recycled water. MNWD works together with two primary agencies, MWDOC and MWD, to ensure a safe and reliable water supply that would serve the community in periods of drought and shortage.[97] The UWMP accounts for projected water demand based on water consumption by single- and multi-family residences, commercial, and institutional/government customers.[98] The UWMP also accounts for projected land use, population, economic growth, and future conservation.[99] As noted in the UWMP and as shown in Table 13, the City would have sufficient water supplies for normal year, single dry year, and multiple years.

According to the California Department of Finance, the City has an average of 2.54 persons per household.[100] The proposed project would include the construction of up to 61 3-story townhomes, which would increase the City's population by up to 155 persons based on the average household size.[101] As discussed in Impact 2.14(b), this population growth is considered planned growth. MNWD's 2020 actual consumption was 121 gallons per capita per day (GPCD). For the estimated

[97] Moulton Niguel Water District (MNWD). 2021. 2020 Urban Water Management Plan. Website: https://www.mnwd.com/wp-content/uploads/2021/12/2020-Urban-Water-Management-Plan.pdf. Accessed December 12, 2024.

[98] Ibid.

[99] Moulton Niguel Water District (MNWD). 2021. 2020 Urban Water Management Plan. Website: https://www.mnwd.com/wp-content/uploads/2021/12/2020-Urban-Water-Management-Plan.pdf. Accessed December 12, 2024.

[100] California Department of Finance. 2024. Table 2: E-5 City/County Population and Housing Estimates, 1/1/2024. Website: https:// view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdof.ca.gov%2Fwp-content%2Fuploads%2Fsites%2F352%2FForecasting%2FDemographics%2FDocuments%2FE-5_2024_InternetVersion.xlsx&wdOrigin=BROWSELINK. Accessed December 6, 2024.

[101] 2.54 persons per household * 61 residential units = 154.94

155 residents under the proposed project, this would result in an estimated 18,747.74 gallons per day (GPD) or 21 AFY. As noted in the UWMP, the projected normal year water use in 2025 is 32,093 AFY for the entire MNWD service area.[102] The proposed project's demand would be approximately 0.07 percent of the total projected normal year 2025 demand. This does not include the existing uses on the project site and is therefore a conservative estimate. As noted in the UWMP, during the fifth year of the multiple dry year scenario, the projected water demand and supply would be 31,844 AFY. The proposed project's demand would be approximately 0.07 percent of the total projected fifth multiple dry year demand. Therefore, the small projected water use of the proposed project would be nominal, and water supplies would be sufficient to serve the proposed project. As such, the proposed project would not significantly impact water supplies. Impacts would be less than significant.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than significant impact. As discussed above, the proposed project would connect to existing sanitary sewer lines. The MNWD is responsible for the City's sewer lines. The MNWD collects and treats more than 10 million gallons of wastewater per day from residential and commercial customers throughout the district's service area. MNWD utilizes three different treatment plants to appropriately treat the wastewater, with two of those treatment plants equipped to produce recycled water. The 3A Treatment Plant in Mission Viejo is owned and operated by MNWD and has a capacity of 6 million GPD. The Regional Treatment Plant in Laguna Niguel is currently operated by a regional operator, SOCWA, but is also home to the largest recycled water facility that is owned and operated by the MNWD. Regional Treatment Plant has a capacity of 9.4 million GPD. Additionally, the J.B. Latham Treatment Plant in Dana Point, which is also operated by SOCWA, provides an additional facility for treatment of wastewater and has a capacity of 13 million GPD.[103] Any treated wastewater that cannot be utilized for irrigation purposes is then discharged to the ocean through one of two ocean outfalls, the Aliso Creek Ocean Outfall and the San Juan Creek Ocean Outfall. The MNWD works closely with SOCWA, as the regional permitting entity, and the appropriate regulatory agencies to ensure that all treated wastewater, whether used for irrigation purposes or discharged to the ocean, is compliant with all regulatory requirements.[104]

A Municipal Service Review was prepared for the Southwest Region of Orange County in 2023, which included a review of the MNWD.[105] The purpose of the review was in part to review and study future growth in the service area and to determine whether Southwest Region of Orange County can

[102] Moulton Niguel Water District (MNWD). 2021. 2020 Urban Water Management Plan. Website: https://www.mnwd.com/wp-content/uploads/2021/12/2020-Urban-Water-Management-Plan.pdf. Accessed December 12, 2024.

[103] Moulton Niguel Water District (MNWD). 2024.Wastewater Collection and Treatment. Website: https:// www.mnwd.com/wastewater-treatment/. Accessed December 12, 2024.

[104] Ibid.

[105] Orange County Local Agency Formation Commission (Orange County LAFCo). 2023. Municipal Service Review and Sphere of Influence Reviews. August 9. Website: https:// oclafco.org/wp-content/uploads/2024/01/OCLAFCO_Southwest_MSR_-_Final_8.28.23.pdf. Accessed December 12, 2024.

efficiently, equitably, and reliably provide services. The review determined that MNWD existing and planned operations and infrastructure can meet current and future service demands.[106] The proposed project would result in approximately 16,873 total gallons of wastewater per day, which is equivalent to 0.017 MGD.[107] This estimate does not consider the existing uses on the project site and is therefore a conservative estimate. Based on a total combined wastewater treatment capacity of 28.4 GPD of the 3a Treatment Plant, the Regional Treatment Plant, and the J.B. Latham Treatment Plant, the proposed project's wastewater generation would be approximately 0.06 percent of the total daily capacity, which is a nominal amount and would not exceed the wastewater treatment capacity. Therefore, MNWD would have adequate capacity to serve the wastewater demands of the proposed project, and impacts would be less than significant.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than significant impact. The project site currently generates solid waste from the existing office building. Construction and operational activities associated with the proposed project would generate solid waste requiring disposal. CR&R Incorporated is a private recycling and nonhazardous solid waste hauler and provides solid waste services to the City, including the project site.[108] CR&R Incorporated collects solid waste for all residential, commercial, and industrial waste and recycling services. Solid waste is disposed of in Orange County landfills.

Solid waste within the City is primarily disposed of at the Prima Deshecha Sanitary Landfill. Other sanitary landfills, including Chiquita Canyon, El Sobrante, Frank R. Bowerman, Simi Valley, and Olinda Alpha received relatively small amounts of solid waste from the City. The Prima Deshecha Landfill is the closest facility to the City and would likely be the solid waste facility most often receiving waste from the project site.[109] According to the CalRecycle Solid Waste Information System (SWIS), the Prima Deshecha Landfill has a maximum daily capacity of 4,000 tons per day and a remaining capacity of 128,800,000 cubic yards. The facility's maximum permitted capacity is 172,100,000 cubic yards.[110]

CalRecycle provides a solid waste generation factor to estimate the amount of solid waste generated by residential projects. Using the generation rate of 12.23 pounds (lbs) per household per day for residential development, the proposed project would generate approximately 746.03 lbs per day of solid waste, or approximately 0.37 tons per day (based on 61 townhomes)—which represents less

[106] Orange County Local Agency Formation Commission (Orange County LAFCo). 2023. Municipal Service Review and Sphere of Influence Reviews. August 9. Website: https:// oclafco.org/wp-content/uploads/2024/01/OCLAFCO_Southwest_MSR_-_Final_8.28.23.pdf. Accessed December 12, 202.

[107] Based on the assumption that wastewater generated is approximately 90 percent of indoor water use.

[108] City of Aliso Viejo. 2025. Services. Website: https://avcity.org/101/Services. Accessed January 28, 2025.

[109] California Department of Resources Recycling and Recovery (CalRecycle). 2024. SWIS Facility/Site Activity Details. Website: https:// www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2750?siteID=2085. Accessed December 12, 2024.

[110] Ibid.

than 0.01 percent of the maximum daily capacity of the Prima Deshecha Sanitary Landfill. This estimate does not include the existing uses on the project site.

Therefore, the Prima Deshecha Landfill would have sufficient capacity to serve the proposed project and solid waste generated during construction and operations would represent a negligible increase compared to the daily permitted tonnage. The proposed project would also include recycling, reuse, and/or salvage programs to reduce solid waste and comply with all applicable regulations for solid waste. The impact would be less than significant, and no mitigation is required.

e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Less than significant impact. The City complies with all federal, State, and local statutes and regulations related to solid waste. Regulations specifically applicable to the proposed project include the California Integrated Waste Management Act of 1989 (AB 939), SB 2202, SB 1016, 2019 CALGreen Section 4.408, SB 1383, and AB 341, which requires multiple-family residential development and commercial uses to implement recycling programs.

In accordance with State law and Municipal Code Section 13.02, Building Regulations, which adopts CALGreen, the proposed project would be required to divert at least 65 percent of the nonhazardous construction and demolition debris from the project site by recycling, reuse, and/or salvage. In addition, Municipal Code Chapter 7.05, Solid Waste Disposal, addresses solid waste disposal, including recycling and organic waste. Compliance with the Municipal Code would achieve compliance with State law, including SB 1383.

The City has a per capita population disposal rate target of 3.3 pounds per person per day and a per capita employment disposal rate of 9.4 pounds per person per day. Since 2007, the City has met these targets through its diversion programs. The most recent population disposal rate (2023) was 3.2 pounds per day per capita for population and 7.9 pounds per day per capita for employment. [111] The City would continue to implement its diversion programs and requires compliance with all federal, State, and local statutes and regulations for solid waste, including those identified under the most current CALGreen standards and in compliance with SB 1383.

In 1989, the Legislature adopted AB 939, in order to “reduce, recycle, and reuse solid waste generated in the State to the maximum extent feasible.” AB 939 established a waste management hierarchy and required that each county prepare a new Integrated Waste Management Plan and each City prepare a Source Reduction and Recycling Element (SRRE) by July 1, 1991. The SRRE was required to identify how each jurisdiction would meet the mandatory State waste diversion goal of 50 percent by and after the year 2000.

[111] California Department of Resources Recycling and Recovery (CalRecycle), Jurisdiction Per Capita Disposal Rate Trends. Website: https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/ReviewReports. Accessed January 28, 2025.

SB 2202 made a number of changes to the municipal solid waste diversion requirements under AB 939. These changes included a revision to the statutory requirement for 50 percent diversion of solid waste to clarify that local governments shall continue to divert 50 percent of all solid waste on and after January 1, 2000.

SB 1016 introduced a per capita disposal measurement system that measures the 50 percent diversion requirement using a disposal measurement equivalent. SB 1016 repealed the California State Water Resources Control Board (State Water Board) 2-year process, requiring instead that the State Water Board make a finding whether each jurisdiction was in compliance with the Act's diversion requirements for calendar year 2006 and determine compliance for the 2007 calendar year and beyond based on the jurisdiction's change in its per capita disposal rate. The State Water Board is required to review a jurisdiction's compliance with those diversion requirements in accordance with a specified schedule, which is conditioned upon the State Water Board finding that the jurisdiction complies with those requirements or has implemented its SRRE and household hazardous waste element. SB 1016 requires the State Water Board to issue an order of compliance if the State Water Board finds that the jurisdiction has failed to make a good faith effort to implement its SRRE or its household hazardous waste element, pursuant to a specified procedure. The per capita disposal rate is a jurisdiction-specific index, which is used as one of several "factors" in determining a jurisdiction's compliance with the intent of AB 939 and allows CalRecycle and jurisdictions to set their primary focus on successful implementation of diversion programs.

SB 1383 requires counties to take the lead in collaborating with jurisdictions located within the county in planning for the necessary organic waste recycling and food recovery capacity needed to divert organic waste from landfills into recycling activities and food recovery organizations.

CALGreen Section 4.408 requires preparation of a Construction Waste Management Plan that provides an overview of ways in which the applicant would recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition debris. As discussed above, during the construction phase, the proposed project would be required to comply with CALGreen through the recycling and reuse of at least 65 percent of the nonhazardous construction and demolition debris from the project site.

Participation in the City's recycling programs during project construction and operation, including CalRecycle's requirements, would ensure that the proposed project would not conflict with federal, State, and local statutes and regulations related to solid waste. Additionally, solid waste would be disposed of at existing Orange County Waste and Recycling landfills. Disposal of solid waste would comply with all federal, State, and local statutes and regulations related to solid waste. During operation, the proposed project would include receptacles for recyclables and garbage. Thus, impacts would be less than significant, and no mitigation is required.

Mitigation Measures

None required.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.20 Wildfire *If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project:*				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Environmental Evaluation

Setting

The CAL FIRE FHSZ Map indicates that the project site is not within a State Responsibility Area (SRA). The closest SRA is 1.6 miles west of the project site, in the Aliso and Wood Canyons Wilderness Park. No part of the City is listed as an SRA.[112]

[112] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed December 4, 2024.

VHFHSZs are located along the southern and western boundaries of the City.[113]

The General Plan indicates that the closest VHFHSZ is located near Aliso Creek Road, 0.85 mile west of the project site.[114] However, according to the most recently updated CAL FIRE maps, which were updated in 2025, the closest VHFHSZ is located near Wingspan Park along Aliso Viejo Road, 0.68 mile west of the project site.[115]

Would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The project site is developed and located within an urbanized area with existing infrastructure. According to the CAL FIRE FHSZ Map, the project site is not located within a VHFHSZ, nor is it within or near an SRA.[116] Additionally, the proposed project would comply with all City and OCFA requirements for fire prevention and safety measures, including adequate site access.

The City is divided into 22 all-hazard evacuation zones. According to the Citywide Evacuation Zones map, the project site is located in Evacuation Zone 20.[117] Traffic in Evacuation Zone 20 is directed to take either Glenwood Drive or Aliso Viejo Parkway east to Moulton Parkway or west to SR-73 during an emergency evacuation. Aliso Creek Road is an additional evacuation route that provides another north–south evacuation route out of the project site.[118] The proposed project would have access to several different emergency evacuation routes as shown on the evacuation zone maps and would not impair access to any of these emergency evacuation routes. Furthermore, the proposed project would not interfere with the evacuation plan or evacuation routes identified City's EOP and the General Plan Safety Element (see Impact 2.9(f)). Therefore, the proposed project would not conflict with any adopted emergency response or evacuation plans. No impacts related to emergency response or evacuation plans would occur.

[113] City of Aliso Viejo. 2004. General Plan Figure S-1 Safety Policy Map. Website: https://www.avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed January 22, 2025.
[114] City of Aliso Viejo. 2004. General Plan Figure S-1 Safety Policy Map. Website: https://www.avcity.org/DocumentCenter/View/384/Safety-Policy-Map-PDF. Accessed January 22, 2025.
[115] California Department of Forestry and Fire Protection (CAL FIRE). 2025. Fire Hazard Severity Zones in Local Responsibility Area. Website: https://avcity.org/DocumentCenter/View/4207/FHSZ_City_LRA_11x17_AlisoViejo. Accessed April 17, 2025.
[116] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed April 17, 2025.
[117] City of Aliso Viejo. 2024. Citywide Evacuation Zones. Website: https://avcity.org/DocumentCenter/View/3750. Accessed January 21, 2025.
[118] City of Aliso Viejo. 2024. Evacuation Zones – AVO20. Website: https://avcity.org/DocumentCenter/View/2726. Accessed January 21, 2025.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The project site is located in a developed urban area, is currently developed, and is not identified as having significant wildfire risk. The surrounding area is also not designated a VHFHSZ according to the CAL FIRE FHSZ Map.[119] As shown in the General Plan, the project site is not located along an urban-wildfire interface and is not located in the Aliso and Woods Canyon Wilderness Park within a VHFHSZ, where wildfires are of the greatest risk in the City.[120] The topography of the site is relatively flat, and prevailing winds or other factors do not increase the risk of wildfire spread or pollutant concentrations. The proposed project would adhere to applicable fire prevention standards, ensuring no wildfire risks are exacerbated. Thus, no impacts concerning exposure to wildfire pollutant concentrations or wildfire spread would occur.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The proposed project does not include infrastructure improvements, such as roads, fuel breaks, emergency water sources, or new utility installations, that could exacerbate fire risk. The site is already developed with existing infrastructure in place. Compliance with fire safety standards and coordination with the OCFA ensures no additional infrastructure would create new fire risks or result in temporary or ongoing environmental impacts. Additionally, the proposed project would include a total of three new fire hydrants to be installed on eastern, western and southern portions of the project site, which would be installed in compliance with applicable regulations and approvals and would connect to existing water lines.. The MNWD operates 28 potable water reservoirs across 22 sites, locally storing more than 155 million gallons of water. Additionally, MNWD maintains backup generators at critical facilities and service approximately 7,000 fire hydrants throughout the MNWD service area.[121] The proposed project would be required to submit an OCFA water availability form to the MNWD to ensure compliance with applicable regulations and to verify adequate fire flow and system pressures in the project area.[122] As such, the proposed fire hydrants would not exacerbate any fire risks but would assist the City in preparing for and addressing potential fires.

[119] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in Local Responsibility Area. Website: https://avcity.org/DocumentCenter/View/4207/FHSZ_City_LRA_11x17_AlisoViejo. Accessed April 17, 2025.

[120] City of Aliso Viejo. 2004. General Plan, Safety Element. Website: https://avcity.org/DocumentCenter/View/395/Safety-Element-PDF. Accessed December 4, 2024.

[121] Moulton Niguel Water District. 2025. Moulton Niguel's Local Fire Preparedness Plan. Website: https;// https://www.mnwd.com/february-2025-newsletter-moulton-niguels-local-fire-preparedness-plan/. Accessed June 17, 2025.

[122] Moulton Niguel Water District. 2019. Development Requirements For Establishing and Moving Potable Water, Recycled Water, and Wastewater Service. Website: https://www.mnwd.com/wp-content/uploads/Complete-Doc-DEVELOPMENT-REQUIREMENTS-SIG-PAGE-PART-I-APENDICES-AND-PART-II-FINAL.pdf. Accessed June 17, 2025.

The proposed internal roadways would allow for emergency access, and fire hydrants would be provided throughout the project site. Therefore, no impacts related to infrastructure installation or maintenance and fire risk would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The project site is currently developed with an office building and is located within a flat, urbanized area that is not susceptible to downslope or downstream flooding, landslides, or post-fire slope instability. The area is not designated a high-risk flood zone or landslide-prone area. The project site and surrounding areas do not have a history of wildfires.[123] Moreover, the proposed project does not include changes to drainage patterns that could increase risks of flooding or slope instability. Compliance with existing stormwater and drainage regulations would further prevent any related risks. Therefore, no impacts concerning significant risks from runoff, slope instability, or drainage changes would occur.

Mitigation Measures

None required.

[123] California Department of Forestry and Fire Protection (CAL FIRE). 2024. California Wildfire History Map. Website: https://projects.capradio.org/california-fire-history/#10.64/33.5901/-117.7005. Accessed December 4, 2024.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2.21 Mandatory Findings of Significance				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental Evaluation

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than significant impact with mitigation incorporated. As discussed throughout this document, the proposed project does not have the potential to substantially degrade the quality of the

environment or result in significant environmental impacts that cannot be mitigated or reduced to a less than significant level through compliance with the established regulatory framework and implementation of mitigation measures.

As demonstrated in Section 2.4, Biological Resources, the proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. The proposed project would be required to comply with the MBTA and other applicable regulations and to implement MM BIO-1a and MM BIO-1b, which require a pre-construction survey and avoidance of direct and indirect impacts on active nests. Implementation of these measures would reduce potential impacts to a less than significant level. Furthermore, the proposed project would not conflict with habitat because it does not contain Covered Habitats or suitable habitat for Identified Species covered under the CONCCP/HCP.

As demonstrated in Section 2.5, Cultural Resources and Tribal Cultural Resources, the proposed project would not eliminate important examples of the major periods of California history or prehistory. As concluded in Section 2.5, the proposed project would not result in significant adverse impacts to archaeological resources, TCRs, or human remains. MM CUL-1 would require a WEAP training, a site survey conducted by a qualified Archaeologist, and archaeological monitoring. MM CUL-2 would require consultation with a qualified Archaeologist in the event that buried archaeological resources are discovered during construction, as well as inadvertent discovery procedures. MM CUL-3 would require specific procedures to be followed related to inadvertent discovery of human remains. Therefore, the proposed project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than significant impact with mitigation incorporated. A significant cumulative impact may occur if a project, in conjunction with related projects, would result in impacts that are less than significant when viewed individually but would be cumulatively significant when viewed together. Table 14 lists the development projects that have been proposed within the City. The nearest project is approximately 500 feet from the proposed project. Based on available information, there are no approved projects or projects currently under construction in the project's surrounding area at this time or would have a construction schedule that would overlap with the proposed project.[124] The

[124] City of Aliso Viejo. Major Projects. Website: https://avcity.org/412/Major-Projects. Accessed June 19, 2025.

projects were reviewed to identify whether the proposed project could contribute to cumulatively significant impacts when evaluated in combination with other projects.

Table 14: Current Projects in the Vicinity of the Proposed Project

Project Type	Location	Distance	Description	Status
City of Aliso Viejo[1]				
Residential	27081 Aliso Creek Road	1.63 miles	Demolition of three existing office buildings and construction of a 137-unit, residential community	Under review
Residential	26800-26970 Aliso Viejo Parkway	1.45 miles	Demolition of five, two-story office buildings to accommodate the construction of 215 residential units	Under review
Self Storage	15 Argonaut	2.5 miles	Demolition of an existing office building and construction of a three-story, 149,328 square foot self storage facility	Under review
Residential	400-600 Freedom Lane	500 feet	Construction of a 134-unit residential community	Under review
Mixed Use	26501 Aliso Creek Road	1.03 miles	Construction of a mixed-use building with 17,273 square feet of ground floor commercial space with 343 residential units above	Under review

Notes:
[1] City of Aliso Viejo. Major Projects. Website: https://avcity.org/412/Major-Projects. Accessed June 19, 2025.

When considering the proposed project in combination with other past, present, and reasonably foreseeable future projects in the vicinity of the project site, the proposed project does not result in environmental impacts that would incrementally contribute to a significant cumulatively impact. The proposed project's impacts would be individually limited and not cumulatively considerable. The proposed project could result in potentially significant impacts related to biological resources, cultural resources, and paleontological resources. However, these impacts would primarily be related to construction period activities, would be temporary in nature, and would not substantially contribute to any potential cumulative impacts associated with these topics. As there are no cumulative projects that would be undergoing construction simultaneously with the proposed project, less than significant cumulative impacts are anticipated.

Specifically, since the proposed project would not exceed SCAQMD thresholds of significance related to air quality, the proposed project would not result in a cumulatively considerable net increase of construction emissions, operational emissions, or TACs. As discussed more fully in Section 2.8 of this IS/MND, GHG emissions-related impacts are inherently cumulative in nature. The proposed project

also would not conflict with any applicable GHG plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. As such, the proposed plan, in conjunction with other existing, planned, and probable foreseeable projects, would not results in a significant cumulative impact related to GHG emissions generation. As for transportation and traffic impacts, construction of the proposed project would have the potential for temporary impacts to road hazards and emergency access. Use of local roads for transport of construction equipment and construction personnel would be temporary and short-term. Given the location of the project area in relation to other development projects in the region, the transportation network is sufficient to accommodate construction traffic to avoid significant impacts to any one area. Transportation and Traffic impacts would be temporary and less than significant, and would not contribute to cumulatively considerable impacts.

Furthermore, compliance with the regulatory requirements and implementation of mitigation measures at the project level would reduce the potential for incremental effects that would occur with construction and operation of the proposed project relevant to the environmental topical areas discussed within this document to below a level of significance. The mitigation measures identified in this document, including MM BIO-1a, MM BIO-1b, MM CUL-1, MM CUL-2, MM CUL-3, MM GEO-1, MM TCR-1, MM TCR-2, and MM TCR-3 would reduce the proposed project's incremental contribution to any potential cumulative impacts to below a level of significance. No additional mitigation measures would be required to address cumulative impacts. Therefore, the proposed project would cause less than significant cumulative impacts.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than significant impact with mitigation incorporated. The proposed project would improve the housing stock in the City. Based on the discussion provided in the Project Description and the analysis presented in Sections 2.1 through 2.19 of this document, the proposed project would not cause substantial adverse effects on human beings, either directly or indirectly, because the proposed project's potential impacts would be mitigated to a less than significant level. Therefore, with implementation of MM BIO-1a, MM BIO-1b, MM CUL-1, MM CUL-2, MM CUL-3, MM GEO-1, MM TCR-1, MM TCR-2, and MM TCR-3, the proposed project would not result in substantial adverse effects on human beings. Impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Implement MM BIO-1a, MM BIO-1b, MM CUL-1, MM CUL-2, MM CUL-3, MM GEO-1, MM TCR-1, MM TCR-2, and MM TCR-3.

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APPENDIX A:

Air Quality, Greenhouse Gas, and Energy Supporting Information

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Appendix A: Air Quality, Greenhouse Gas, and Energy Supporting Information

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Argonaut Residential
Construction Start Date	4/7/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	6.00
Location	95 Argonaut, Aliso Viejo, CA 92656, USA
County	Orange
City	Aliso Viejo
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6039
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	61.0	Dwelling Unit	1.92	151,628	27,795	0.00	182	—

Parking Lot	0.91	Acre	0.91	0.00	0.00	0.00	—	—

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	48.0	48.0	19.6	18.2	0.06	0.62	6.13	6.71	0.58	1.62	2.20	—	8,225	8,225	0.53	0.91	11.8	8,521
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	48.0	48.0	6.17	8.68	0.02	0.24	0.63	0.87	0.22	0.15	0.37	—	2,276	2,276	0.08	0.06	0.07	2,297
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.09	3.01	4.21	5.26	0.01	0.15	0.68	0.84	0.14	0.16	0.30	—	1,591	1,591	0.07	0.09	0.82	1,620
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.56	0.55	0.77	0.96	< 0.005	0.03	0.12	0.15	0.03	0.03	0.05	—	263	263	0.01	0.01	0.14	268

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.25	1.52	19.6	18.2	0.06	0.62	6.13	6.71	0.58	1.62	2.20	—	8,225	8,225	0.53	0.91	11.8	8,521
2027	48.0	48.0	6.50	9.26	0.02	0.24	0.63	0.85	0.22	0.15	0.35	—	2,290	2,290	0.10	0.11	2.26	2,313

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.91	0.77	6.17	8.68	0.02	0.24	0.63	0.87	0.22	0.15	0.37	—	2,276	2,276	0.08	0.06	0.07	2,297
2027	48.0	48.0	5.85	8.53	0.02	0.22	0.63	0.85	0.20	0.15	0.35	—	2,263	2,263	0.08	0.06	0.06	2,283
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.57	0.46	4.21	5.26	0.01	0.15	0.68	0.84	0.14	0.16	0.30	—	1,591	1,591	0.07	0.09	0.82	1,620
2027	3.09	3.01	3.02	4.43	0.01	0.11	0.31	0.42	0.10	0.07	0.18	—	1,148	1,148	0.04	0.03	0.49	1,160
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.10	0.08	0.77	0.96	< 0.005	0.03	0.12	0.15	0.03	0.03	0.05	—	263	263	0.01	0.01	0.14	268
2027	0.56	0.55	0.55	0.81	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	190	190	0.01	0.01	0.08	192

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.18	5.05	0.90	13.6	0.03	0.02	2.57	2.59	0.02	0.65	0.67	28.7	3,202	3,231	3.05	0.12	9.60	3,352
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.85	4.74	0.94	9.44	0.03	0.02	2.57	2.59	0.01	0.65	0.67	28.7	3,089	3,117	3.05	0.12	1.31	3,232
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.07	4.94	0.97	12.0	0.03	0.02	2.56	2.58	0.02	0.65	0.67	28.7	3,123	3,152	3.05	0.12	4.76	3,270
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.92	0.90	0.18	2.20	< 0.005	< 0.005	0.47	0.47	< 0.005	0.12	0.12	4.76	517	522	0.51	0.02	0.79	541

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.35	1.24	0.87	10.1	0.03	0.02	2.57	2.59	0.01	0.65	0.67	—	2,722	2,722	0.12	0.10	8.52	2,764
Area	3.83	3.81	0.03	3.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.25	9.25	< 0.005	< 0.005	—	9.29
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	454	454	0.04	0.01	—	457
Water	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Waste	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	5.18	5.05	0.90	13.6	0.03	0.02	2.57	2.59	0.02	0.65	0.67	28.7	3,202	3,231	3.05	0.12	9.60	3,352
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.34	1.23	0.94	9.44	0.03	0.02	2.57	2.59	0.01	0.65	0.67	—	2,618	2,618	0.12	0.11	0.22	2,653
Area	3.51	3.51	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	454	454	0.04	0.01	—	457
Water	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Waste	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	4.85	4.74	0.94	9.44	0.03	0.02	2.57	2.59	0.01	0.65	0.67	28.7	3,089	3,117	3.05	0.12	1.31	3,232
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.33	1.22	0.95	9.66	0.03	0.02	2.56	2.58	0.01	0.65	0.66	—	2,646	2,646	0.12	0.11	3.68	2,685
Area	3.73	3.72	0.02	2.37	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	6.34	6.34	< 0.005	< 0.005	—	6.36
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	454	454	0.04	0.01	—	457
Water	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Waste	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	5.07	4.94	0.97	12.0	0.03	0.02	2.56	2.58	0.02	0.65	0.67	28.7	3,123	3,152	3.05	0.12	4.76	3,270
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.24	0.22	0.17	1.76	< 0.005	< 0.005	0.47	0.47	< 0.005	0.12	0.12	—	438	438	0.02	0.02	0.61	444
Area	0.68	0.68	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.05	1.05	< 0.005	< 0.005	—	1.05
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	75.2	75.2	0.01	< 0.005	—	75.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.73	2.81	3.54	0.07	< 0.005	—	5.95
Waste	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Total	0.92	0.90	0.18	2.20	< 0.005	< 0.005	0.47	0.47	< 0.005	0.12	0.12	4.76	517	522	0.51	0.02	0.79	541

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.66	1.39	12.9	14.6	0.02	0.51	—	0.51	0.47	—	0.47	—	2,494	2,494	0.10	0.02	—	2,503
Demolition	—	—	—	—	—	—	4.49	4.49	—	0.68	0.68	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.71	0.80	< 0.005	0.03	—	0.03	0.03	—	0.03	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.25	0.25	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	22.6	22.6	< 0.005	< 0.005	—	22.7
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	163	163	< 0.005	0.01	0.57	165
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.55	0.08	6.65	2.94	0.04	0.07	1.47	1.54	0.07	0.41	0.48	—	5,568	5,568	0.42	0.88	11.3	5,852
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.60	8.60	< 0.005	< 0.005	0.01	8.72
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	< 0.005	0.38	0.16	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	305	305	0.02	0.05	0.27	320

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	50.5	50.5	< 0.005	0.01	0.04	53.0

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.34	1.13	9.84	10.8	0.03	0.42	—	0.42	0.39	—	0.39	—	2,716	2,716	0.11	0.02	—	2,725
Dust From Material Movement	—	—	—	—	—	—	0.62	0.62	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.70	3.70	< 0.005	< 0.005	—	3.71
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.40	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.7	97.7	< 0.005	< 0.005	0.34	99.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.70	1.42	12.9	14.0	0.02	0.58	—	0.58	0.53	—	0.53	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movement	—	—	—	—	—	—	2.77	2.77	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.4	40.4	< 0.005	< 0.005	—	40.5
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.68	6.68	< 0.005	< 0.005	—	6.70
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.53	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	130	130	< 0.005	< 0.005	0.45	132
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.34	0.05	4.09	1.81	0.02	0.04	0.90	0.95	0.04	0.25	0.30	—	3,426	3,426	0.26	0.54	6.94	3,601
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.07	2.07	< 0.005	< 0.005	< 0.005	2.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	56.3	56.3	< 0.005	0.01	0.05	59.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.33	9.33	< 0.005	< 0.005	0.01	9.79

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.80	6.58	0.01	0.24	—	0.24	0.22	—	0.22	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.80	6.58	0.01	0.24	—	0.24	0.22	—	0.22	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.59	2.93	0.01	0.11	—	0.11	0.10	—	0.10	—	681	681	0.03	0.01	—	683
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	113
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.13	2.31	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	572	572	0.01	0.02	1.99	580
Vendor	0.02	< 0.005	0.21	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	205	205	0.01	0.03	0.53	214
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.15	2.00	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	544	544	0.01	0.02	0.05	551
Vendor	0.02	< 0.005	0.22	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	205	205	0.01	0.03	0.01	213
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.93	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	246	246	< 0.005	0.01	0.38	249
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	91.3	91.3	< 0.005	0.01	0.10	95.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	40.8	40.8	< 0.005	< 0.005	0.06	41.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.1	15.1	< 0.005	< 0.005	0.02	15.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.72	0.60	5.51	6.56	0.01	0.22	—	0.22	0.20	—	0.20	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	5.51	6.56	0.01	0.22	—	0.22	0.20	—	0.20	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.27	2.50	2.98	0.01	0.10	—	0.10	0.09	—	0.09	—	693	693	0.03	0.01	—	695
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.46	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.13	0.13	2.17	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	562	562	0.01	0.02	1.78	570
Vendor	0.02	< 0.005	0.20	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	201	201	0.01	0.03	0.48	210
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.12	0.13	1.87	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	535	535	0.01	0.02	0.05	542
Vendor	0.02	< 0.005	0.21	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	201	201	0.01	0.03	0.01	209
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	246	246	< 0.005	0.01	0.35	250
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.2	91.2	< 0.005	0.01	0.09	95.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	40.8	40.8	< 0.005	< 0.005	0.06	41.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.1	15.1	< 0.005	< 0.005	0.02	15.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.65	5.74	8.20	0.01	0.23	—	0.23	0.21	—	0.21	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.2	68.2	< 0.005	< 0.005	—	68.4
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.74	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	192	192	< 0.005	0.01	0.61	195
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.01	0.71	0.32	< 0.005	0.01	0.16	0.17	0.01	0.05	0.05	—	605	605	0.05	0.10	1.15	636
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.1	33.1	< 0.005	0.01	0.03	34.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.68	1.68	< 0.005	< 0.005	< 0.005	1.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	48.0	48.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	48.0	48.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	2.63	2.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	0.48	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.43	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.36	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.37	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	107	107	< 0.005	< 0.005	0.01	10[illegible]

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.94	5.94	< 0.005	< 0.005	0.01	6.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	1.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.35	1.24	0.87	10.1	0.03	0.02	2.57	2.59	0.01	0.65	0.67	—	2,722	2,722	0.12	0.10	8.52	2,764
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.35	1.24	0.87	10.1	0.03	0.02	2.57	2.59	0.01	0.65	0.67	—	2,722	2,722	0.12	0.10	8.52	2,764
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	1.34	1.23	0.94	9.44	0.03	0.02	2.57	2.59	0.01	0.65	0.67	—	2,618	2,618	0.12	0.11	0.22	2,653
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.34	1.23	0.94	9.44	0.03	0.02	2.57	2.59	0.01	0.65	0.67	—	2,618	2,618	0.12	0.11	0.22	2,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.24	0.22	0.17	1.76	< 0.005	< 0.005	0.47	0.47	< 0.005	0.12	0.12	—	438	438	0.02	0.02	0.61	444
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.24	0.22	0.17	1.76	< 0.005	< 0.005	0.47	0.47	< 0.005	0.12	0.12	—	438	438	0.02	0.02	0.61	444

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	421	421	0.04	< 0.005	—	424
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	32.9	32.9	< 0.005	< 0.005	—	33.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	454	454	0.04	0.01	—	457
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	421	421	0.04	< 0.005	—	424

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	32.9	32.9	< 0.005	< 0.005	—	33.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	454	454	0.04	0.01	—	457
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	69.7	69.7	0.01	< 0.005	—	70.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	5.45	5.45	< 0.005	< 0.005	—	5.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	75.2	75.2	0.01	< 0.005	—	75.6

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	3.25	3.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.32	0.30	0.03	3.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.25	9.25	< 0.005	< 0.005	—	9.29
Total	3.83	3.81	0.03	3.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.25	9.25	< 0.005	< 0.005	—	9.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	3.25	3.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.51	3.51	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.59	0.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.04	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Total	0.68	0.68	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.05	1.05	< 0.005	< 0.005	—	1.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.73	2.81	3.54	0.07	< 0.005	—	5.95
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.73	2.81	3.54	0.07	< 0.005	—	5.95

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhou	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/6/2026	5/1/2026	5.00	20.0	—
Site Preparation	Site Preparation	5/4/2026	5/6/2026	5.00	3.00	—
Grading	Grading	5/7/2026	5/14/2026	5.00	6.00	—
Building Construction	Building Construction	5/18/2026	8/20/2027	5.00	330	Default Length increased from 220 to 200
Paving	Paving	8/23/2027	9/17/2027	5.00	20.0	Length Doubled from Default Length
Architectural Coating	Architectural Coating	9/20/2027	10/15/2027	5.00	20.0	Length Doubled from Default Lengtth

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Demolition	Tractors/Loaders/Back	Diesel	Average	3.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	4.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Electric	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Electric	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	18.5	LDA,LDT1,LDT2

Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	81.3	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	50.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.9	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	6.52	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	9.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.78	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	307,047	102,349	0.00	0.00	2,378

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	6,500	—
Site Preparation	0.00	0.00	4.50	0.00	—
Grading	0.00	2,400	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.91

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%

Parking Lot	0.91	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	370	346	0.03	< 0.005
2027	450	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	411	411	411	150,066	3,632	3,632	3,632	1,325,753
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	61
Conventional Wood Stoves	0

Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
307046.7	102,349	0.00	0.00	2,378

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	444,090	346	0.0330	0.0040	0.00
Parking Lot	34,724	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	2,289,065	440,285
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	45.2	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

8. User Changes to Default Data

Screen	Justification
Land Use	Bldg Square footage is Gross for construction purposes and conservatively based on 3 story buildings at a site coverage 41 % (this estimate would include unconditioned built space such as garages, porches etc) Landscaping from site plans Parking represents interior roads and parking and calculated by subtracting building footprint/coverage and open space 33,092 sq ft
Construction: Construction Phases	Building construction phases increased based on applicants schedule and density of the construction Assume that on-site electricity is available for uses such as welding - air compressors and temporary power used in lieu of diesel generators
Construction: Off-Road Equipment	Generator Reduced to 4 hours per day to reflect grid/temp power Air Compressors and Welders - Electric

Operations: Energy Use	Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health
Construction: Trips and VMT	Vendor Paving Trips for Asphalt
Operations: Vehicle Data	Trip Generation Rate = 6.74 Trips/DU for ITE Code 220 - to match Urban Crossroads Trip Generation (06.01.2024) and VMT Screening Evaluation Report (07.15.24)
Operations: Hearths	No Wood stoves or Fireplaces

Argonaut Residential - Localized Emissions Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Argonaut Residential - Localized Emissions
Construction Start Date	4/7/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	6.00
Location	95 Argonaut, Aliso Viejo, CA 92656, USA
County	Orange
City	Aliso Viejo
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6039
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	61.0	Dwelling Unit	1.92	151,628	27,795	0.00	182	—

Parking Lot	0.91	Acre	0.91	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	48.0	48.0	14.2	15.6	0.03	0.58	4.53	5.04	0.53	1.34	1.88	—	2,766	2,766	0.18	0.06	0.30	2,790
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	48.0	48.0	5.90	7.02	0.01	0.24	0.02	0.26	0.22	< 0.005	0.23	—	1,565	1,565	0.07	0.02	< 0.005	1,573
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.06	3.00	3.72	4.31	0.01	0.15	0.31	0.46	0.14	0.06	0.20	—	916	916	0.05	0.01	0.02	921
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.56	0.55	0.68	0.79	< 0.005	0.03	0.06	0.08	0.02	0.01	0.04	—	152	152	0.01	< 0.005	< 0.005	152

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	1.82	1.48	14.2	15.6	0.03	0.58	4.53	5.04	0.53	1.34	1.88	—	2,766	2,766	0.18	0.06	0.30	2,790
2027	48.0	48.0	5.88	8.41	0.01	0.23	0.02	0.24	0.21	< 0.005	0.21	—	1,565	1,565	0.07	0.02	0.07	1,573
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.86	0.74	5.90	7.02	0.01	0.24	0.02	0.26	0.22	< 0.005	0.23	—	1,565	1,565	0.07	0.02	< 0.005	1,573
2027	48.0	48.0	5.60	6.98	0.01	0.22	0.02	0.24	0.20	< 0.005	0.21	—	1,565	1,565	0.07	0.02	< 0.005	1,572
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.52	0.44	3.72	4.31	0.01	0.15	0.31	0.46	0.14	0.06	0.20	—	916	916	0.05	0.01	0.02	921
2027	3.06	3.00	2.87	3.63	0.01	0.11	0.01	0.12	0.10	< 0.005	0.11	—	781	781	0.04	0.01	0.02	785
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.10	0.08	0.68	0.79	< 0.005	0.03	0.06	0.08	0.02	0.01	0.04	—	152	152	0.01	< 0.005	< 0.005	152
2027	0.56	0.55	0.52	0.66	< 0.005	0.02	< 0.005	0.02	0.02	< 0.005	0.02	—	129	129	0.01	< 0.005	< 0.005	130

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.86	4.81	0.32	6.00	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	28.7	698	727	2.98	0.05	1.57	817
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.53	4.50	0.31	2.86	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	28.7	684	712	2.99	0.05	1.10	802
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.74	4.70	0.33	5.18	< 0.005	< 0.005	0.14	0.15	< 0.005	0.04	0.04	28.7	691	720	2.99	0.05	1.29	810
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.87	0.86	0.06	0.95	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	4.76	114	119	0.49	0.01	0.21	134

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.03	1.00	0.29	2.54	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	218	218	0.06	0.03	0.48	229
Area	3.83	3.81	0.03	3.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.25	9.25	< 0.005	< 0.005	—	9.29
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	454	454	0.04	0.01	—	457
Water	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Waste	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	4.86	4.81	0.32	6.00	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	28.7	698	727	2.98	0.05	1.57	817
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.02	0.99	0.31	2.86	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	212	212	0.06	0.03	0.01	224
Area	3.51	3.51	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	454	454	0.04	0.01	—	457
Water	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Waste	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	4.53	4.50	0.31	2.86	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	28.7	684	712	2.99	0.05	1.10	802
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.01	0.98	0.31	2.81	< 0.005	< 0.005	0.14	0.15	< 0.005	0.04	0.04	—	214	214	0.06	0.03	0.21	225
Area	3.73	3.72	0.02	2.37	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	6.34	6.34	< 0.005	< 0.005	—	6.36
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	454	454	0.04	0.01	—	457

Water	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Waste	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	4.74	4.70	0.33	5.18	< 0.005	< 0.005	0.14	0.15	< 0.005	0.04	0.04	28.7	691	720	2.99	0.05	1.29	810
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.18	0.18	0.06	0.51	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	35.4	35.4	0.01	0.01	0.03	37.2
Area	0.68	0.68	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.05	1.05	< 0.005	< 0.005	—	1.05
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	75.2	75.2	0.01	< 0.005	—	75.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.73	2.81	3.54	0.07	< 0.005	—	5.95
Waste	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Total	0.87	0.86	0.06	0.95	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	4.76	114	119	0.49	0.01	0.21	134

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.66	1.39	12.9	14.6	0.02	0.51	—	0.51	0.47	—	0.47	—	2,494	2,494	0.10	0.02	—	2,503
Demolition	—	—	—	—	—	—	4.49	4.49	—	0.68	0.68	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.71	0.80	< 0.005	0.03	—	0.03	0.03	—	0.03	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.25	0.25	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	22.6	22.6	< 0.005	< 0.005	—	22.7
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.10	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	6.44	6.44	< 0.005	< 0.005	0.02	6.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.13	0.05	1.24	0.88	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	265	265	0.07	0.04	0.28	280
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.36

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.6	14.6	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.42	2.42	< 0.005	< 0.005	< 0.005	2.55

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.34	1.13	9.84	10.8	0.03	0.42	—	0.42	0.39	—	0.39	—	2,716	2,716	0.11	0.02	—	2,725
Dust From Material Movement	—	—	—	—	—	—	0.62	0.62	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.70	3.70	< 0.005	< 0.005	—	3.71
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	< 0.005	0.06	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.87	3.87	< 0.005	< 0.005	0.01	4.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.70	1.42	12.9	14.0	0.02	0.58	—	0.58	0.53	—	0.53	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movement	—	—	—	—	—	—	2.77	2.77	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.4	40.4	< 0.005	< 0.005	—	40.5
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.68	6.68	< 0.005	< 0.005	—	6.70
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.08	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	5.15	5.15	< 0.005	< 0.005	0.01	5.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.03	0.76	0.54	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	163	163	0.05	0.03	0.17	173
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.69	2.69	< 0.005	< 0.005	< 0.005	2.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.80	6.58	0.01	0.24	—	0.24	0.22	—	0.22	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.80	6.58	0.01	0.24	—	0.24	0.22	—	0.22	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.59	2.93	0.01	0.11	—	0.11	0.10	—	0.10	—	681	681	0.03	0.01	—	683
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	113
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.03	0.35	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.6	22.6	0.01	< 0.005	0.05	23.9
Vendor	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.03	16.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.03	0.39	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.0	22.0	0.01	< 0.005	< 0.005	23.2
Vendor	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.2	16.2	< 0.005	< 0.005	< 0.005	17.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.17	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.90	9.90	< 0.005	< 0.005	0.01	10.4
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.20	7.20	< 0.005	< 0.005	< 0.005	7.55
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.73
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.19	1.19	< 0.005	< 0.005	< 0.005	1.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.72	0.60	5.51	6.56	0.01	0.22	—	0.22	0.20	—	0.20	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	5.51	6.56	0.01	0.22	—	0.22	0.20	—	0.20	—	1,527	1,527	0.06	0.01	—	1,532
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.27	2.50	2.98	0.01	0.10	—	0.10	0.09	—	0.09	—	693	693	0.03	0.01	—	695
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.46	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.11	0.03	0.32	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.2	22.2	0.01	< 0.005	0.05	23.4
Vendor	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.02	16.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.11	0.03	0.37	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.6	21.6	0.01	< 0.005	< 0.005	22.8
Vendor	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.9	15.9	< 0.005	< 0.005	< 0.005	16.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.01	0.16	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.88	9.88	< 0.005	< 0.005	0.01	10.4
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.21	7.21	< 0.005	< 0.005	< 0.005	7.56
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.73
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.19	1.19	< 0.005	< 0.005	< 0.005	1.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.65	5.74	8.20	0.01	0.23	—	0.23	0.21	—	0.21	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.2	68.2	< 0.005	< 0.005	—	68.4
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.01	0.11	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.59	7.59	< 0.005	< 0.005	0.02	8.00
Vendor	0.01	0.01	0.14	0.10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	28.9	28.9	0.01	< 0.005	0.03	30.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.59	1.59	< 0.005	< 0.005	< 0.005	1.68

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.28
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	48.0	48.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	48.0	48.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	2.63	2.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Architectural Coatings	0.48	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.06	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.45	4.45	< 0.005	< 0.005	0.01	4.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.07	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.32	4.32	< 0.005	< 0.005	< 0.005	4.55

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.03	1.00	0.29	2.54	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	218	218	0.06	0.03	0.48	229
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.03	1.00	0.29	2.54	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	218	218	0.06	0.03	0.48	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	1.02	0.99	0.31	2.86	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	212	212	0.06	0.03	0.01	224
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.02	0.99	0.31	2.86	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	212	212	0.06	0.03	0.01	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.18	0.18	0.06	0.51	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	35.4	35.4	0.01	0.01	0.03	37.2
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.18	0.18	0.06	0.51	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	35.4	35.4	0.01	0.01	0.03	37.2

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	421	421	0.04	< 0.005	—	424
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	32.9	32.9	< 0.005	< 0.005	—	33.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	454	454	0.04	0.01	—	457
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	421	421	0.04	< 0.005	—	424

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	32.9	32.9	< 0.005	< 0.005	—	33.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	454	454	0.04	0.01	—	457
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	69.7	69.7	0.01	< 0.005	—	70.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	5.45	5.45	< 0.005	< 0.005	—	5.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	75.2	75.2	0.01	< 0.005	—	75.6

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	3.25	3.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.32	0.30	0.03	3.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.25	9.25	< 0.005	< 0.005	—	9.29
Total	3.83	3.81	0.03	3.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.25	9.25	< 0.005	< 0.005	—	9.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	3.25	3.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.51	3.51	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.59	0.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.04	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.05	1.05	< 0.005	< 0.005	—	1.05
Total	0.68	0.68	< 0.005	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.05	1.05	< 0.005	< 0.005	—	1.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.39	17.0	21.4	0.45	0.01	—	35.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.73	2.81	3.54	0.07	< 0.005	—	5.95
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.73	2.81	3.54	0.07	< 0.005	—	5.95

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.3	0.00	24.3	2.43	0.00	—	85.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.03	0.00	4.03	0.40	0.00	—	14.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhou	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.09	1.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/6/2026	5/1/2026	5.00	20.0	—
Site Preparation	Site Preparation	5/4/2026	5/6/2026	5.00	3.00	—
Grading	Grading	5/7/2026	5/14/2026	5.00	6.00	—
Building Construction	Building Construction	5/18/2026	8/20/2027	5.00	330	Default Length increased from 220 to 200
Paving	Paving	8/23/2027	9/17/2027	5.00	20.0	Length Doubled from Default Length
Architectural Coating	Architectural Coating	9/20/2027	10/15/2027	5.00	20.0	Length Doubled from Default Lengtth

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48

Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	4.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Electric	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Electric	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	81.3	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT

Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	—	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	50.0	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.9	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	6.52	0.50	HHDT,MHDT
Building Construction	Hauling	0.00	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	9.00	0.50	HHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	0.00	0.50	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.78	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	307,047	102,349	0.00	0.00	2,378

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	6,500	—
Site Preparation	0.00	0.00	4.50	0.00	—
Grading	0.00	2,400	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.91

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%
Parking Lot	0.91	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	370	346	0.03	< 0.005
2027	450	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	411	411	411	150,066	206	206	206	75,033
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	61
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
307046.7	102,349	0.00	0.00	2,378

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	444,090	346	0.0330	0.0040	0.00
Parking Lot	34,724	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	2,289,065	440,285
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	45.2	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

8. User Changes to Default Data

Screen	Justification
Land Use	Bldg Square footage is Gross for construction purposes and conservatively based on 3 story buildings at a site coverage 41 % (this estimate would include unconditioned built space such as garages, porches etc) Landscaping from site plans Parking represents interior roads and parking and calculated by subtracting building footprint/coverage and open space 33,092 sq ft
Construction: Construction Phases	Building construction phases increased based on applicants schedule and density of the construction Assume that on-site electricity is available for uses such as welding - air compressors and temporary power used in lieu of diesel generators
Construction: Off-Road Equipment	Generator Reduced to 4 hours per day to reflect grid/temp power Air Compressors and Welders - Electric

Operations: Energy Use	Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health
Construction: Trips and VMT	Vendor Paving trips for asphalt Trip Length 0.5 mile for LST
Operations: Vehicle Data	Trip Length 0.5 mile for LST Trip Generation Rates from Urban Crossroads Reports (June and July 2024) for Trip Generation and VMT Screening
Operations: Hearths	No Woodstoves or Fireplaces

Argonaut Residential
Demolition Debris Calculations

Description	Footprint Area [1] (square feet)	height/depth (ft)	Volume (ft3)	Demolition Waste Fraction	Demolition Volume[1] (ft^3)	Demolition Waste Density (tons/cy)	Demolition Weight (tons)
Building (2-story)	24,000	25	600,000	0.25	150,000	0.50	2,778
Pavement	99,275	0.5	49,637	1	49,637	2.025	3,723
Totals	**123,275**	-	-		-		**6,500**

Notes:

Building demolition estimates are based on methods used in CalEEMod (CAPCOA, 2022), based on 1 story building , assume 10 ft per floor where 1 sf = 10 cf of building volume, and 1 cf of building volume = 0.25 cf of waste. This approach can be used to estimate demolition for multiple story buildings. It also assumes 1 cubic yard building waste = 0.5 ton weight

1 cubic yard of asphalt = 2.025 tons or 4050 lbs.

[1] Source: Site Plans - Pervious Areas removed. Conservatively used as Bldg Square Footage for Demoltion Estimates.

Argonaut Residential
Asphalt Paving Construction Trips Calculation

Paved area including driveways (acres)	
Paved area (sf)	39,640
Asphalt volume (cube feet) assume 6 inch pavement	19,820
Asphalt volume (cy)	734
Capacity per vendor truck (CY per truck)	16
One-Way Trips	**92**
Days in paving phase	**10**
One-way Vendor Trips per day	9

Argonaut Residential
All-Electric Measure Electricity Adjustment to Replace NG Usage

CEC Electricity Demand Forecast Zone (EDFZ) **7**

			Electric End Use per Unit (DU or KSF)				Additional Energy for Replaced End Uses			Caleemod DEFAULT Electricity Usage kWhr/yr			ALL Electtric Project REVISED Electricity KWhr-Year		
Building Type / LandUse	Amount	Units	Water Heater	Primary Heat	Cooking	Dryer	TOTAL per Unit) kWhr/yr	(per Unit) Title 24 kWhr/yr	(per Unit) Non-Title 24 kWhr/yr	Total CalEEMod Value kWhr/yr	Subject to Title 24	Not Subject to Title 24	Total CalEEMod Value kWhr/yr	Subject to Title 24	Not Subject to Title 24
Condo/Townhouse	61	Dwelling Units	1365	609	292	422	2,688	1,974	714	280,122	69,046	211,076	444,090	189,460	254,630
Parking Lot	39.640	1,000 sqft	0							34,725	34,725	0			

Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
Emission Factors are From Data Tables E=15.2 from Appendix C of the Handbook

References:

CAPCOA, 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: Available at: https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf.

CAPCOA. 2021. Appendix C : Emission Factors and Data Tables from Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity.. Available at: https://www.caleemod.com/documents/handbook/appendices/appendix_c.pdf

Argonaut Residential
Modeling Parameters for Construction HRA
Diesel Particulate Matter Emission Sources

Source ID	Modeled Source	Location Description	AERMOD Source Type	Size		Initial Source Release Parameters (m) Release Height	Initial Lateral Dimension	Initial Vertical Dimension	Emissions[4] (lb/hr)	AERMOD Source Emission Rate	
SITE	Site - Off-Road Equipment Diesel Exhaust[1]	Project Site - Construction Area	Area	11468.4	m2	5	—	1.4	0.0298	3.27E-07	g/m2-sec
ROAD1	Roadway 1 - On-Road Diesel Exhaust[2,3]	Truck Route - Glenwood Drive	Line-Volume	957	meters	3.40	7.44	3.16	2.8E-05	3.53E-06	g/s

1 Construction exhaust modeled as an area source. Release parameters for construction equipment DPM exhaust modeling from SCAQMD (2008) for gaseous exhaust from construction equipment.

2 Emissions for On-Road Mobile Sources (Vendor and Haul Diesel Exhaust) modeled only for roadways within 1,000 feet of the site within the modeling domain.

3 Parameters calculated as per US EPA Haul Road Workgroup Final Report released on March 2, 2012 which suggests the use of Adjacent Volume Sources to represent the haul road.

4 Emissions from CalEEModeling for Construction modeled during construction hours as included in Attachment A. See Note 2 above regarding roadway emission portion modeled.

Variable Emission Factors: ALL Sources

Monday - Friday						
1-6	0	0	0	0	0	0
7-12	0	0	1	1	1	1
13-18	0	1	1	1	1	0
19-24	0	0	0	0	0	0
Saturday						
1-6	0	0	0	0	0	0
7-12	0	0	0	0	0	0
13-18	0	0	0	0	0	0
19-24	0	0	0	0	0	0
Sunday						
1-6	0	0	0	0	0	0
7-12	0	0	0	0	0	0
13-18	0	0	0	0	0	0
19-24	0	0	0	0	0	0

Argonaut Residential
Health Risk Assessment Inputs
DPM Emissions for AERMOD Inputs

Net Work Days	399
Net Construction Years	1.53
Total Working Hours	3,192

Construction Year	On-site Construction Activity	On-site PM10E (lbs)	Off-Site PM10E (lbs)	Off-Site PM10E(lbs)		
				Worker	Vendor	Haul
2026	Demolition	10.17	1.43	-	-	1.43
2026	Site Preparation	1.27	0.00	-	-	-
2026	Grading	3.47	0.26	-	-	0.26
2026	Building Construction	39.07	0.24	-	0.239	-
2026	Building Construction	36.39	0.24	-	0.243	-
2027	Paving	4.60	0.16	-	-	0.16
2027	Architectural Coating	0.00	0.00	-	-	-
Total PM Exhaust (On-site)		**94.97**	**2.34**	-	0.48	1.856

Note: PM10E = PM10 Exhaust which is a surrogate for Diesel Exhaust, particulate matter

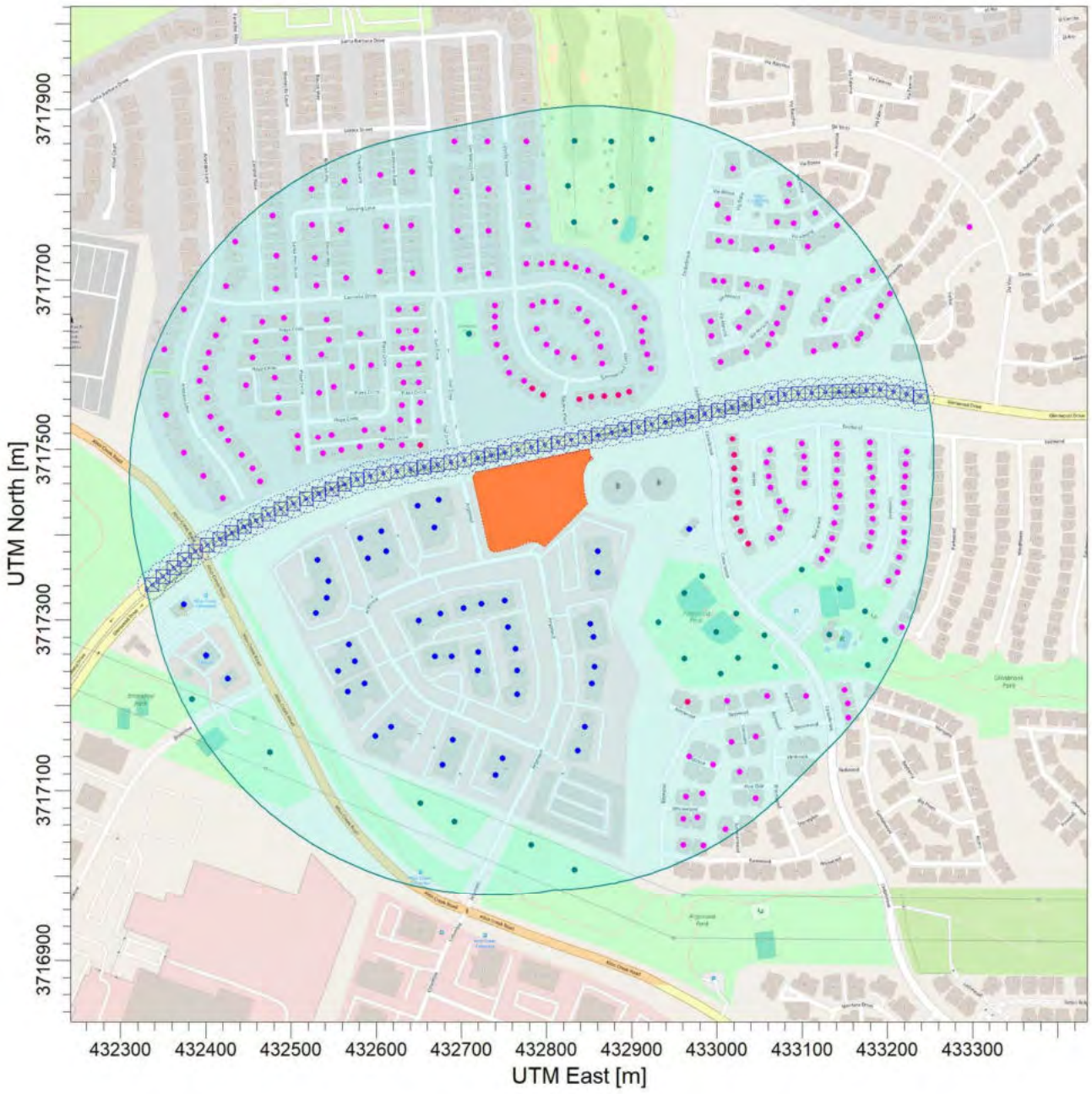
CalEEMod Distance (miles)	11.7	8.4	20
Total Roadways Included within 1,000 ft	0.59	0.59	0.59
Roadway Emissions included	5%	7%	3%

	On-site Construction	Offsite Roadway	Off-Site Diesel PM10E (lbs) within 1,000 ft Roadways		
			Worker	Vendor	Haul
Modeled Emissions (lbs)	**94.97**	**0.089**	-	0.03	0.06
Hourly Emissions (lb/hr)	0.0298	0.00003	0.00E+00	1.07E-05	1.73E-05

Source	**percentage**	**Modeling Inputs**	
Site Emissions	100%	2.98E-02	lb/hr
Roadway 1 Emissions	100%	2.80E-05	lb/hr

PROJECT TITLE:

Argonaut Residential Project
Construction HRA - Source and Receptors



Source Legend:

- Site Boundary ------
- Site
- Haul Road

Receptor Legend:

- Residential
- Near Residential
- Commercial / Retail
- Park / Open Space

Sources / Receptors :

2 / 236

SCALE: 1:7,500

0 0.2 km

FCS
An ADEC Innovation

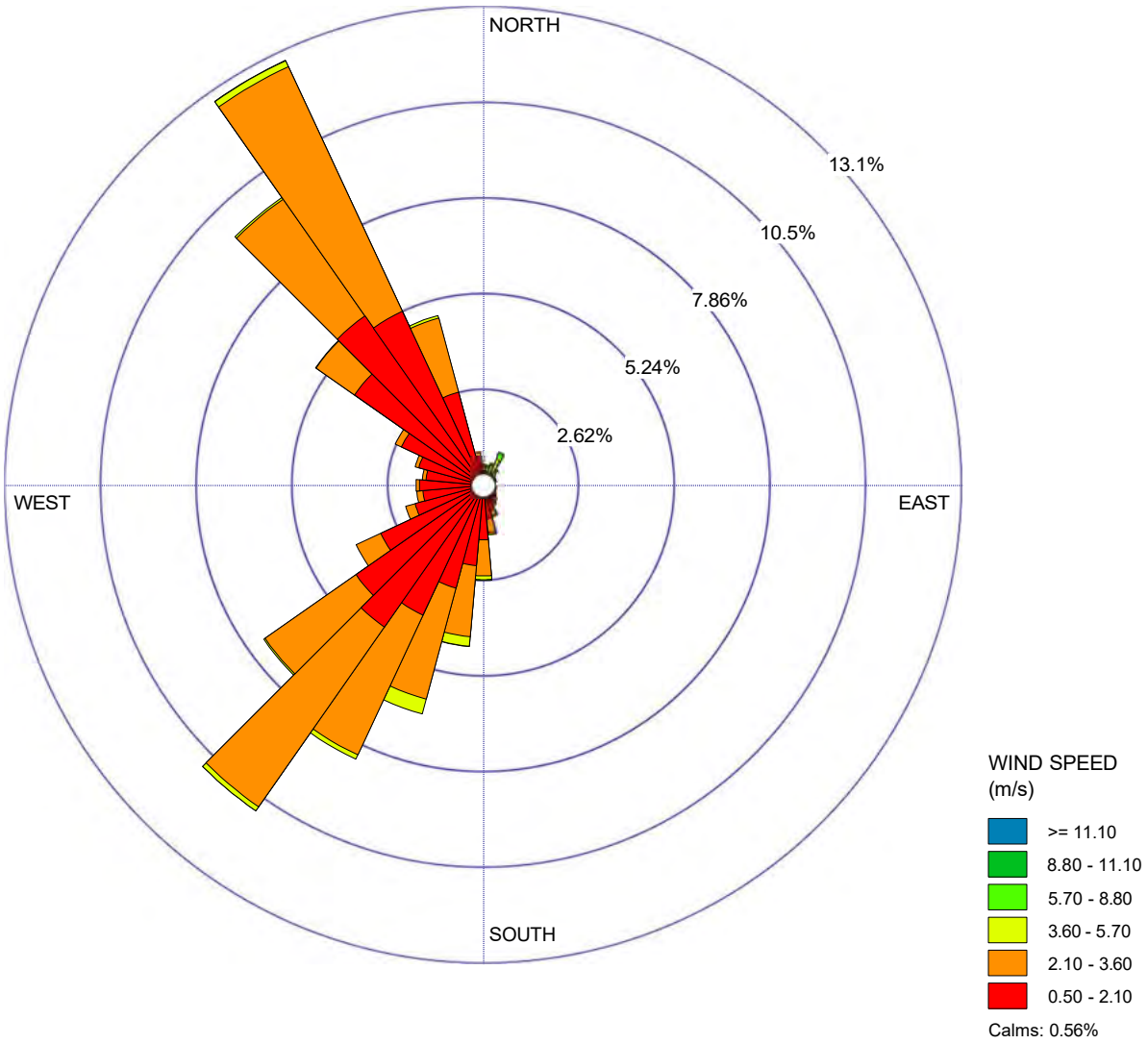
AERMOD View - Lakes Environmental Software

WIND ROSE PLOT:

Mission Viejo Station (MSVJ)
Wind Direction during Construction Hours

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

Wind Rose is generated just for the hours with emissions when construction would occur or from 8 AM – 5 PM. This corresponds to the modeling hours in AERMOD.

DATA PERIOD:

Start Date: 1/1/2017 - 09:00
End Date: 12/31/2021 - 17:00

CALM WINDS:

0.56%

AVG. WIND SPEED:

1.96 m/s

How to Read a Wind Rose Diagram

The wind rose above shows the general wind direction and speed for the meteorological data set used in the AERMOD modeling for the project.'

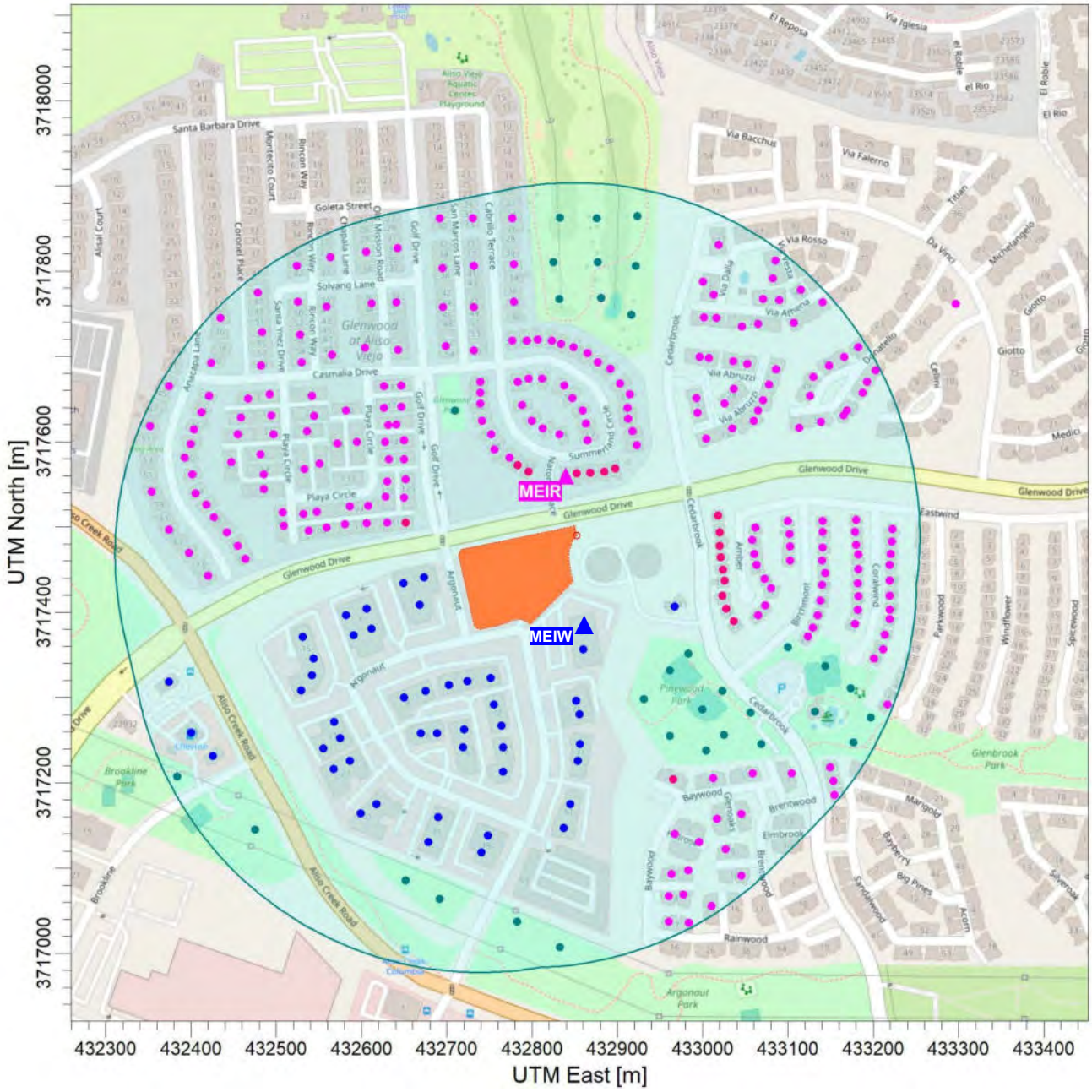
The circular format of the wind rose shows the direction the winds blew from and the length of each "spoke" around the circle shows how often the wind blew from that direction.

WRPLOT View - Lakes Environmental Software

PROJECT TITLE:

Argonaut Residential Project - Construction HRA

Maximum Impact Location



Source Legend:	Receptor Legend:	Sensitive Receptor Legend:
Site Boundary ------	Residential	MEIR = Maximally Exposed Individual Resident
Site ■	Near Residential	MEIW = Maximally Exposed Individual Worker
	Commercial / Retail	
	Park / Open Space	

SCALE

0 1:7,500 0.2 km

FCS An ADEC Innovation

Control Pathway

AERMOD

Dispersion Options

Titles

Argonaut Residential Project
Construction HRA - DPM

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM10

Averaging Time Options

Hours ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Half-life of 4 hrs will be used

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☐ Yes ☑ No

Default Height = 0.00 m

Control Pathway

Optional Files

☐ Re-Start File ☐ Init File ☐ Multi-Year Analyses ☐ Event Input File ☑ Error Listing File

Detailed Error Listing File

Filename: ConHRA.err

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: SITE (Construction Site)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
135.99	5.00	3.27E-7	1.40	18	432852.37	3717489.75
		3.27E-7			432849.58	3717501.17
		3.27E-7			432717.68	3717473.69
		3.27E-7			432716.80	3717473.95
		3.27E-7			432713.57	3717467.44
		3.27E-7			432731.86	3717385.04
		3.27E-7			432734.07	3717382.84
		3.27E-7			432735.90	3717380.63
		3.27E-7			432739.58	3717379.90
		3.27E-7			432762.72	3717385.04
		3.27E-7			432778.15	3717390.55
		3.27E-7			432787.34	3717392.39
		3.27E-7			432797.99	3717385.77
		3.27E-7			432848.13	3717436.03
		3.27E-7			432845.02	3717447.87
		3.27E-7			432843.18	3717461.83
		3.27E-7			432843.18	3717471.01
		3.27E-7			432846.86	3717482.77

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: ROAD1 (HAUL ROUTE)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
16.00	3.53E-6		432330.87	3717336.79	160.70	3.40
			432386.15	3717379.94	159.21	3.40
			432481.89	3717428.48	154.23	3.40
			432584.36	3717467.58	146.77	3.40
			432704.36	3717487.80	138.62	3.40
			432967.29	3717539.04	128.16	3.40
			433081.90	3717566.01	119.10	3.40
			433192.46	3717571.40	110.31	3.40
			433243.70	3717561.96	106.64	3.40

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1	L0000001	432337.18	3717341.71	160.55	3.40	5.88E-8	16.00		7.44	3.16
	L0000002	432349.79	3717351.56	160.22	3.40	5.88E-8	16.00		7.44	3.16
	L0000003	432362.40	3717361.40	159.85	3.40	5.88E-8	16.00		7.44	3.16
	L0000004	432375.02	3717371.25	159.45	3.40	5.88E-8	16.00		7.44	3.16
	L0000005	432387.82	3717380.78	159.12	3.40	5.88E-8	16.00		7.44	3.16
	L0000006	432402.10	3717388.02	158.60	3.40	5.88E-8	16.00		7.44	3.16
	L0000007	432416.37	3717395.26	157.90	3.40	5.88E-8	16.00		7.44	3.16
	L0000008	432430.64	3717402.49	157.18	3.40	5.88E-8	16.00		7.44	3.16
	L0000009	432444.91	3717409.73	156.43	3.40	5.88E-8	16.00		7.44	3.16
	L0000010	432459.18	3717416.96	155.65	3.40	5.88E-8	16.00		7.44	3.16
	L0000011	432473.45	3717424.20	154.81	3.40	5.88E-8	16.00		7.44	3.16
	L0000012	432487.99	3717430.81	153.91	3.40	5.88E-8	16.00		7.44	3.16
	L0000013	432502.94	3717436.51	152.94	3.40	5.88E-8	16.00		7.44	3.16
	L0000014	432517.89	3717442.22	151.90	3.40	5.88E-8	16.00		7.44	3.16
	L0000015	432532.84	3717447.92	150.81	3.40	5.88E-8	16.00		7.44	3.16
	L0000016	432547.79	3717453.63	149.67	3.40	5.88E-8	16.00		7.44	3.16
	L0000017	432562.74	3717459.33	148.48	3.40	5.88E-8	16.00		7.44	3.16
	L0000018	432577.69	3717465.03	147.20	3.40	5.88E-8	16.00		7.44	3.16
	L0000019	432593.09	3717469.05	145.93	3.40	5.88E-8	16.00		7.44	3.16
	L0000020	432608.87	3717471.71	144.70	3.40	5.88E-8	16.00		7.44	3.16
	L0000021	432624.65	3717474.37	143.45	3.40	5.88E-8	16.00		7.44	3.16
	L0000022	432640.43	3717477.03	142.31	3.40	5.88E-8	16.00		7.44	3.16
	L0000023	432656.20	3717479.69	141.29	3.40	5.88E-8	16.00		7.44	3.16
	L0000024	432671.98	3717482.35	140.34	3.40	5.88E-8	16.00		7.44	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1	L0000025	432687.76	3717485.01	139.42	3.40	5.88E-8	16.00		7.44	3.16
	L0000026	432703.54	3717487.67	138.62	3.40	5.88E-8	16.00		7.44	3.16
	L0000027	432719.25	3717490.70	137.89	3.40	5.88E-8	16.00		7.44	3.16
	L0000028	432734.95	3717493.77	137.25	3.40	5.88E-8	16.00		7.44	3.16
	L0000029	432750.65	3717496.83	136.71	3.40	5.88E-8	16.00		7.44	3.16
	L0000030	432766.36	3717499.89	136.26	3.40	5.88E-8	16.00		7.44	3.16
	L0000031	432782.06	3717502.95	135.90	3.40	5.88E-8	16.00		7.44	3.16
	L0000032	432797.77	3717506.01	135.55	3.40	5.88E-8	16.00		7.44	3.16
	L0000033	432813.47	3717509.07	135.18	3.40	5.88E-8	16.00		7.44	3.16
	L0000034	432829.18	3717512.13	134.74	3.40	5.88E-8	16.00		7.44	3.16
	L0000035	432844.88	3717515.19	134.21	3.40	5.88E-8	16.00		7.44	3.16
	L0000036	432860.59	3717518.25	133.63	3.40	5.88E-8	16.00		7.44	3.16
	L0000037	432876.29	3717521.31	133.00	3.40	5.88E-8	16.00		7.44	3.16
	L0000038	432892.00	3717524.37	132.28	3.40	5.88E-8	16.00		7.44	3.16
	L0000039	432907.70	3717527.43	131.53	3.40	5.88E-8	16.00		7.44	3.16
	L0000040	432923.40	3717530.49	130.75	3.40	5.88E-8	16.00		7.44	3.16
	L0000041	432939.11	3717533.55	129.83	3.40	5.88E-8	16.00		7.44	3.16
	L0000042	432954.81	3717536.61	128.86	3.40	5.88E-8	16.00		7.44	3.16
	L0000043	432970.49	3717539.80	127.86	3.40	5.88E-8	16.00		7.44	3.16
	L0000044	432986.07	3717543.46	126.78	3.40	5.88E-8	16.00		7.44	3.16
	L0000045	433001.64	3717547.12	125.60	3.40	5.88E-8	16.00		7.44	3.16
	L0000046	433017.22	3717550.79	124.43	3.40	5.88E-8	16.00		7.44	3.16
	L0000047	433032.79	3717554.45	123.20	3.40	5.88E-8	16.00		7.44	3.16
	L0000048	433048.37	3717558.12	121.95	3.40	5.88E-8	16.00		7.44	3.16
	L0000049	433063.94	3717561.78	120.68	3.40	5.88E-8	16.00		7.44	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1	L0000050	433079.51	3717565.45	119.49	3.40	5.88E-8	16.00		7.44	3.16
	L0000051	433095.43	3717566.67	118.18	3.40	5.88E-8	16.00		7.44	3.16
	L0000052	433111.41	3717567.45	116.89	3.40	5.88E-8	16.00		7.44	3.16
	L0000053	433127.40	3717568.23	115.60	3.40	5.88E-8	16.00		7.44	3.16
	L0000054	433143.38	3717569.01	114.33	3.40	5.88E-8	16.00		7.44	3.16
	L0000055	433159.36	3717569.79	113.06	3.40	5.88E-8	16.00		7.44	3.16
	L0000056	433175.34	3717570.57	111.81	3.40	5.88E-8	16.00		7.44	3.16
	L0000057	433191.32	3717571.35	110.59	3.40	5.88E-8	16.00		7.44	3.16
	L0000058	433207.07	3717568.71	109.38	3.40	5.88E-8	16.00		7.44	3.16
	L0000059	433222.81	3717565.81	108.19	3.40	5.88E-8	16.00		7.44	3.16
	L0000060	433238.54	3717562.91	107.03	3.40	5.88E-8	16.00		7.44	3.16

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID: DPM	List of Sources in Group (Source Range or Single Sources)
	SITE
	ROAD1

Variable Emissions

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: Scenario 1

Source ID:	**SITE**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**ROAD1**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	433064.66	3717636.96	RES	136.27	
2	432739.31	3717670.08	RES	141.13	
3	432739.31	3717657.42	RES	140.71	
4	432739.31	3717644.75	RES	140.22	
5	432741.26	3717624.30	RES	139.47	
6	432751.98	3717608.71	RES	138.80	
7	432755.87	3717591.18	RES	138.17	
8	432773.41	3717581.44	RES	137.35	
9	432783.15	3717572.67	NEAR-RES	136.89	
10	432795.81	3717564.88	NEAR-RES	136.51	
11	432838.67	3717560.01	NEAR-RES	136.43	
12	432852.31	3717562.93	NEAR-RES	136.59	
13	432867.89	3717563.90	NEAR-RES	136.82	
14	432884.45	3717564.88	NEAR-RES	137.02	
15	432897.12	3717568.77	NEAR-RES	137.12	
16	432922.44	3717596.05	RES	137.57	
17	432917.57	3717612.61	RES	137.76	
18	432912.70	3717627.22	RES	137.95	
19	432911.73	3717639.88	RES	138.14	
20	432914.65	3717655.47	RES	138.39	
21	432902.96	3717668.13	RES	138.48	
22	432891.27	3717685.67	RES	138.77	
23	432876.66	3717693.46	RES	139.05	
24	432864.97	3717704.17	RES	139.42	
25	432848.41	3717710.99	RES	139.75	
26	432833.80	3717714.89	RES	140.01	
27	432823.08	3717718.79	RES	140.23	
28	432806.53	3717719.76	RES	140.49	
29	432793.86	3717718.79	RES	140.83	
30	432776.33	3717718.79	RES	141.18	

31	432783.15	3717670.08	RES	141.06
32	432795.81	3717673.98	RES	140.93
33	432811.40	3717673.98	RES	140.54
34	432837.70	3717666.18	RES	139.72
35	432847.44	3717651.57	RES	139.26
36	432859.13	3717636.96	RES	138.59
37	432863.02	3717621.38	RES	138.07
38	432864.97	3717601.89	RES	137.40
39	432831.85	3717608.71	RES	136.73
40	432812.37	3717615.53	RES	137.42
41	432799.71	3717624.30	RES	138.43
42	432788.02	3717642.81	RES	139.89
43	432860.10	3717380.77	OFFICE	133.68
44	432860.10	3717356.42	OFFICE	133.55
45	432851.33	3717296.03	OFFICE	133.24
46	432855.23	3717280.44	OFFICE	133.33
47	432856.20	3717245.37	OFFICE	133.85
48	432853.28	3717225.89	OFFICE	133.89
49	432844.52	3717175.24	OFFICE	134.18
50	432836.72	3717146.99	OFFICE	134.21
51	432751.00	3717323.30	COMM	136.79
52	432723.73	3717319.41	COMM	136.77
53	432702.30	3717314.54	COMM	136.87
54	432754.90	3717292.13	COMM	136.56
55	432763.67	3717266.80	COMM	136.64
56	432765.61	3717241.48	COMM	136.47
57	432765.61	3717213.23	COMM	136.51
58	432719.83	3717262.91	COMM	136.88
59	432718.86	3717241.48	COMM	136.93
60	432688.66	3717258.04	COMM	137.07
61	432669.18	3717258.04	COMM	137.05
62	432649.70	3717299.92	COMM	137.18
63	432675.02	3717307.72	COMM	137.19
64	432567.87	3717271.68	COMM	139.31
65	432574.69	3717252.19	COMM	139.38
66	432555.21	3717240.50	COMM	139.43
67	432566.90	3717216.15	COMM	139.23
68	432586.38	3717225.89	COMM	139.17

69	432599.04	3717164.52	COMM	138.54
70	432617.55	3717175.24	COMM	138.07
71	432689.63	3717159.65	COMM	137.00
72	432677.94	3717130.43	COMM	136.96
73	432748.08	3717138.22	COMM	137.29
74	432740.29	3717118.74	COMM	137.28
75	432530.86	3717371.03	COMM	140.19
76	432543.52	3717345.71	COMM	140.47
77	432541.57	3717326.22	COMM	140.67
78	432528.91	3717308.69	COMM	140.40
79	432605.86	3717404.15	COMM	138.88
80	432581.51	3717396.36	COMM	138.78
81	432590.28	3717372.98	COMM	138.78
82	432611.71	3717380.77	COMM	138.77
83	432673.07	3717441.17	COMM	138.29
84	432648.72	3717434.35	COMM	138.21
85	432668.20	3717409.02	COMM	138.33
86	432965.30	3717204.46	NEAR-RES	119.56
87	433012.06	3717205.44	RES	118.77
88	433058.82	3717211.28	RES	118.60
89	433104.60	3717211.28	RES	118.50
90	433045.18	3717163.55	RES	118.80
91	433016.93	3717157.71	RES	118.94
92	432995.50	3717130.43	RES	119.28
93	432967.25	3717140.17	RES	119.33
94	432963.35	3717093.42	RES	120.15
95	432982.84	3717097.31	RES	120.07
96	432960.43	3717067.12	RES	120.08
97	432976.99	3717069.06	RES	120.04
98	432960.43	3717036.92	RES	119.70
99	432983.81	3717035.94	RES	119.72
100	433010.11	3717055.43	RES	119.22
101	433026.67	3717122.64	RES	118.98
102	433045.18	3717091.47	RES	118.96
103	432651.64	3717505.46	NEAR-RES	141.28
104	432630.21	3717505.46	RES	141.44
105	432605.86	3717504.48	RES	141.70
106	432580.53	3717503.51	RES	141.90

107	432559.10	3717499.61	RES	142.20
108	432537.67	3717495.72	RES	142.38
109	432507.48	3717517.15	RES	142.81
110	432508.45	3717501.56	RES	142.70
111	432531.83	3717515.20	RES	142.38
112	432547.42	3717518.12	RES	142.31
113	432586.38	3717523.97	RES	141.86
114	432607.81	3717524.94	RES	141.76
115	432630.21	3717553.19	RES	141.38
116	432628.27	3717535.66	RES	141.52
117	432651.64	3717556.11	RES	141.17
118	432649.70	3717534.68	RES	141.22
119	432632.16	3717579.49	RES	141.44
120	432649.70	3717579.49	RES	141.34
121	432627.29	3717599.95	RES	141.65
122	432649.70	3717601.89	RES	141.49
123	432631.19	3717619.43	RES	141.82
124	432640.93	3717620.40	RES	141.76
125	432626.32	3717639.88	RES	142.42
126	432646.77	3717640.86	RES	142.25
127	432626.32	3717665.21	RES	142.47
128	432646.77	3717666.18	RES	142.30
129	433017.90	3717513.25	NEAR-RES	130.76
130	433019.85	3717493.77	NEAR-RES	131.35
131	433019.85	3717478.18	NEAR-RES	131.55
132	433020.83	3717464.55	NEAR-RES	131.69
133	433023.75	3717449.93	NEAR-RES	131.79
134	433025.70	3717437.27	NEAR-RES	131.92
135	433022.77	3717419.74	NEAR-RES	132.06
136	433027.65	3717404.15	NEAR-RES	132.20
137	433036.41	3717389.54	NEAR-RES	132.36
138	433064.66	3717396.36	RES	132.15
139	433073.43	3717408.05	RES	132.08
140	433080.25	3717428.50	RES	132.02
141	433072.45	3717439.22	RES	131.90
142	433062.71	3717455.78	RES	131.76
143	433060.76	3717468.44	RES	131.59
144	433057.84	3717485.00	RES	131.31

145	433061.74	3717499.61	RES	131.18
146	433099.73	3717507.41	RES	125.42
147	433101.68	3717491.82	RES	125.49
148	433102.65	3717477.21	RES	125.56
149	433102.65	3717460.65	RES	125.73
150	433140.64	3717507.41	RES	125.20
151	433140.64	3717494.74	RES	125.38
152	433140.64	3717476.24	RES	125.56
153	433139.67	3717460.65	RES	125.68
154	433143.56	3717446.04	RES	125.82
155	433139.67	3717432.40	RES	125.80
156	433137.72	3717413.89	RES	125.69
157	433134.80	3717396.36	RES	125.54
158	433128.95	3717381.75	RES	125.43
159	433123.11	3717372.01	RES	125.32
160	433178.63	3717386.62	RES	117.71
161	433181.55	3717403.18	RES	118.00
162	433182.53	3717418.76	RES	118.19
163	433181.55	3717434.35	RES	118.44
164	433182.53	3717450.91	RES	118.56
165	433182.53	3717467.47	RES	118.61
166	433179.60	3717479.16	RES	118.90
167	433178.63	3717494.74	RES	119.09
168	433179.60	3717508.38	RES	119.17
169	433222.46	3717497.67	RES	118.85
170	433221.49	3717483.05	RES	118.76
171	433220.52	3717468.44	RES	118.64
172	433219.54	3717455.78	RES	118.46
173	433219.54	3717437.27	RES	118.22
174	433219.54	3717419.74	RES	118.07
175	433219.54	3717403.18	RES	117.96
176	433219.54	3717392.46	RES	117.94
177	433213.70	3717373.96	RES	117.73
178	433211.75	3717356.42	RES	117.51
179	433201.03	3717345.71	RES	117.41
180	433149.41	3717218.10	RES	114.94
181	433153.30	3717202.51	RES	114.97
182	433154.28	3717185.95	RES	115.02

183	433131.87	3717283.36	POS	116.58
184	433216.62	3717292.13	RES	110.56
185	433202.98	3717683.72	RES	127.17
186	433192.27	3717670.08	RES	127.12
187	433187.40	3717657.42	RES	127.15
188	433168.89	3717636.96	RES	127.24
189	433164.99	3717631.12	RES	127.26
190	433138.69	3717623.32	RES	127.54
191	433113.37	3717616.51	RES	127.54
192	433126.03	3717653.52	RES	127.43
193	433129.93	3717675.93	RES	127.55
194	433148.43	3717689.56	RES	127.29
195	433165.97	3717699.30	RES	127.13
196	433182.53	3717710.99	RES	126.99
197	433004.27	3717603.84	RES	136.04
198	433034.46	3717615.53	RES	136.17
199	433059.79	3717624.30	RES	136.26
200	433070.51	3717648.65	RES	136.44
201	433077.32	3717667.16	RES	136.48
202	433086.09	3717684.69	RES	136.51
203	433036.41	3717662.29	RES	136.26
204	433025.70	3717644.75	RES	136.15
205	432992.58	3717651.57	RES	135.99
206	432993.55	3717634.04	RES	136.10
207	432996.47	3717699.30	RES	136.25
208	433007.19	3717698.33	RES	136.25
209	433035.44	3717694.43	RES	136.43
210	433052.00	3717691.51	RES	136.51
211	433046.15	3717735.35	RES	144.59
212	433064.66	3717738.27	RES	144.61
213	433106.55	3717739.24	RES	144.48
214	433140.64	3717763.59	RES	144.13
215	433015.96	3717745.09	RES	144.23
216	433001.34	3717746.06	RES	144.25
217	433013.03	3717772.36	RES	144.09
218	433000.37	3717787.95	RES	143.86
219	433070.51	3717767.49	RES	144.64
220	433089.99	3717766.52	RES	144.61

221	433115.31	3717778.21	RES	144.21
222	433082.19	3717791.84	RES	144.45
223	433085.12	3717812.30	RES	144.14
224	433018.88	3717830.81	RES	144.25
225	432420.78	3717653.52	RES	147.63
226	432412.02	3717635.01	RES	148.43
227	432403.25	3717614.56	RES	149.54
228	432399.35	3717597.02	RES	150.32
229	432392.53	3717581.44	RES	150.75
230	432401.30	3717561.96	RES	151.68
231	432405.20	3717539.55	RES	152.41
232	432417.86	3717525.91	RES	153.17
233	432426.63	3717511.30	RES	153.62
234	432442.21	3717493.77	RES	154.30
235	432454.88	3717478.18	RES	154.87
236	432463.64	3717462.60	RES	155.39
237	432419.81	3717443.12	RES	155.37
238	432374.03	3717665.21	RES	147.96
239	432351.62	3717618.45	RES	149.81
240	432353.57	3717541.50	RES	151.94
241	432374.03	3717496.69	RES	153.23
242	432397.40	3717469.42	RES	154.27
243	432434.42	3717745.09	RES	149.10
244	432423.71	3717692.48	RES	147.87
245	432478.25	3717775.28	RES	146.19
246	432483.13	3717728.53	RES	145.63
247	432482.15	3717689.56	RES	145.15
248	432525.01	3717764.57	RES	145.66
249	432527.93	3717725.60	RES	145.22
250	432529.88	3717693.46	RES	144.71
251	432466.57	3717650.60	RES	144.70
252	432491.89	3717655.47	RES	144.61
253	432458.77	3717628.19	RES	144.65
254	432493.84	3717631.12	RES	144.36
255	432454.88	3717608.71	RES	144.27
256	432496.76	3717608.71	RES	143.87
257	432481.18	3717585.33	RES	143.90
258	432485.07	3717561.96	RES	144.14

259	432485.07	3717544.42	RES	144.04
260	432447.08	3717576.57	RES	144.34
261	432541.57	3717653.52	RES	143.81
262	432544.49	3717630.14	RES	143.67
263	432581.51	3717636.96	RES	142.55
264	432594.17	3717599.95	RES	142.11
265	432571.77	3717598.00	RES	142.30
266	432535.73	3717612.61	RES	143.25
267	432550.34	3717574.62	RES	142.66
268	432532.80	3717567.80	RES	142.82
269	433296.50	3717761.65	RES	125.93
270	432563.00	3717816.20	RES	146.67
271	432524.04	3717806.45	RES	146.51
272	432604.89	3717823.01	RES	146.01
273	432641.90	3717826.91	RES	145.99
274	432691.58	3717861.98	RES	146.69
275	432694.50	3717803.53	RES	145.15
276	432695.48	3717757.75	RES	143.96
277	432698.40	3717711.97	RES	142.76
278	432640.93	3717763.59	RES	144.60
279	432642.88	3717708.07	RES	143.08
280	432611.71	3717762.62	RES	144.72
281	432603.91	3717710.02	RES	143.19
282	432559.10	3717758.72	RES	145.64
283	432564.95	3717702.23	RES	144.81
284	432731.52	3717806.45	RES	145.17
285	432731.52	3717757.75	RES	143.91
286	432731.52	3717707.10	RES	142.53
287	432730.55	3717861.98	RES	146.58
288	432776.33	3717861.98	RES	145.97
289	432778.28	3717808.40	RES	144.47
290	432778.28	3717764.57	RES	143.22
291	432832.83	3717862.95	POS	142.56
292	432875.69	3717861.98	POS	145.65
293	432923.42	3717864.90	POS	150.03
294	432825.03	3717810.35	POS	141.35
295	432876.66	3717810.35	POS	142.93
296	432921.47	3717806.45	POS	146.21

297	432831.85	3717767.49	POS	140.42	
298	432880.56	3717768.46	POS	142.69	
299	432916.60	3717748.98	POS	143.48	
300	432982.84	3717351.55	POS	118.23	
301	432961.41	3717332.07	POS	117.83	
302	432931.21	3717297.98	POS	117.79	
303	433022.77	3717307.72	POS	117.89	
304	432999.40	3717286.29	POS	117.26	
305	432961.41	3717255.12	POS	117.63	
306	433055.89	3717282.39	POS	117.48	
307	433024.72	3717256.09	POS	116.75	
308	433004.27	3717237.58	POS	116.91	
309	433068.56	3717245.37	POS	116.23	
310	433197.14	3717276.55	POS	111.70	
311	433176.68	3717247.32	POS	113.65	
312	433173.76	3717310.64	POS	116.08	
313	433143.56	3717336.94	POS	117.58	
314	433099.73	3717359.34	POS	122.99	
315	432374.03	3717318.43	COMM	160.15	
316	432400.33	3717259.01	COMM	159.39	
317	432425.65	3717231.74	COMM	159.09	
318	432967.25	3717407.07	INDUST	126.01	
319	432782.17	3717036.92	POS	142.12	
320	432832.83	3717007.70	POS	137.28	
321	432691.58	3717064.19	POS	137.94	
322	432383.77	3717207.38	POS	159.87	
323	432475.33	3717145.04	POS	160.91	
324	432651.64	3717085.62	POS	138.12	
325	433823.13	3716702.40	POS	88.14	
326	432709.08	3717636.99	POS	140.33	

Plant Boundary Receptors

Receptor Groups

Record Number	Group ID	Group Description
1	COMM	Non-Residential Commerical
2	OFFICE	Non-Residential Office
3	POS	Non-Residential Park - Open Space
4	RES	Residential
5	INDUST	Non-Residential -Industrial
6	NEAR-RES	Residential

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: Met\MSVJ_V11_trimmed.sfc
Format Type: Default AERMET format

Profile Met Data

Filename: Met\MSVJ_V11_trimmed.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 168.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2017			
Upper Air		2017			
On-Site		2017			

Data Period

Data Period to Process

Start Date: 1/1/2017 Start Hour: 1 End Date: 12/31/2021 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

Results Summary

Argonaut Residential Project
Construction HRA - DPM

PM10 - Concentration - Source Group: DPM

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.06186	ug/m^3	432860.10	3717380.77	133.68	0.00	133.68	

Sensitive Receptor Summary

Argonaut Residential Project
Construction HRA - DPM

PM10 - Concentration - Source Group: DPM

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.02399	ug/m^3		432783.15	3717572.67	136.89	0.00	136.89	
PERIOD		0.03067	ug/m^3		432795.81	3717564.88	136.51	0.00	136.51	
PERIOD		0.03893	ug/m^3	MEIR	432838.67	3717560.01	136.43	0.00	136.43	
PERIOD		0.03582	ug/m^3		432852.31	3717562.93	136.59	0.00	136.59	
PERIOD		0.03246	ug/m^3		432867.89	3717563.90	136.82	0.00	136.82	
PERIOD		0.02807	ug/m^3		432884.45	3717564.88	137.02	0.00	137.02	
PERIOD		0.02390	ug/m^3		432897.12	3717568.77	137.12	0.00	137.12	

HEALTH RISK ASSESSMENT CALCULATIONS

Argonaut Residential Project

The Health Risk Assessment (HRA) follows South Coast Air Quality Management District (SCAQMD) Risk Assessment Guidelines and is based on foundational Office of Environmental Health Hazard Assessment (OEHHA) Guidance[1]. This risk assessment intake methodology addresses children's greater sensitivity and health impacts from early exposure to carcinogenic compounds. The chemical intake or dose describing the frequency and duration of the exposure is estimated using receptor's breathing rates, exposure duration, and exposure frequency. The calculations include the use of age-specific weighting factors, breathing rates, fraction of time at home, and reduced exposure durations.

The HRA was conducted utilizing the California Air Resources Board's (ARB's) Hot Spots Analysis and Reporting Program Version 2 (HARP2) to automatically calculate risks for the projects using OEHHA promulgated cancer potency and reference exposure levels. The approach used in HARP is consistent with SCAQMD's risk assessment guidance methodology under permitting rules 1401 and 212.[2]

These factors are described below, followed by a summary of the HARP2 HRA inputs to determine risk from the maximally exposed individual resident and worker.

AERMOD Inputs — The AMS/EPA Regulatory Model (AERMOD) was utilized to predict the ground level concentrations resulting from the emissions of Diesel Particulate Matter (DPM) (represented as PM_{10} exhaust) associated with construction activities. The modeling included both emissions generated at the project site and those generated along the anticipated haul roads within approximately 1,000 ft of the site boundary. Diesel exhaust from material movement were characterized by an area source with a height of 5 meters to account for the height of the construction exhaust from the off-road equipment. Roadway emissions were modeled as line-volume sources or adjacent volume sources using US EPA Haul Road Guidance. The modeling utilized Urban dispersion coefficients and SCAQMD-provided meteorological data from the Mission Viejo meteorological station (MSVJ). Emissions were modeled only during the hours of 8 AM – 5 PM (with a one-hour break for lunch) Monday to Friday. DPM Emissions were calculated using CalEEMod using emissions from PM_{10} exhaust from diesel vehicles and off-road construction equipment exhaust.

Age Sensitivity Factors — Studies have shown that young animals are more sensitive than adult animals to exposure to many carcinogens.[3] Therefore, OEHHA developed age sensitivity factors (ASFs) to account for the increased sensitivity to carcinogens during early-in-life exposures. Accordingly, the cancer risk methodology applies different ASFs by age groups. The ASFs utilized a 10-fold multiplier in sensitivity for

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[1] Office of Environmental Health Hazard Assessment (OEHHA). 2015. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Website: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed December 24, 2024.

[2] South Coast Air Quality Management District (SCAQMD). 2017. Risk Assessment Procedures for Rules 1401, 1401.1 and 212 Version 8.1. September. Website: https://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf. Accessed December 24, 2024.

[3] Office of Environmental Health Hazard Assessment (OEHHA). 2009. Technical Support Document for Cancer Potency Factors 2009. June. Website: http://www.oehha.ca.gov/air/hot_spots/tsd052909.html. Accessed December 24, 2024.

the third trimester and infants less than age 2, a 3-fold increase in sensitivity for children ages 2 to 16 years old, and a sensitivity factor of 1 for ages 16 and older.

Daily breathing rates (age-specific daily air intake) — Breathing rates are determined for specific age groups (i.e., third trimester, 0-2, 2-16, and 16-30 years). The analysis follows ARB's Risk Management Policy (RMP) that includes recommendations for inhalation exposures. For residential exposures, SCAQMD procedures adopt ARB's RMP policy which recommends using the high-end daily breathing rates (DBR) (e.g., 95th percentile) for children from the third trimester through age 2, and 80th percentile DBR for all other ages.[4]

Time at home – The time at home applies only applies to residential receptors. Residents are assumed to be at home 350 days per year, which assumes individuals are away for approximately 2 weeks of vacation. The fraction of time at home refers to the estimated amount of time residents stay at home during these 350 days. The HRA assumes 100 percent time at home for receptors under age 16. Since the duration of construction is only 1.53 years, all exposure is for infants/children less than 16 years of age.

Exposure Duration — OEHHA 2015 guidelines specify a 30-year residential exposure duration for estimating cancer risk at the maximum exposed individual resident (MEIR). This is based on studies showing that 30 years is a reasonable estimate of the 90th to 95th percentile of residency duration in the population. A 25-year standard exposure duration is the default to estimate cancer risk for off-site workers. However, risk assessors can use other exposure durations with proper justification and documentation. For example, short-term projects (e.g., construction projects) can now be evaluated for as short a duration as 6 months. Because there are no significant sources of TAC emissions during operations, the exposure assessment is limited to the duration of the proposed project construction 399 workdays or 1.53 years.

Residential Cancer Risk — Cancer risk for individual resident receptors exposed to DPM were calculated utilizing HARP2. Consistent with OEHHA guidance, the start of residential exposure was assumed to occur in the third trimester (-0.25 years) to accommodate the increased susceptibility of exposures in early life. Inhalation is the only exposure pathway included in the OEHHA risk assessment guidelines for Diesel Exhaust. The exposure assessment was modeled for Inhalation pathway only, using Risk Management Program.

Exposure Duration Bin Distribution:

3rd Trimester Bin: 0.25
0<2 Years Bin: 1.28
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0

[4] California Air Resources Board (ARB) and California Air Pollution Control Officers Association. 2015. Risk Management Guidance for Stationary Sources of Air Toxics. July 23. Website: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/rma/rmgssat.pdf. Accessed December 24, 2024.

16 to 70 Years Bin: 0

Worker Cancer Risk — Cancer risk for off-site worker receptors exposed to DPM were calculated utilizing HARP2. Consistent with OEHHA guidance, the start of residential exposure was assumed to start at age 16 and occur over the construction period of 1.53 years. Inhalation is the only exposure pathway included in the OEHHA risk assessment guidelines for Diesel Exhaust. The exposure assessment was modeled for Inhalation pathway only, using Risk Management Program assuming the 80th percentile breathing rate for adults. All exposure is in the adult age bin (16 <30 years), with no adjustments for age sensitivity.

The worker adjustment factor (WAF) is used to determine the long-term concentration the worker is breathing during their work shift. Therefore, the long-term concentration is adjusted so it is based only on the hours when the worker is present. For this project, assuming the emitting source and worker's schedules are the same, the adjustment factor is 4.2 = (24 hours per day/8 hours per shift) x (7 days in a week/5 days in a work week).

HARP2 provides for the specification of the WAF for worker cancer risk assessments, and this was entered as 4.2 to make this adjustment.

Noncancer Chronic Health Risks

Chronic RELs are used to assess residential health impacts characterized by the chronic hazard index, affecting the respiratory system for DPM.

Potential chronic noncancer health impacts use the long-term annual average concentration regardless of the emitting facility's schedule.

HARP2 - HRACalc (dated 22118) 1/1/2025 3:06:32 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 1.28

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 1.28
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\49400049\ConHRA\HARP2\ResCancerCancerRisk.csv
HRA ran successfully

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
432838.67	3717560.01	DieselExhPM	0.039	8.7296e-06	1.28YrCancerRMP_Inh	8.7296e-06

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\49400049\ConHRA\HARP2\ResChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 1/16/2025 5:43:02 AM -
Chronic Risk - Input File: F:\Jobs\49400049\ConHRA\HARP2\ResChronicHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
432838.67	3717560.01	DieselExhPM	0.039	0.0	0.0	0.0	0.0	0.0	0.0	0.0078	0.0	0.0	0.0	0.0	0.0	0.0	0.0

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 16
Total Exposure Duration: 1.53

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 1.53
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\49400049\ConHRA\HARP2\WorkerCancerCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 1/1/2025 3:09:59 AM -
Cancer Risk - Input File: F:\Jobs\49400049\ConHRA\HARP2\WorkerCancerHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
432860.1	3717380.77	DieselExhPM	0.062	1.0292e-06	1.53YrCancerDerived_Inh	1.0292e-06

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\49400049\ConHRA\HARP2\WorkerChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 1/16/2025 5:43:39 AM -
Chronic Risk - Input File: F:\Jobs\49400049\ConHRA\HARP2\WorkerChronicHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
432860.1	3717380.77	DieselExhPM	0.062	0.0	0.0	0.0	0.0	0.0	0.0	0.0124	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Argonaut Residential 0.054 bhphr/gal

Construction Equipment - Unmitigated 18.5 gal/bhp-hr

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor	Days	bhp-hr	gallons
Demolition	Concrete/Industrial Saws	Diesel	Average	1	8	33	0.73	20	3854	208
Demolition	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4	20	23488	1268
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3	8	84	0.37	20	14918	806
Site Preparation	Graders	Diesel	Average	1	8	148	0.41	3	1456	79
Site Preparation	Scrapers	Diesel	Average	1	8	423	0.48	3	4873	263
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1	7	84	0.37	3	653	35
Grading	Graders	Diesel	Average	1	8	148	0.41	6	2913	157
Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4	6	7046	381
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2	7	84	0.37	6	2611	141
Building Construction	Cranes	Diesel	Average	1	8	367	0.29	330	280975	15173
Building Construction	Forklifts	Diesel	Average	2	7	82	0.2	330	75768	4091
Building Construction	Generator Sets	Diesel	Average	1	4	14	0.74	330	13675	738
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1	6	84	0.37	330	61538	3323
Building Construction	Welders	Electric	Average	3	8	46	0.45	330	0	0
Paving	Cement and Mortar Mixers	Diesel	Average	1	8	10	0.56	20	896	48
Paving	Pavers	Diesel	Average	1	8	81	0.42	20	5443	294
Paving	Paving Equipment	Diesel	Average	1	8	89	0.36	20	5126	277
Paving	Rollers	Diesel	Average	2	8	36	0.38	20	4378	236
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1	8	84	0.37	20	4973	269
Architectural Coating	Air Compressors	Electric	Average	1	6	37	0.48	20	0	0
										27,788

Argonaut Residential

5.3. Construction Vehicles

5.3.1 Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Days	VMT	Vehicle Mix
Demolition						
Demolition	Worker	13	18.5	20	4625	LDA,LDT1,LDT2
Demolition	Vendor		10.2			HHDT,MHDT
Demolition	Hauling	81	20	20	32500	HHDT
Demolition	Onsite truck					HHDT
Site Preparation						
Site Preparation	Worker	8	18.5	3	416	LDA,LDT1,LDT2
Site Preparation	Vendor		10.2			HHDT,MHDT
Site Preparation	Hauling	0	20	3	0	HHDT
Site Preparation	Onsite truck					HHDT
Grading						
Grading	Worker	10	18.5	6	1110	LDA,LDT1,LDT2
Grading	Vendor		10.2			HHDT,MHDT
Grading	Hauling	50	20	6	6000	HHDT
Grading	Onsite truck					HHDT
Building Construction						
Building Construction	Worker	44	18.5	330	268132	LDA,LDT1,LDT2
Building Construction	Vendor	7	10.2	330	21949	HHDT,MHDT
Building Construction	Hauling	0	20	330	0	HHDT
Building Construction	Onsite truck					HHDT
Paving						
Paving	Worker	15	18.5	20	5550	LDA,LDT1,LDT2
Paving	Vendor		10.2			HHDT,MHDT
Paving	Hauling	9	20	20	3600	HHDT
Paving	Onsite truck					HHDT
Architectural Coating						
Architectural Coating	Worker	9	18.5	20	3250	LDA,LDT1,LDT2
Architectural Coating	Vendor		10.2			HHDT,MHDT
Architectural Coating	Hauling	0	20	20	0	HHDT
Architectural Coating	Onsite truck					HHDT

		(County-Specific Fuel Efficiency)
mpg	gal/mile	EMFAC Vehicle Category
30.69	0.033	LDA
25.63	0.039	LDT1
25.05	0.040	LDT2
8.98	0.111	MHDT
6.06	0.165	HHDT

Gasoline for Light Duty and Diesel for Heavy Duty - Consistent with CalEEMod Assumptions

		Orange County	**2025**
VMT TOTALS	**Vehicle Category**	**Fuel Efficiency (MPG)**	**Fuel (gallons)**
283,083	LDA,LDT1,LDT2	26.75	10583
21,949	HHDT,MHDT	7.52	2919
-	MHDT	8.98	0
42,100	HHDT	6.06	6947
			20,449

Argonaut Residential

5.11. Operational Energy Consumption

5.11.1 Unmitigated

Land Use	Electricity (kWh/yr)	Natural Gas (kBTU/yr)
Condo/Townhouse	444090	0
Parking Lot	34724	0
	478,814	

Argonaut Residential
Energy Calculations - Operations Fuel Use from On-Road Mobile Sources

Region	Orange
OpYear	2027

Fuel Consumption by Vehicle Category - Annual Usage (gallons ; KWh-hr for Electicity)

Fuel	Usage	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	**45,054**	1	18643	1986	11703	1539	284	692	8703	631	736	83	43	11
Diesel	**4,243**	1073	31	0	36	628	326		101	166	1788	38	54	
Natural Gas	**378**	136									20	6	107	109
Electricity	**22,959**	237	18796	97	1374	438	114		1455		415	9	20	5

EMFAC Default Mix- County Popuation	VMT	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Orange County Population	**2,366,528**	13,648	1,170,612	94,631	558,478	65,876	17,275	52,507	343,688	8,510	36,755	1,419	2,287	841
Vehicle Mix Default	**1**	0.6%	49.5%	4.0%	23.6%	2.8%	0.7%	2.2%	14.5%	0.4%	1.6%	0.1%	0.1%	0.0%

Vehicle Types /Mix in CalEEMod	VMT	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Condo/Townhouse	1325753	1	1	1	1	1	1	1	1	1	1	1	1	1

Vehicle Percentages Modeled	VMT	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Condo/Townhouse	1325753	0.6%	49.5%	4.0%	23.6%	2.8%	0.7%	2.2%	14.5%	0.4%	1.6%	0.1%	0.1%	0.0%

Condo/Townhouse **Fuel Consumption by Vehicle Category**

Fuel Consumption for CVMT	**Units**	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	**gal**	1	18306	1983	11647	1539	284	692	8666	631	736	83	43	11
Diesel	**gal**	1073	31	0	36	628	326		101	166	1788	38	54	
Natural Gas	**gal**	136									20	6	107	109
Plug-in Hybrid (Gasoline)	**gal**		337	3	56				37					
Fuel Consumption for EVMT	**Units**	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	**kwhr**	237	18796	97	1374	438	114		1455		415	9	20	5
Plug-in Hybrid (Electricity)	**kwhr**		3417	34	616				389					

County and Year Specific - Fuel Efficiency

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	gal/mi	0.222	0.031	0.038	0.038	0.067	0.077	0.024	0.047	0.205	0.190	0.186	0.111	0.077
Diesel	gal/mi	0.161	0.023	0.040	0.030	0.048	0.056	-	0.040	0.098	0.111	0.135	0.134	-
Natural Gas	gal/mi	0.162	-	-	-	-	-	-	-	-	0.117	0.108	0.229	0.336
Plug-in Hybrid	gal/mi	-	0.035	0.035	0.035	-	-	-	0.036	-	-	-	-	-

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	kwhr/mi	1.810	0.386	0.386	0.386	0.563	0.563	-	0.386	-	1.051	1.042	1.156	2.127
Plug-in Hybrid	kwhr/mi	-	0.302	0.302	0.302	-	-	-	0.302	-	-	-	-	-

Argonaut Residential
Energy Calculations - Operations Fuel Use from On-Road Mobile Sources

Total VMT Fraction by Fuel and Vehicle Category - Default EMFAC

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	0%	89%	99%	97%	62%	38%	100%	96%	65%	19%	56%	30%	31%
Diesel	87%	0.2%	0.0%	0.4%	35.8%	60.0%	0.0%	1.3%	35.4%	78.5%	35.8%	31.6%	0.0%
Natural Gas	11%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	6.8%	36.6%	68.9%
Electricity	2%	7.4%	0.5%	1.1%	2.1%	2.1%	0.0%	2.0%	0.0%	1.9%	1.1%	1.4%	0.5%
Plug-in Hybrid	0%	3.2%	0.4%	1.2%	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

CVMT/Total VMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diesel	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%	0%
Natural Gas	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%
Plug-in Hybrid	0%	46%	42%	44%	0%	0%	0%	44%	0%	0%	0%	0%	0%

EVMT/Total VMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%
Plug-in Hybrid	0%	53.89%	57.95%	56.18%	0.00%	0.00%	0.00%	55.57%	0.00%	0.00%	0.00%	0.00%	0.00%

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APPENDIX B:

Biological Resources Supporting Information

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Table 1: Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Dicots						
Aphanisma blitoides aphanisma	—	—	1B.2	Annual herb found in gravelly (sometimes) and sandy (sometimes) soils in coastal bluff scrub, coastal dunes, and coastal scrub. Elevation: 1–305 m Bloom period: February–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three recent and three historical records between five and ten miles from the project site.	No
Artemisia palmeri San Diego sagewort	—	—	4.2	Perennial deciduous shrub found in mesic and sandy soils in chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland. Elevation: 5–915 m Bloom period: May–September	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Astragalus brauntonii Braunton's milk-vetch	FE	—	1B.1	Perennial herb found in carbonate and sandstone soils in chaparral, coastal scrub, and valley and foothill grassland communities. Typically found in burned areas and sometimes in disturbed areas. Elevation: 4–640 m Bloom period: January–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record between five and ten miles from the project site.	No
Atriplex coulteri Coulter's saltbush	—	—	1B.2	Perennial herb found in alkaline or clay soils (sometimes) in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland communities. Elevation: 3–460 m Bloom period: March–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three historical records within five miles of the project site and there are three recent and eight historical records between five and ten miles from the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Atriplex pacifica south coast saltscale	—	—	1B.2	Annual herb found in coastal bluff scrub, coastal dunes, coastal scrub, and playas. Elevation: 0–140 m Bloom period: March–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records within five miles of the project site and one recent and two historical records between five and ten miles from the project site.	No
Atriplex parishii Parish's brittlescale	—	—	1B.1	Annual herb found in alkaline soils in chenopod scrub, playas, and vernal pools. Elevation: 25–1900 m Bloom period: June–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site. This species may be locally extirpated.	No
Atriplex serenana var. davidsonii Davidson's saltscale	—	—	1B.2	Annual herb found in alkaline soils in coastal bluff scrub and coastal scrub. Elevation: 10–200 m Bloom period: April–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one record within five miles of the project site and three historical records between five and ten miles from the project site.	No
Bahiopsis laciniata San Diego County viguiera	—	—	4.3	Perennial shrub found in chaparral and coastal scrub. Elevation: 60–750 m Bloom period: February–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Berberis nevinii Nevin's Barberry	FE	SE	1B.1	Perennial, evergreen shrub found on steep, north-facing slopes or in low-grade sandy washes in coastal scrub, chaparral, cismontane woodland, and riparian scrub communities. Elevation: 290–1,575 m Blooming period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Camissoniopsis lewisii Lewis' evening-primrose	—	—	3	Annual herb found in clay and sandy soils (sometimes) in coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland communities. Elevation: 0–300 m Bloom period: March–May	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Caulanthus simulans Payson's jewelflower	—	—	4.2	Annual herb found in granitic and sandy soils in chaparral and coastal scrub communities. Elevation: 90–2,200 m Bloom period: March–May	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Centromadia parryi ssp. *australis* southern tarplant	—	—	1B.1	Annual herb found in marshes and swamps (margins), valley and foothill grassland (vernally mesic), and vernal pools. Elevation: 0–480 m Bloom period: May–November	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record within five miles of the project site and six recent and thirteen historical records between five and ten miles from the project site.	No
Chaenactis glabriuscula var. *orcuttiana* Orcutt's pincushion	—	—	1B.1	Annual herb found in coastal bluff scrub (sandy) and coastal dunes. Elevation: 0–100 m Bloom period: January–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one recent and two historical records between five and ten miles from the project site.	No
Chloropyron maritimum salt marsh bird's-beak	FE	SE	1B.2	Annual, hemiparasitic herb found in coastal dunes, marsh and swamp, salt marsh, and wetlands communities. Elevation: 0–30 m Bloom period: May–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record between five and ten miles from the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Chorizanthe leptotheca Peninsular spineflower	—	—	4.2	Annual herb found in granitic soils in chaparral, coastal scrub, and lower montane coniferous forest communities. Elevation: 300–1,900 m Bloom period: May–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Chorizanthe polygonoides var. *longispina* long-spined spineflower	—	—	1B.2	Annual herb that occurs in valley and foothill grassland, coastal scrub, chaparral, meadows and seeps, and vernal pools. Elevation: 30–1,530 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Cistanthe maritima seaside cistanthe	—	—	4.2	Annual herb found in sandy soils in coastal bluff scrub, coastal scrub, and valley and foothill grassland. Elevation: 5–300 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Clinopodium chandleri San Miguel savory	—	—	1B.2	Perennial shrub found in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Sometimes in gabbroic and rocky soils. Elevation: 120–1,075 m Bloom period: March–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one record between five and ten miles from the project site.	No
Comarostaphylis diversifolia ssp. *diversifolia* summer holly	—	—	1B.2	Perennial evergreen shrub found in chaparral and cismontane woodland. Elevation: 30–790 m Bloom period: April–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are one recent and five historical records between five and ten miles from the project site.	No
Convolvulus simulans small-flowered morning-glory	—	—	4.2	Annual herb found in clay soils, seeps, and serpentine soils in openings in chaparral, coastal scrub, and valley and foothill grassland communities. Elevation: 30–740 m	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
				Bloom period: March–July		
Deinandra paniculata paniculate tarplant	—	—	4.2	Annual herb found in sandy soils (sometimes) and in vernally mesic soils (usually) in coastal scrub, valley and foothill grassland, vernal pool communities. Elevation: 25–940 m Bloom period: April–November	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Dichondra occidentalis western dichondra	CONCC P/HCP	CONCC P/HCP	4.2	Perennial rhizomatous herb found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland communities. Elevation: 50–500 m Bloom period: March–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Diplacus clevelandii Cleveland's bush monkeyflower	—	—	4.2	Perennial rhizomatous herb found in chaparral, cismontane woodland, and lower montane coniferous forest. In disturbed areas, gabbroic soils, openings, and rocky areas. Elevation: 450–2,000 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	CONCC P/HCP	CONCC P/HCP	1B.1	Perennial herb found in clay (often), rocky, and serpentine soils in coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland. Elevation: 5–450 m Bloom period: April–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are four historical records between five and ten miles from the project site.	No
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	FT CONCC P/HCP	CONCC P/HCP	1B.1	Perennial herb found in chaparral and coastal scrub, typically in rocky and sometimes volcanic areas. Elevation: 150– 1,675 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Dudleya multicaulis many-stemmed dudleya	—	—	1B.2	Perennial herb found in clay soils (usually) in chaparral, coastal scrub, and valley and foothill grassland communities. Elevation: 15–790 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three recent and 22 historical records within five miles of the project site and eight recent and eighteen historical records between five and ten miles from the project site.	No
Dudleya stolonifera Laguna Beach dudleya	FT CONCC P/HCP	CT CONCC P/HCP	1B.1	Perennial stoloniferous herb found in rocky soils in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland communities. Elevation: 10–260 m Bloom period: May–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record within five miles of the project site.	No
Dudleya viscida sticky dudleya	—	—	1B.2	Perennial herb found in rocky areas in coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub. Elevation: 10–550 m Bloom period: May–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Eryngium pendletonense Pendleton button-celery	—	—	1B.1	Perennial herb found in clay and vernally mesic soils in coastal bluff scrub, valley foothill grassland, and vernal pools. Elevation: 15–110 m Bloom period: April–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Erythranthe diffusa Palomar monkeyflower	—	—	4.3	Annual herb found in gravelly and sandy soils (sometimes) in chaparral and lower montane coniferous forest communities. Elevation: 1,220–1,830 m Bloom period: April – June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Euphorbia misera Cliff spurge	CONCC P/HCP	CONCC P/HCP	2B.2	Perennial shrub found in rocky soils in coastal bluff scrub, coastal scrub, and Mojavean desert scrub. Elevation: 10–500 m Bloom period: December–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are two recent and two historical records between five and ten miles from the project site.	No
Harpagonella palmeri Palmer's grapplinghook	CONCC P/HCP	CONCC P/HCP	4.2	Annual herb found in clay soils and openings in chaparral, coastal scrub, and valley and foothill grassland communities. Elevation: 20–955 m	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	—	—	1A	Perennial rhizomatous herb found in marshes and swamps (freshwater, coastal salt). Elevation: 10–1525 m Bloom period: August–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Holocarpha virgata ssp. *elongata* graceful tarplant	—	—	4.2	Annual herb found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Elevation: 60–1,100 m Bloom period: May–November	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Horkelia cuneata var. *puberula* mesa horkelia	—	—	1B.1	Perennial herb found in chaparral, coastal scrub, and cismontane woodland communities. Bloom period: February–July Elevation: 70–810 m Bloom period: March–May	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one historical record between five and ten miles from the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Isocoma menziesii var. *decumbens* decumbent goldenbush	—	—	1B.2	Perennial shrub found in chaparral and coastal scrub (often disturbed areas, sandy). Elevation: 10–250 m Bloom period: April–November	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record between five and ten miles from the project site.	No
Juglans californica southern California black walnut	—	—	4.2	Perennial, deciduous tree found in chaparral, cismontane woodland, coastal scrub, and riparian woodland communities. Elevation: 50–900 m Bloom period: March–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	—	—	1B.1	Annual herb found in marshes and swamps, playas, and vernal pools. Elevation: 1–1,220 m Bloom period: February–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three historical records between five and ten miles from the project site.	No
Lepechinia cardiophylla heart-leaved pitcher sage	CONCC P/HCP	CONCC P/HCP	1B.2	Perennial shrub found in closed-cone coniferous forest, chaparral, and cismontane woodland communities. Elevation: 520– 1,370 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	—	—	4.3	Annual herb found in dry soils in chaparral and coastal scrub communities. Elevation: 1–855 m Bloom period: January–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are two recent and two historical records between five and ten miles from the project site.	No
Lessingia hololeuca woolly-headed lessingia	—	—	3	Annual herb found in clay and serpentine soils in broadleafed upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland.	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
				Elevation: 15–305 m Bloom period: June–October		
Lycium brevipes var. *hassei* Santa Catalina Island desert-thorn	—	—	3.1	Perennial deciduous shrub found in coastal bluff scrub and coastal scrub communities. Elevation: 65–300 m Bloom period: June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Lycium californicum California box-thorn	—	—	4.2	Perennial shrub found in coastal bluff scrub and coastal scrub communities. Elevation: 5–150 m Bloom period: March–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Malacothrix saxatilis var. *saxatilis* cliff malacothrix	—	—	4.2	Perennial rhizomatous herb found in coastal bluff scrub and coastal scrub communities. Elevation: 3–200 m Bloom period: March–September	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Microseris douglasii ssp. *platycarpha* small-flowered microseris	—	—	4.2	Annual herb found in clay soils in cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pool communities. Elevation: 15–1,070 m Bloom period: March–May	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Monardella hypoleuca ssp. *intermedia* intermediate monardella	—	—	1B.3	Perennial rhizomatous herb that occurs in chaparral, cismontane woodland, and lower montane coniferous forest communities. Elevation: 400–1,250 m Bloom period: April–September	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three recent records between five and ten miles from the project site.	No
Monardella macrantha ssp. *hallii* Hall's monardella	—	—	1B.3	Perennial rhizomatous herb found in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. Elevation: 730–2,195 m	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
				Bloom period: June–October		
Myosurus minimus ssp. *apus* little mousetail	—	—	3.1	Annual herb found in alkaline soils in valley and foothill grassland and vernal pools. Elevation: 20– 640 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Nama stenocarpa mud nama	—	—	2B.2	Annual/perennial herb found in marshes and swamps. Elevation: 5–500 m Bloom period: January–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records within five miles of the project site and three historical records between five and ten miles from the project site.	No
Nasturtium gambelii Gambel's water cress	FE	CT	1B.1	Perennial rhizomatous herb found in marshes and swamps (brackish, freshwater). Elevation: 5–330 m Bloom period: April–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Navarretia prostrata prostrate vernal pool navarretia	—	—	1B.2	Annual herb found in mesic, alkaline soils in coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pool communities. Elevation: 3–1,210 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site.	No
Nemacaulis denudata var. *denudata* coast woolly-heads	—	—	1B.2	Annual herb found in coastal dunes. Elevation: 0–100 m Bloom period: April–September	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record within five miles of the project site and two historical	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
					records between five and ten miles from the project site.	
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	—	—	1B.1	Annual herb found in openings in coastal scrub and valley and foothill grassland communities. Elevation: 75–520 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three historical records within five miles of the project site and three historical records between five and ten miles from the project site.	No
Pentachaeta aurea ssp. aurea golden-rayed pentachaeta	—	—	4.2	Annual herb found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, and valley and foothill grassland communities. Elevation: 80–1,850 m Bloom period: March–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Phacelia hubbyi Hubby's phacelia	—	—	4.2	Annual herb found in gravelly, rocky, and talus soils in chaparral, coastal scrub, and valley and foothill grassland. Elevation: 0–1,000 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Phacelia keckii Santiago Peak phacelia	—	—	1B.3	Annual herb found in closed-cone coniferous forest and chaparral communities. Elevation: 545–1,600 m Bloom period: May–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Phacelia ramosissima var. *austrolitoralis* south coast branching phacelia	—	—	3.2	Perennial herb found in rocky (sometimes) and sandy soils in chaparral, coastal dunes, coastal scrub, and marshes and swamps (coastal salt). Elevation: 5–300 m Bloom period: March–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Pseudognaphalium leucocephalum white rabbit-tobacco	—	—	2B.2	Perennial herb found in gravelly and sandy soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland communities. Elevation: 0–2,100 m Bloom period: August–November	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and three recent and two historical records between five and ten miles from the project site.	No
Quercus dumosa Nuttall's scrub oak	CONCC P/HCP	CONCC P/HCP	1B.1	Perennial evergreen shrub found in clay, loam, and sandy soils in closed-cone coniferous forest, chaparral, and coastal scrub. Elevation: 15–400 m Bloom period: February–April	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and three recent and five historical records between five and ten miles from the project site.	No
Rhinotropis cornuta var. *fishiae* Fish's milkwort	—	—	4.3	Perennial deciduous shrub found in chaparral, cismontane woodland, and riparian woodland communities. Elevation: 100–1,000 m Bloom period: May–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Romneya coulteri Coulter's matilija poppy	CONCC P/HCP	CONCC P/HCP	4.2	Perennial, rhizomatous herb found in chaparral and coastal scrub, often in burned areas. Elevation: 20–1,200 m Bloom period: March–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Senecio aphanactis chaparral ragwort	—	—	2B.2	Annual herb found in drying alkaline flats (usually) in chaparral, cismontane woodland, and coastal scrub communities. Elevation: 15–800 m Bloom period: January–April	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are three historical records between five and ten miles from the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Sidalcea neomexicana salt spring checkerbloom	—	—	2B.2	Perennial herb found in playas and in alkaline, mesic soils in chaparral, coastal scrub, lower montane coniferous forest, and Mojavean desert scrub communities. Elevation: 15–1,500 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record between five and ten miles from the project site.	No
Suaeda esteroa estuary seablite	—	—	1B.2	Perennial herb found in marshes and swamps (coastal salt). Elevation: 0–5 m Bloom period: July–October	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are two recent and one historical record between five and ten miles from the project site.	No
Suaeda taxifolia woolly seablite	—	—	4.2	Perennial evergreen shrub found in coastal bluff scrub, coastal dunes, and marshes and swamps (coastal margins). Elevation: 0–50 m Bloom period: January–December	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Symphyotrichum defoliatum San Bernardino aster	—	—	1B.2	Perennial, rhizomatous herb found in banks of ditches, streams, and springs in cismontane woodlands, coastal scrub, lower montane coniferous forests, meadows and seeps, marshes and swamps, and vernally mesic valley and foothill grassland communities. Elevation: 2–2,040 m Bloom period: July–November	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records between five and ten miles from the project site.	No
Verbesina dissita big-leaved crownbeard	FT	CT	1B.1	Perennial herb found in chaparral (maritime) and coastal scrub communities. Elevation: 45–205 m Bloom period: April–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record within five miles of the project site and one recent record between five and ten miles from the project site.	No

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Status CNPS[3]	Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
Ferns						
Asplenium vespertinum western spleenwort	—	—	4.2	Perennial, rhizomatous herb found in rocky areas in chaparral, cismontane woodland, and coastal scrub. Elevation: 180–1,000 m Bloom period: February–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Gymnosperms						
Hesperocyparis forbesii Tecate cypress	CONCC P/HCP	CONCC P/HCP	1B.1	Perennial, evergreen tree found in clay and gabbroic (sometimes) soils in closed-cone coniferous forest and chaparral communities. Elevation: 80–1,500 m	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Lycophytes						
Selaginella cinerascens ashy spike-moss	—	—	4.1	Perennial rhizomatous herb found in chaparral and coastal scrub communities. Elevation: 20–640 m	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Monocots						
Allium marvinii Yucaipa onion	—	—	1B.2	Perennial, bulbiferous herb found in clay soils and openings in chaparral. Elevation: 760–1,065 m Bloom period: April–May	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Brodiaea filifolia thread-leaved brodiaea	FT	CE	1B.1	Perennial, bulbiferous herb found in clay soils in chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, and vernal pools. Elevation: 25–1,120 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record within five miles of the project site and five recent and four historical records between five and ten miles from the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Calochortus catalinae Catalina mariposa lily	CONCC P/HCP	CONCC P/HCP	4.2	Perennial, bulbiferous herb found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland communities. Elevation: 15–700 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Calochortus plummerae Plummer's mariposa-lily	—	—	4.2	Perennial, bulbiferous herb found in granitic and rocky soils in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland communities. Elevation: 100– 1,700 m Bloom period: May–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Calochortus weedii var. *intermedius* intermediate mariposa-lily	CONCC P/HCP	CONCC P/HCP	1B.2	Perennial, bulbiferous herb that occurs in calcareous soils on rocky sites in coastal scrub, chaparral, and valley and foothill grassland communities. Elevation: 105–855 m Bloom period: May–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are twelve recent and nine historical records within five miles of the project site and 36 recent and sixteen historical records between five and ten miles from the project site.	No
Hordeum intercedens vernal barley	—	—	3.2	Annual herb found in vernal pools and depressions and saline flats in coastal dunes, coastal scrub, and valley and foothill grassland communities. Elevation: 5–1,000 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Imperata brevifolia California satintail	—	—	2B.1	Perennial rhizomatous herb found in mesic soils in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub. Elevation: 0–1,215 m Bloom period: September–May	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Juncus acutus ssp. *leopoldii* southwestern spiny rush	—	—	4.2	Perennial, rhizomatous herb found in mesic soils in coastal dunes, meadows and alkaline seeps and coastal salt marshes and swamps. Elevation: 3–900 m Bloom period: May–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Lilium humboldtii ssp. *ocellatum* ocellated Humboldt lily	—	—	4.2	Perennial, bulbiferous herb found in openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland communities. Elevation: 30–1,800 m Bloom period: March–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Nolina cismontana chaparral nolina	—	—	1B.2	Perennial, evergreen shrub occurring in gabbroic soils and sandstone (sometimes) in chaparral and coastal scrub communities. Elevation: 140–1,275 m Bloom period: May–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species. There are six recent and two historical records between five and ten miles from the project site.	No
Orcuttia californica California Orcutt grass	FE	CE	1B.1	Annual herb found in vernal pools. Elevation: 15–660 m Bloom period: April–August	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Piperia cooperi chaparral rein orchid	—	—	4.2	Perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 15–1,585 m Bloom period: March–June	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Piperia leptopetala narrow-petaled rein orchid	—	—	4.3	Perennial herb found in cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest. Elevation: 380–2,225 m Bloom period: May–July	**None:** The project site has been subjected to significant historical surface disturbances and does not contain suitable habitat(s) that would support occurrence of this species.	No
Code Designations						

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Status CNPS[3]	Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis

[1] Federal Status: 2025 USFWS Listing

- **FE** = Listed as endangered under Federal Endangered Species Act (FESA)
- **FT** = Listed as threatened under FESA
- **FC** = Candidate for listing (threatened or endangered) under FESA
- **FD** = Delisted in accordance with FESA
- **FPD** = Federally Proposed to be Delisted
- **—** = Not federally listed

[2] State Status: 2025 CDFW Listing

- **SE** = Listed as endangered under California Endangered Species Act (CESA)
- **ST** = Listed as threatened under CESA
- **SC** = Candidate for listing (threatened or endangered) under CESA
- **CR** = Rare in California
- **—** = Not State listed

[3] CNPS: 2025 CNPS Listing

- **Rank 1A** = Plants species that presumed extinct in California.
- **Rank 1B** = Plant species that are rare, threatened, or endangered in California and elsewhere.
- **Rank 2** = Plant species that are rare, threatened, or endangered in California, but more common elsewhere.
- **Rank 3** = Plants about which we need more information—A Review List
- **Rank 4** = Plants of limited distribution—A Watch List
- **CBR** = Considered But Rejected

Blooming period: Months in parentheses are uncommon.

Notes:

[4] **Habitat Description**: Habitat description adapted from CNDDB and CNPS online inventory or other specified source.

[5] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source.

Sources:

California Department of Fish and Wildlife (CDFW). 2024. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed November 27, 2024.

California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed November 27, 2024.

California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed November 27, 2024.

Table 2: Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
Insects					
Bombus crotchii Crotch bumble bee	—	SC	This species occurs primarily in California, including coastal habitats, western Mojave Desert, San Joaquin Valley, and adjacent foothills through most of southwestern California. It inhabits arid grasslands and shrublands, and its food sources including milkweeds, pincushions, lupines, clovers, phacelias, sages, clarkias, poppies, and buckwheats.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record within five miles of the project site and five recent records between five and ten miles from the project site.	No
Bombus pensylvanicus American bumble bee	—	—	Occurs in coastal prairie, Great Basin grassland, and valley & foothill grassland communities. Nests above ground under long grass or underground.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are 14 recent and two historical records within five miles of the project site and 44 recent and six historical records between five and ten miles from the project site.	No
Cicindela hirticollis gravida sandy beach tiger beetle	—	—	Occurs in coastal dunes adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site. This species is believed to be locally extirpated.	No
Cicindela latesignata western beach tiger beetle	—	—	Occurs in mudflats and beaches of coastal estuaries from San Diego County to Los Angeles County. Typically inhabit wet or dry sandy beaches and mud, sand, or salt flats.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records between five and ten miles from the project site.	No
Coelus globosus globose dune beetle	—	—	Occurs in coastal sand dune habitat. Inhabits foredunes and sand hummocks; burrows beneath the sand surface and is most common beneath dune vegetation.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No

Danaus plexippus monarch butterfly (California overwintering population)	FC	—	Occurs in temperate climates, such as eastern and western North America and undergoes long-distance migration. Lays eggs on obligate milkweed host plant (primarily *Asclepias* spp.). Roosts located in wind protected Eucalyptus, Monterey pine, and Cypress tree groves with nectar and water sources nearby	**None:** The project site does not contain suitable overwintering habitat or the obligate host plant that would support occurrence of this species.	No
Habroscelimorpha gabbii western tidal-flat tiger beetle	—	—	Occurs in estuaries and mudflats along the coast of Southern California. Generally found on dark-colored mud in the lower zone; occasionally found on dry saline flats of estuaries.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site. This species is believed to be locally extirpated.	No
Mollusks					
Tryonia imitator mimic tryonia (=California brackishwater snail)	—	—	Occurs in coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Crustaceans					
Branchinecta sandiegonensis San Diego fairy shrimp	FE CONCC P/HCP	CONCC P/HCP	Small, shallow (5-30 cm deep) vernal pools with cool water (10-20ºC), moderate alkalinity and conductivity, and less than 1 m deep.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and two historical records between five and ten miles from the project site.	No
Streptocephalus woottoni Riverside fairy shrimp	FE CONCC P/HCP	CONCC P/HCP	Vernal pools on the Santa Rosa Plateau on Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are three recent and six historical records between five and ten miles from the project site.	No
Fish					
Eucyclogobius newberryi tidewater goby	FE	SSC	Occurs in shallow lagoons and lower stream reaches with fairly still but not stagnant water and high oxygen levels.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one historical record	No

				between five and ten miles from the project site.	
Gila orcuttii arroyo chub	—	SSC	Native to the streams and rivers of the Los Angeles plain in Southern California. Arroyo chub are adapted to survive in streams that fluctuate between large winter storm flows, and low summer flows, and the low dissolved oxygen and wide temperature fluctuations. Feeds on plants such as algae and water fern, as well as insects and mollusks.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records within five miles of the project site and four historical records between five and ten miles from the project site.	No
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	FE	SC	Occurs in Pacific coast streams, including the Santa Ana River.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one recent and one historical record between five and ten miles from the project site.	No
Rhinichthys gabrielino Santa Ana speckled dace	—	SSC	Occurs in small springs, streams, large rivers, and deep lakes, including headwaters of the Santa Ana and San Gabriel Rivers.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records between five and ten miles from the project site.	No
Amphibians					
Anaxyrus californicus arroyo toad	FE CONCC P/HCP	SSC CONCC P/HCP	Occurs in washes, arroyos, sandy riverbanks, riparian areas with willows, sycamores, oaks, cottonwoods. Requires exposed sandy streamsides with stable terraces for burrowing with scattered vegetation for shelter, and areas of quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Spea hammondii western spadefoot	CONCC P/HCP	SSC CONCC P/HCP	Occurs in open areas with sandy or gravelly soils in mixed woodlands, grasslands, coastal sage and Riversidean alluvial fan sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Breeds in ephemeral rain pools that do not contain bullfrogs, fish, or crayfish.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are eight recent and seven historical records within five miles of the project site and seventeen recent and fifteen historical records between five and ten miles from the project site.	No

Reptiles					
Actinemys pallida southwestern pond turtle	—	SSC	Occurs in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are one recent and six historical records within five miles of the project site and one recent and eight historical records between five and ten miles from the project site.	No
Anniella stebbinsi southern California legless lizard	—	SSC	Occurs in moist, loose soil in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. Tolerant of disturbances.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one recent and one historical record between five and ten miles from the project site.	No
Arizona elegans occidentalis California glossy snake	—	SSC	Occurs in areas of rocky washes and loose, sandy soils and for burrowing in desert scrub grassland, coastal sage and Riversidean alluvial fan sage scrub, and chaparral habitats. Prefer open sandy areas with scattered brush, but also found in rocky areas.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records within five miles of the project site and one historical record between five and ten miles from the project site.	No
Aspidoscelis hyperythra orange-throated whiptail	CONCC P/HCP	WL CONCC P/HCP	Occurs primarily on coarse soils in open coastal sage and Riversidean alluvial fan sage scrub habitat.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and six historical records within five miles of the project site and five recent and ten historical records between five and ten miles from the project site.	No
Aspidoscelis tigris stejnegeri San Diegan (coastal) whiptail	CONCC P/HCP	SSC CONCC P/HCP	Occurs in dry, open areas with sparse foliage in coastal sage and Riversidean alluvial fan sage scrub, chaparral, woodland, and riparian habitats.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one recent and one historical record between five and ten miles from the project site.	No

Crotalus ruber red-diamond rattlesnake	CONCC P/HCP	SSC CONCC P/HCP	Occurs in arid, rocky areas in creosote scrub, coastal sage and Riversidean alluvial fan sage scrub, chaparral, oak and pine woodlands, grasslands, on cultivated areas.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records within five miles of the project site and four historical records between five and ten miles from the project site.	No
Phrynosoma blainvillii coast horned lizard	CONCC P/HCP	SSC CONCC P/HCP	Occurs in open areas with sandy soil and low vegetation in grasslands, coniferous forests, woodlands, and chaparral.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are six historical records within five miles of the project site and one recent and twelve historical records between five and ten miles from the project site.	No
Salvadora hexalepis virgultea coast patch-nosed snake	—	SSC	Occurs in brushy or shrubby vegetation. Dependent on small mammal burrows.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Thamnophis hammondii two-striped gartersnake	—	SSC	Occurs in or near permanent fresh water in marshes and swamps, riparian scrub, riparian woodlands, and wetlands.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record within five miles of the project site and two historical records between five and ten miles from the project site.	No
Birds					
Accipiter cooperii Cooper's hawk	MBTA	WL FGC	Occurs and nests in deciduous and mixed forests and open woodland habitats. Year-round resident in southern California, and tolerant of urban areas with an abundance of trees.	**Low:** Marginally suitable foraging and nesting habitat for this species is present in the trees adjacent to the project site. There is one recent and two historical records within five miles of the project site and one recent record between five and ten miles from the project site.	No
Agelaius tricolor tricolored blackbird	MBTA	FT SSC FGC	Occurs and nests in large freshwater marshes with dense stands of hydrophytic vegetation (cattails, bulrushes, etc.). Short-distance migrant.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are four	No

				historical records within five miles of the project site and one recent and five historical records between five and ten miles from the project site.	
Aimophila ruficeps canescens southern California rufous-crowned sparrow	MBTA CONCC P/HCP	WL FGC CONCC P/HCP	Occurs and nests on steep, often rocky hillsides with grass and forb patches in coastal sage and Riversidean alluvial fan sage scrub and sparse mixed chaparral habitats. Year-round resident in southern California.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are fourteen historical records within five miles of the project site and four recent and six historical records between five and ten miles from the project site.	No
Ammodramus savannarum grasshopper sparrow	MBTA	SSC	Occurs and nests in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and one historical record between five and ten miles from the project site.	No
Aquila chrysaetos golden eagle	BGEPA MBTA CONCC P/HCP	FP WL CONCCP /HCP	Forages in areas of rolling foothills, mountainous areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one record between five and ten miles from the project site.	No
Asio otus long-eared owl	MBTA	FP FGC	Occurs and nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are four historical records between five and ten miles from the project site.	No
Athene cunicularia burrowing owl	MBTA	SSC FGC	Occurs and nests in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel. Short-distance migrant.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site and four recent and three historical records between five and ten miles from the project site.	No
Buteo regalis	MBTA	WL	Occurs in grassland and arid shrublands with an abundance of prey species, such as pocket	**None:** The project site does not contain suitable habitat(s) that would support	No

ferruginous hawk			gophers, black-tailed jackrabbits, and desert cottontails. Will winter near cultivated fields that have an abundance of pocket gophers.	occurrence of this species. There are two historical records between five and ten miles from the project site.	
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	MBTA CONCC P/HCP	SSC FGC CONCC P/HCP	Occurs and nests in coastal sage scrub. Requires tall opuntia cactus or *Yucca* trees for nesting and roosting.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are ten historical records within five miles of the project site and five recent and 32 historical records between five and ten miles from the project site.	No
Charadrius nivosus nivosus western snowy plover	FT MBTA	SSC	Occurs in sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record between five and ten miles from the project site.	No
Circus hudsonius northern harrier	MBTA CONCC P/HCP	SSC BCC CONCC P/HCP	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Coturnicops noveboracensis yellow rail	MBTA	SSC FGC	Occurs in shallow marshes and wet meadows. In winter, this species inhabits drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Elanus leucurus white-tailed kite	MBTA	FP FGC	Occurs and nests in grasslands and open coastal scrub in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous, open stages of most habitats mostly in cismontane California. Year-round resident in southern California.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are six recent records within five miles of the project site and thirteen recent and one historical records between five and ten miles from the project site.	No
Empidonax traillii extimus southwestern willow flycatcher	FE MBTA CONCC P/HCP	SE CONCC P/HCP	Occurs and nests in dense riparian woodlands. Long-distance migrant.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one	No

				recent and two historical records between five and ten miles from the project site.	
Eremophila alpestris actia California horned lark	MBTA	WL FGC	Occurs and nests in open areas with sparse vegetation. Year-round resident in southern California.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are three historical records within five miles of the project site and two historical records between five and ten miles from the project site.	No
Icteria virens yellow-breasted chat	MBTA	SSC FGC	Occurs and nests in riparian thickets of willow and other bushy tangles near watercourses. Long-distance migrant.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record within five miles of the project site and three historical records between five and ten miles from the project site.	No
Laterallus jamaicensis coturniculus California black rail	MBTA	ST FP FGC	Occurs and nests in freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Pandion haliaetus osprey	MBTA	WL	Occurs in ocean shore, bays, freshwater lakes, and larger streams.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record between five and ten miles from the project site.	No
Passerculus sandwichensis beldingi Belding's savannah sparrow	MBTA	SE	Occurs in coastal wetlands and marshes.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record within five miles of the project site and one historical record between five and ten miles from the project site.	No
Polioptila californica californica	FT MBTA CONCC P/HCP	SSC FGC CONCC P/HCP	Occurs and nests in arid washes, on mesas, and slopes in coastal sage scrub below 2,500 ft. Year-round resident in California.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are 44 recent and twelve historical records within	No

coastal California gnatcatcher				five miles of the project site and 83 recent and 49 historical records between five and ten miles from the project site.	
Rallus obsoletus levipes light-footed Ridgway's rail	FE MBTA	SE FP	Occurs in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed (required for nesting or escape cover) are the dominant vegetation.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two recent records between five and ten miles from the project site.	No
Setophaga petechia yellow warbler	MBTA	SSC FGC	Occurs and nests in willow shrubs and thickets, cottonwoods, sycamores, ash, and alders, predominantly in riparian habitats. Long-distance migrant.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record within five miles of the project site and one recent record between five and ten miles from the project site.	No
Sternula antillarum browni California least tern	FE MBTA	SE FP	Occurs and nests on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, land fills, or paved areas.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and one historical record between five and ten miles from the project site.	No
Vireo bellii pusillus least Bell's vireo	FE MBTA CONCC P/HCP	SE CONCC P/HCP	Occurs and nests in low riparian habitat in the vicinity of water or in dry river bottoms. Long-distance migrant.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are ten recent and one historical records within five miles of the project site and 22 recent and five historical records between five and ten miles from the project site.	No
Mammals					
Antrozous pallidus pallid bat	—	SSC	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Species is very sensitive to disturbance of roosting sites.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are two historical records between five and ten miles from the project site.	No
Chaetodipus californicus femoralis	—	—	Occurs in coastal scrub, chaparral and grassland in San Diego County.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one	No

Dulzura pocket mouse				historical record between five and ten miles from the project site.	
Chaetodipus fallax fallax northwestern San Diego pocket mouse	—	SSC	Occurs in sandy, herbaceous areas, usually in association with rocks or coarse gravel, in coastal sage and Riversidean alluvial fan sage scrub, chaparral, and grasslands.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent record between five and ten miles from the project site.	No
Eumops perotis californicus western mastiff bat	—	SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are four historical records within five miles of the project site and five records between five and ten miles from the project site.	No
Lasiurus frantzii western red bat	—	SSC	Occurs in cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Myotis yumanensis Yuma myotis	—	—	Occurs in open forests and woodlands with sources of water over which to feed. Maternity colonies in caves, mines, buildings or crevices.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record within five miles of the project site.	No
Neotoma lepida intermedia San Diego desert woodrat	CONCCP/HCP	SSC CONCCP/HCP	Occurs in rock outcrops, rocky cliffs, and slopes in coastal sage and Riversidean alluvial fan sage scrub with moderate to dense canopies.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one recent and two historical records between five and ten miles from the project site.	No
Nyctinomops macrotis big free-tailed bat	—	SSC	Occurs in rocky habitats in arid landscapes and has been found in a variety of plant associations, including desert shrub, woodlands, and evergreen forests. Roosts by day in crevices on cliff faces. These bats forage mostly for large moths, but may eat other insects as well.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No
Onychomys torridus ramona	—	SSC	Occurs in desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one	No

southern grasshopper mouse				recent record between five and ten miles from the project site.	
Perognathus longimembris pacificus Pacific pocket mouse	FE CONCC P/HCP	SSC CONCC P/HCP	Occurs in coastal strand, coastal dunes, and coastal sage scrub growing on marine terraces. Prefers soils of fine alluvial sands near the ocean.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There are three historical records between five and ten miles from the project site.	No
Sorex ornatus salicornicus southern California saltmarsh shrew	—	SSC	Occurs in coastal marshes in Los Angeles, Orange and Ventura counties. Requires dense vegetation and woody debris for cover.	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species. There is one historical record between five and ten miles from the project site.	No

Code Designations

[1] Federal Status: 2025 USFWS Listing	[2] State Status: 2025 CDFW Listing
ESU = Evolutionary Significant Unit is a distinctive population.	**SE** = Listed as endangered under the California Endangered Species Act (CESA).
FE = Listed as endangered under the Endangered Species Act.	**ST** = Listed as threatened under the CESA.
FT = Listed as threatened under the Endangered Species Act.	**SSC** = Species of Special Concern as identified by CDFW.
FC = Candidate for listing (threatened or endangered) under the Endangered Species Act.	**FP** = Listed as fully protected under the Fish and Game Code.
FD = Delisted in accordance with the Endangered Species Act.	**FGC** = protected by Fish and Game Code 3503-3513
FPD = Federally Proposed to be Delisted.	**CE** = Candidate endangered under CESA.
BCC = Bird of Conservation Concern	**WL** = CDFW Watch List
MBTA = protected by the Migratory Bird Treaty Act	**—** = Not State listed
— = Not federally listed	

Notes:
3 **Habitat Description**: Habitat description adapted from CNDDB or other specified source
4 **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source.

Sources:
California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed November 27, 2024.

California Department of Fish and Wildlife (CDFW). 2024. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed November 27, 2024.

U.S. Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation. Website: https://ecos.fws.gov/ipac/. Accessed November 27, 2024.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Orange County, California



Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Pacific Pocket Mouse Perognathus longimembris pacificus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8080	Endangered

Birds

NAME	STATUS
California Least Tern Sternula antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher Polioptila californica californica Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered

Reptiles

NAME	STATUS
Southwestern Pond Turtle Actinemys pallida Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4768	Proposed Threatened

NOT FOR CONSULTATION

Amphibians

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad Anaxyrus californicus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3762	Endangered
Western Spadefoot Spea hammondii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Riverside Fairy Shrimp Streptocephalus woottoni Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8148	Endangered

NOT FOR CONSULTATION

San Diego Fairy Shrimp Branchinecta sandiegonensis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6945	Endangered

Flowering Plants

NAME	STATUS
Nevin's Barberry Berberis nevinii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8025	Endangered
Thread-leaved Brodiaea Brodiaea filifolia Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6087	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

NOT FOR CONSULTATION

Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

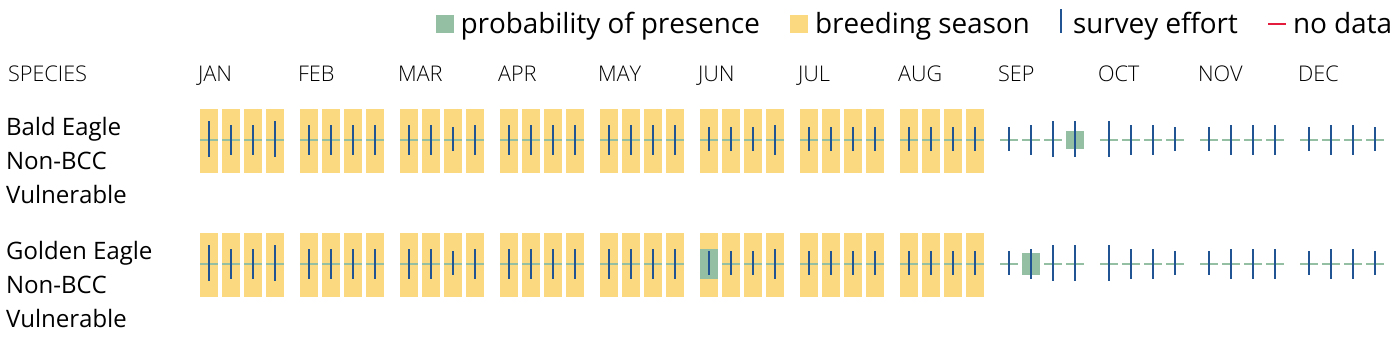
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

NOT FOR CONSULTATION

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

NOT FOR CONSULTATION

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Brandt's Cormorant Urile penicillatus — Breeds Apr 15 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

NOT FOR CONSULTATION

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Elegant Tern Thalasseus elegans — Breeds Apr 5 to Aug 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8561

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Marbled Godwit Limosa fedoa — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Northern Harrier Circus hudsonius — Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

NOT FOR CONSULTATION

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Western Gull Larus occidentalis — Breeds Apr 21 to Aug 25
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Western Screech-owl Megascops kennicottii cardonensis — Breeds Mar 1 to Jun 30
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

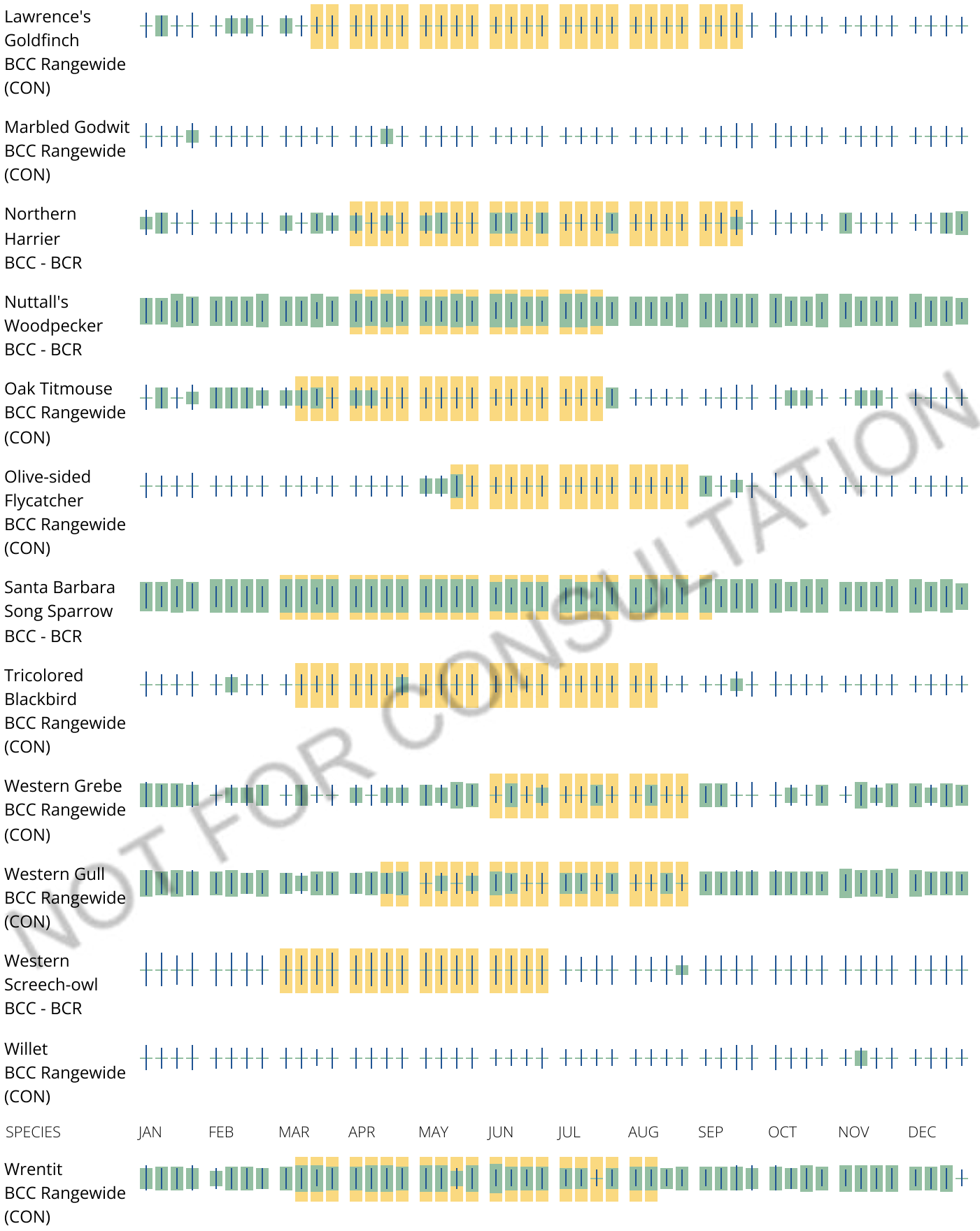
Survey Timeframe

NOT FOR CONSULTATION

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

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2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

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The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Laguna Beach (3311757) OR Santiago Peak (3311765) OR Tustin (3311767) OR El Toro (3311766) OR San Clemente (3311745) OR Canada Gobernadora (3311755) OR Dana Point (3311746) OR San Juan Capistrano (3311756))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Actinemys pallida southwestern pond turtle	ARAAD02032	Proposed Threatened	None	G2G3	SNR	SSC
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S4	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S1	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T3	S3	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S2	SSC
Canyon Live Oak Ravine Forest Canyon Live Oak Ravine Forest	CTT61350CA	None	None	G3	S3.3	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1	S1	1B.1
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	
Choeronycteris mexicana Mexican long-tongued bat	AMACB02010	None	None	G3G4	S1	SSC
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Cicindela latesignata western beach tiger beetle	IICOL02110	None	None	G2G3	S1	
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G2G3	S2	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2

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Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Proposed Threatened	None	G4T1T2Q	S2	
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Threatened	Threatened	G2	S3	
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Dudleya stolonifera Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S3	
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eryngium pendletonense Pendleton button-celery	PDAPI0Z120	None	None	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphorbia misera cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
Gila orcuttii arroyo chub	AFCJB13120	None	None	G1	S2	SSC
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TX	SX	1A
Hesperocyparis forbesii Tecate cypress	PGCUP040C0	None	None	G2	S2	1B.1
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S2	FP
Lepechinia cardiophylla heart-leaved pitcher sage	PDLAM0V020	None	None	G3	S2S3	1B.2
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lycium brevipes var. hassei Santa Catalina Island desert-thorn	PDSOL0G0N0	None	None	G5T1Q	S1	3.1
Monardella hypoleuca ssp. intermedia intermediate monardella	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Monardella macrantha ssp. hallii Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Pentachaeta aurea ssp. allenii Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T2	S2	SSC
Phacelia keckii Santiago Peak phacelia	PDHYD0C4G1	None	None	G1	S1	1B.3
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Plestiodon skiltonianus interparietalis Coronado skink	ARACH01114	None	None	G5T5	S2S3	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Rallus obsoletus levipes light-footed Ridgway's rail	ABNME05014	Endangered	Endangered	G3T1T2	S1	FP
Rhinichthys gabrielino Santa Ana speckled dace	AFCJB3705K	Proposed Threatened	None	G5T1	S1	SSC
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S3	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3	SSC
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Sorex ornatus salicornicus southern California saltmarsh shrew	AMABA01104	None	None	G5T1?	S1	SSC
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Dune Scrub Southern Dune Scrub	CTT21330CA	None	None	G1	S1.1	
Southern Foredunes Southern Foredunes	CTT21230CA	None	None	G2	S2.1	

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Southern Mixed Riparian Forest Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Riparian Scrub Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S2	
Suaeda esteroa estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Thamnophis sirtalis pop. 1 south coast gartersnake	ARADB3613F	None	None	G5T1T2	S1S2	SSC
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Verbesina dissita big-leaved crownbeard	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	

Record Count: 119

Search Results

77 matches found. Click on scientific name for details

Search Criteria: , 9-Quad include [3311757:3311765:3311767:3311766:3311745:3311755:3311746:3311756]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	None	None	G3G4	S2	1B.2		1980-01-01	 © 2010 Larry Sward
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2		1974-01-01	No Photo Available
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2		1974-01-01	No Photo Available
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	FE	None	G2	S2	1B.1	Yes	1974-01-01	 © 2009 Thomas Stoughton
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	None	None	G3	S2	1B.2		1994-01-01	No Photo Available
Atriplex pacifica	south coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4	S2	1B.2		1994-01-01	No Photo Available
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G1G2	S1	1B.1		1988-01-01	No Photo Available
Atriplex serenana var. *davidsonii*	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2		1994-01-01	No Photo Available
Bahiopsis laciniata	San Diego County viguiera	Asteraceae	perennial shrub	Feb-Jun(Aug)	None	None	G4	S4	4.3		1974-01-01	No Photo Available

Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	Yes	1974-01-01	 © 2016 Keir Morse
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	Yes	1974-01-01	No Photo Available
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	Yes	1994-01-01	No Photo Available
Calochortus weedii var. *intermedius*	intermediate mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G3G4T3	S3	1B.2	Yes	1994-01-01	No Photo Available
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	None	None	G4	S4	3		1994-01-01	No Photo Available
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	None	None	G4	S4	4.2	Yes	1974-01-01	No Photo Available
Centromadia parryi ssp. *australis*	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.1		1994-01-01	No Photo Available
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	None	None	G5T1	S1	1B.1		2001-01-01	No Photo Available
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2		1994-01-01	No Photo Available
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	None	None	G5T3	S3	1B.2		1994-01-01	No Photo Available
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	G3G4	S3	4.2		1980-01-01	No Photo Available
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	Mar-Jul	None	None	G2G3	S2	1B.2		1974-01-01	No Photo Available
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	None	None	G3T2	S2	1B.2		1980-01-01	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994-01-01	No Photo Available
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2		2001-01-01	No Photo Available

Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	G3G4	S3S4	4.2		1974-01-01	No Photo Available
Diplacus clevelandii	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2		1980-01-01	 © 2020 W. Juergen Schrenk
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	G3T2	S2	1B.1		1974-01-01	 © 2011 Aaron E. Sims
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Dudleya stolonifera	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	FT	CT	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Eryngium pendletonense	Pendleton button-celery	Apiaceae	perennial herb	Apr-Jun(Jul)	None	None	G1	S1	1B.1	Yes	2001-01-01	 © 2009 Vince Scheidt
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	None	None	G4	S3	4.3		1974-01-01	 Ron Vanderhoff, 2019
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	(Oct)Dec-Aug	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2		1980-01-01	 © 2015 Keir Morse
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	Yes	1974-01-01	No Photo Available
Hesperocyparis forbesii	Tecate cypress	Cupressaceae	perennial evergreen tree		None	None	G2	S2	1B.1		1974-01-01	 © 2011 Joey Malone

Holocarpha virgata ssp. *elongata*	graceful tarplant	Asteraceae	annual herb	May-Nov	None	None	G5T3	S3	4.2	Yes	1994-01-01	 © 2013 Anna Bennett
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
Horkelia cuneata var. *puberula*	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001-01-01	 © 2008 Tony Morosco
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
Isocoma menziesii var. *decumbens*	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	None	None	G3G5T2T3	S2	1B.2		1994-01-01	No Photo Available
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2020 Zoya Akulova
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2		1988-01-01	 © 2019 Belinda Lo
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	Apr-Jul	None	None	G3	S2S3	1B.2		1974-01-01	 © 2003 Vince Scheidt
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994-01-01	 © 2015 Keir Morse

Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	 © 2015 Aaron Schusteff
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980-01-01	 © 2008 Thomas Stoughton
Lycium brevipes var. *hassei*	Santa Catalina Island desert-thorn	Solanaceae	perennial deciduous shrub	Jun(Aug)	None	None	G5T1Q	S1	3.1	Yes	1974-01-01	No Photo Available
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	Mar-Aug(Dec)	None	None	G4	S4	4.2		2001-01-01	No Photo Available
Malacothrix saxatilis var. *saxatilis*	cliff malacothrix	Asteraceae	perennial rhizomatous herb	Mar-Sep	None	None	G5T4	S4	4.2	Yes	2001-01-01	No Photo Available
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	Asteraceae	annual herb	Mar-May	None	None	G4T4	S4	4.2		2001-01-01	 © 2015 Richard Spellenberg
Monardella hypoleuca ssp. *intermedia*	intermediate monardella	Lamiaceae	perennial rhizomatous herb	Apr-Sep	None	None	G4T2?	S2?	1B.3	Yes	2012-10-16	 © 2016 Ron Vanderhoff
Monardella macrantha ssp. *hallii*	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974-01-01	No Photo Available
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1		1980-01-01	No Photo Available
Nama stenocarpa	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994-01-01	No Photo Available
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980-01-01	No Photo Available
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available

Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	None	None	G3	S3	1B.2	Yes	2001-01-01	 © 2005 Santa Monica Mountains National Recreation Area
Pentachaeta aurea ssp. *allenii*	Allen's pentachaeta	Asteraceae	annual herb	Mar-Jun	None	None	G4T1	S1	1B.1	Yes	2008-05-08	 ©2008 Bob Allen
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	Asteraceae	annual herb	Mar-Jul	None	None	G4T3	S3	4.2		2001-01-01	No Photo Available
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	None	None	G4	S4	4.2	Yes	2007-02-02	No Photo Available
Phacelia keckii	Santiago Peak phacelia	Hydrophyllaceae	annual herb	May-Jul	None	None	G1	S1	1B.3	Yes	1980-01-01	No Photo Available
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	None	None	G5?T3Q	S3	3.2		2007-05-17	No Photo Available
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	None	None	G3	S3S4	4.2		2001-01-01	No Photo Available
Piperia leptopetala	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001-01-01	 ©2006 Brad Kelley
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	G4	S2	2B.2		2006-11-03	No Photo Available
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	G3	S3	1B.1		1994-01-01	No Photo Available
Rhinotropis cornuta var. *fishiae*	Fish's milkwort	Polygalaceae	perennial deciduous shrub	May-Aug	None	None	G5T4	S4	4.3		1974-01-01	No Photo Available
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		1974-01-01	No Photo Available

Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb		None	None	G3G4	S3?	4.1		1974-01-01	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	 Neal Kramer
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(Jan-May)Jul-Oct	None	None	G3	S2	1B.2		1984-01-01	No Photo Available
Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	None	None	G4	S3S4	4.2		1994-01-01	No Photo Available
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes	2004-01-01	No Photo Available
Verbesina dissita	big-leaved crownbeard	Asteraceae	perennial herb	(Mar)Apr-Jul	FT	CT	G1G2	S1	1B.1		1984-01-01	No Photo Available

Showing 1 to 77 of 77 entries

Go to top

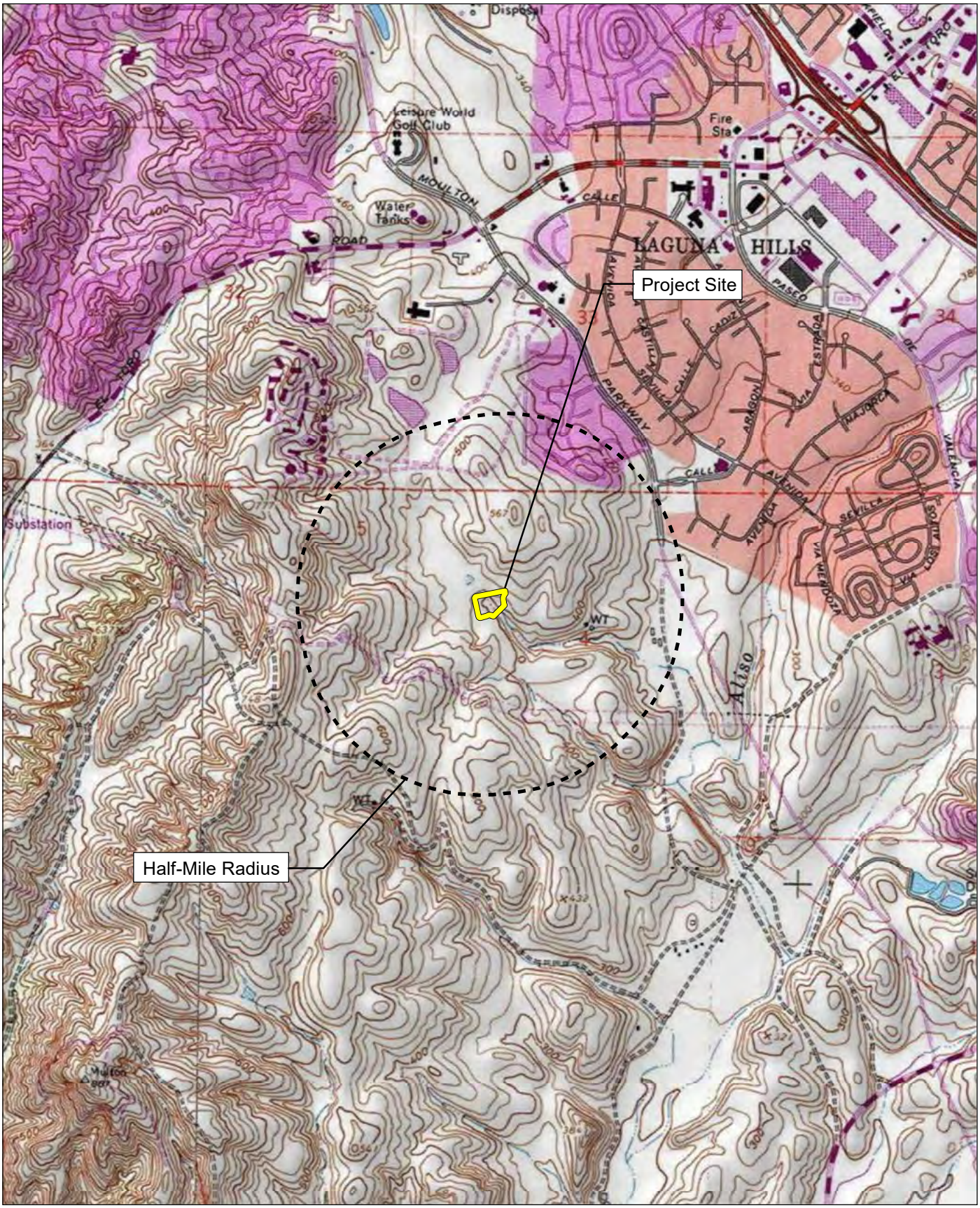
Suggested Citation:
California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website https://www.rareplants.cnps.org [accessed 14 January 2025].
}

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APPENDIX C:

Cultural Resources Supporting Information

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Source: USGS San Juan Capistrano 7.5' Quadrangle / T07S,R08W,sec4,5;T06S,R08W,SEC32,33.
Project Site: USGS San Juan Capistrano 7.5' Quadrangle / T07S,R08W,sec4.

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2,000 1,000 0 2,000
Feet

Exhibit A
Record Search Map

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-000286	CA-ORA-000286	Resource Name - HOGAN SITE / LAGUNA CYN #C	Site	Prehistoric	AP02; AP14; AP15	1970 (McKinney, PCAS)	OR-01926, OR-01995, OR-03441, OR-03867, OR-03937, OR-04247, OR-04449
P-30-000414	CA-ORA-000414	Resource Name - Jas-10	Site	Prehistoric	AP02; AP15	1973 (Foster; Reeves, Archaeological Research, Inc); 1988 (Demcak, Carol R., ARM)	OR-00431, OR-00702, OR-00926, OR-01073, OR-01129, OR-01995, OR-02089, OR-03586
P-30-000419	CA-ORA-000419	Resource Name - CSRI 205	Site	Prehistoric	AP02; AP08	1973 (COOLEY, RMW Paleo Associates, Inc.); 1979 (OXENDINE)	OR-00304, OR-00431, OR-00702, OR-01439, OR-01995, OR-02089
P-30-000420	CA-ORA-000420		Site	Prehistoric	AP02	1973 (COOLEY, ELLIS, HALL, RMW Paleo Associates, Inc.); 1979; 2008 (P. Fulton)	OR-00431, OR-00702, OR-00718, OR-01843, OR-01995, OR-02089, OR-03586, OR-04103
P-30-000421	CA-ORA-000421		Site	Prehistoric	AP02; AP15	1973 (COOLEY, Archaeological Research, Inc); 1988 (Carol Demcak, ARM)	OR-00431, OR-00702, OR-00926, OR-01129, OR-01995
P-30-000580	CA-ORA-000580	Resource Name - Site 2	Site	Prehistoric	AP02; AP15	1975 (Leonard, N.)	OR-00040, OR-00255, OR-00824, OR-01873, OR-01995, OR-04066, OR-04366, OR-04554
P-30-000581	CA-ORA-000581	Resource Name - Site 3	Site	Prehistoric	AP02; AP15	1975 (LEONARD); 1986 (Bissell, Ronald M., RMW)	OR-00040, OR-00300, OR-00702, OR-00824, OR-01873, OR-01995, OR-02157, OR-03125, OR-04305, OR-04349
P-30-000993	CA-ORA-000993		Site	Prehistoric	AP02	1981 (Schroth; DelChario, Archaeological Resource Management Corp.)	OR-04366

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-001006	CA-ORA-001006	Resource Name - AMH Golf Course Archaeological Site	Site	Prehistoric	AP02; AP15	1982 (Schroth; Del Chario, Archaeological Resource Management Corp); 1991 (Charleton Jones, Archaeological Resource Management Corp); 1998 (R. Bissell, RMW Paleo Associates)	OR-01073, OR-01127, OR-01721, OR-02208
P-30-100178		Resource Name - AMH Golf Course Isolate	Other	Prehistoric	AP02	1998 (R. Bissel, RMW Paleo Associates)	OR-01721

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00254		1977	Whitney-Desautels, Nancy A.	Archaeological Report on the Aliso Creek Specific Plan-planning Unit 1 Located in the El Toro and Laguna Hills Area of the County of Orange		30-000016, 30-000354, 30-000355, 30-000388, 30-000394, 30-000415, 30-000514, 30-000536, 30-000544, 30-000566, 30-000579, 30-000604, 30-000628, 30-000659
OR-00255		1977	Anonymous	Archaeological Report on the Aliso Creek Corridor- Planning Units 2 & 3 Orange County, California	Scientific Resource Surveys, Inc.	30-000006, 30-000008, 30-000009, 30-000010, 30-000017, 30-000018, 30-000019, 30-000020, 30-000033, 30-000040, 30-000074, 30-000110, 30-000126, 30-000131, 30-000133, 30-000135, 30-000388, 30-000389, 30-000390, 30-000395, 30-000396, 30-000397, 30-000398, 30-000399, 30-000400, 30-000401, 30-000402, 30-000403, 30-000404, 30-000405, 30-000406, 30-000407, 30-000512, 30-000515, 30-000580
OR-00304		1978	Dodge, William A.	An Archaeological Assessment of Eight Cultural Localities Along the San Onofre-Santiago 220 Kv Transmission Line	ARCSEARCH	30-000341, 30-000419, 30-000494, 30-000495, 30-000496, 30-000497, 30-000498, 30-000499
OR-00431		1979		Aliso Viejo Cultural/scientific Resources Management Plan	Archaeological Resource Management Corp.	30-000019, 30-000064, 30-000126, 30-000388, 30-000389, 30-000390, 30-000395, 30-000396, 30-000397, 30-000398, 30-000399, 30-000400, 30-000401, 30-000402, 30-000403, 30-000404, 30-000405, 30-000406, 30-000407, 30-000408, 30-000409, 30-000410, 30-000411, 30-000412, 30-000413, 30-000414, 30-000415, 30-000416, 30-000417, 30-000418, 30-000419, 30-000420, 30-000421, 30-000422, 30-000425, 30-000582, 30-000703
OR-00580		1977	Anonymous	The Aliso Creek Watershed, Orange County, California a Proposal for Creating an Archaeological District for the National Register of Historic Places and a Suggested Research and Study Design	Scientific Resource Surveys, Inc.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00702	Paleo -	1977	Scientific Resource Surveys, Inc.	Cultural Scientific Resources Report on the Aliso Viejo Company Property Located in the Southeastern Portion of the County of Orange	Scientific Resource Surveys, Inc.	30-000006, 30-000013, 30-000017, 30-000019, 30-000020, 30-000126, 30-000177, 30-000266, 30-000388, 30-000389, 30-000390, 30-000395, 30-000396, 30-000397, 30-000398, 30-000399, 30-000400, 30-000401, 30-000402, 30-000403, 30-000404, 30-000405, 30-000406, 30-000407, 30-000408, 30-000409, 30-000410, 30-000411, 30-000412, 30-000413, 30-000414, 30-000415, 30-000416, 30-000417, 30-000418, 30-000419, 30-000420, 30-000421, 30-000422, 30-000425, 30-000581, 30-000582, 30-000604
OR-00705		1973	Anonymous	A Final Report on the Scientific Resources Survey for Moulton Ranch	Archaeological Research, Inc.	30-000013, 30-000411
OR-00926		1988	Demcak, Carol R.	Archaeological Investigations at CA-ORA-414, CA-ORA-421, and CA-ORA-1006, Laguna Hills, South Orange County, California	Archaeological Resource Management Corporation	30-000414, 30-000421, 30-001007
OR-00945		1982	Van Horn, David M.	Rossmoor Business Park Liquidating Trust Properties	Ultra Systems, Inc.	30-000610
OR-01073		1990	Jones, Carleton S. and Demcak, Carol R.	Archaeological Investigations at CA-ORA-1006, Locus C Laguna Hills, South Orange County, California	Archaeological Resource Management Corp.	30-000414, 30-001006
OR-01439		1980	McCoy, Lesley C. and Phillips, Roxana	National Register Assessment Program of Cultural Resources of the 230 Kv Transmission Line Rights-of-way From San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substation	Westec Services, Inc.	30-000419, 30-000438, 30-000447, 30-000495, 30-000496, 30-000498, 30-000499, 30-000640, 30-000700, 30-000725, 30-000782, 30-000784, 30-000785, 30-000786, 30-000787, 30-000823, 30-000824, 30-000825, 30-000826, 30-000827, 30-000828, 30-000829, 30-000830, 30-000831, 30-000832, 30-000905
OR-01721		1998	Bissell, Ronald M.	Monitoring of Grading, CA-ORA-1006, Locus C, on the AMH Golf Course Property, Orange County, California	RMW Paleo Associates, Inc.	30-001006, 30-100178
OR-01721		1998	Cummings, Linda Scott, Thomas E. Moutoux, and Kathryn Puseman	Pollen, Phytolith, and Protein Residue Analysis of a Metate Fragment from Site Ca-ORA-1006, California	Paleo Research Laboratories	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-01843		1995	Demcak, Carol R. and Maxwell, Pamela C.	Archaeological Investigations at the Aliso Viejo Sites, South Orange, California	Archaeological Resource Management Corp.	30-000017, 30-000019, 30-000126, 30-000408, 30-000409, 30-000410, 30-000411, 30-000416, 30-000417, 30-000420, 30-000425, 30-000703, 30-001211, 30-001212, 30-001213
OR-02404	Cellular -	2001	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 021-06 Orange County, California	LSA Associates, Inc.	
OR-03586	Cellular -	2008	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC, Candidate LAC408 (Laguna Hills/Columbia), 101 Columbia Road, Aliso Viejo, Orange County, California	Michael Brandman Associates	30-000388, 30-000414, 30-000420

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nahc@nahc.ca.gov

June 5, 2024

Taylor Love
FirstCarbon Solutions

Via Email to: tlove@fcs-intl.com & natalie.queathem@adec-innovations.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Argonaut Project, Orange County

To Whom It May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Juaneno Band of Mission Indians Acjachemen Nation - Belardes on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Tribe Name	Fed (F) Non-Fed (N)	Contact Person
Cahuilla Band of Indians	F	Erica Schenk, Chairperson
Cahuilla Band of Indians	F	BobbyRay Esaprza, Cultural Director
Cahuilla Band of Indians	F	Anthony Madrigal, Tribal Historic Preservation Officer
Gabrieleno Band of Mission Indians - Kizh Nation	N	Christina Swindall Martinez, Secretary
Gabrieleno Band of Mission Indians - Kizh Nation	N	Andrew Salas, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians	N	Anthony Morales, Chairperson
Gabrielino Tongva Indians of California Tribal Council	N	Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council	N	Christina Conley, Cultural Resource Administrator
Gabrielino/Tongva Nation	N	Sandonne Goad, Chairperson

Gabrielino-Tongva Tribe	N	Sam Dunlap, Cultural Resource Director
Gabrielino-Tongva Tribe	N	Charles Alvarez, Chairperson
Juaneno Band of Mission Indians	N	Sonia Johnston, Chairperson
Juaneno Band of Mission Indians Acjachemen Nation - Belardes	N	Joyce Perry, Cultural Resource Director
Juaneno Band of Mission Indians Acjachemen Nation 84A	N	Heidi Lucero, Chairperson, THPO
La Jolla Band of Luiseno Indians	F	Norma Contreras, Chairperson
Pala Band of Mission Indians	F	Alexis Wallick, Assistant THPO
Pala Band of Mission Indians	F	Christopher Nejo, Legal Analyst/Researcher
Pala Band of Mission Indians	F	Shasta Gaughen, Tribal Historic Preservation Officer

Pauma Band of Luiseno Indians	F	Temet Aguilar, Chairperson
Santa Rosa Band of Cahuilla Indians	F	Steven Estrada, Tribal Chairman
Santa Rosa Band of Cahuilla Indians	F	Vanessa Minott, Tribal Administrator
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer
Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist

This list is current only as of the date of this document. Distribution of this list does not relieve

This list is only applicable for consultation w

Native American Heritage Commission
Native American Contact List
Orange County
6/5/2024

Contact Address	Phone #	Fax #	Email Address
52701 CA Highway 371 Anza, CA, 92539	(951) 590-0942	(951) 763-2808	chair@cahuilla-nsn.gov
52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549		besparza@cahuilla-nsn.gov
52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549		anthonymad2002@gmail.com
P.O. Box 393 Covina, CA, 91723	(844) 390-0787		admin@gabrielenoindians.org
P.O. Box 393 Covina, CA, 91723	(844) 390-0787		admin@gabrielenoindians.org
P.O. Box 693 San Gabriel, CA, 91778	(626) 483-3564	(626) 286-1262	GTTribalcouncil@aol.com
P.O. Box 490 Bellflower, CA, 90707	(562) 761-6417	(562) 761-6417	gtongva@gmail.com
P.O. Box 941078 Simi Valley, CA, 93094	(626) 407-8761		christina.marsden@alumni.usc.edu
106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	(951) 807-0479		sgoad@gabrielino-tongva.com

P.O. Box 3919 Seal Beach, CA, 90740	(909) 262-9351		tongvatcr@gmail.com
23454 Vanowen Street West Hills, CA, 91307	(310) 403-6048		Chavez1956metro@gmail.com
P.O. Box 25628 Santa Ana, CA, 92799			sonia.johnston@sbcglobal.net
4955 Paseo Segovia Irvine, CA, 92603	(949) 293-8522		kaamalam@gmail.com
31411-A La Matanza Street San Juan Capistrano, CA, 92675	(562) 879-2884		jbmian.chairwoman@gmail.com
22000 Highway 76 Pauma Valley, CA, 92061	(760) 742-3771		
PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3537		awallick@palatribe.com
PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3564		cnejo@palatribe.com
PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3515		sgaughen@palatribe.com

P.O. Box 369 Pauma Valley, CA, 92061	(760) 742-1289	(760) 742-3422	bennaecalac@aol.com
P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	(951) 659-2228	sestrada@santarosa-nsn.gov
P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	(951) 659-2228	vminott@santarosa-nsn.gov
P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279	(951) 654-4198	jontiveros@soboba-nsn.gov
P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261	(951) 654-4198	jvaldez@soboba-nsn.gov

any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the P
Resources Code.

with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Argonaut Project, Orange C

Cultural Affiliation	Counties	Last Updated
Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	2/1/2024
Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	6/28/2023
Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	6/28/2023
Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	12/4/2023
Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/28/2023

Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Juaneno	Orange,Riverside,San Diego	
Juaneno	Los Angeles,Orange,Riverside,San Bernardino,San Diego	3/17/2023
Juaneno	Los Angeles,Orange,Riverside,San Bernardino,San Diego	3/28/2023
Luiseno	Orange,Riverside,San Diego	
Cupeno Luiseno	Orange,Riverside,San Bernardino,San Diego	11/27/2023
Cupeno Luiseno	Orange,Riverside,San Bernardino,San Diego	11/27/2023
Cupeno Luiseno	Orange,Riverside,San Bernardino,San Diego	11/27/2023

Luiseno	Orange,Riverside,San Diego	
Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	4/8/2024
Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	4/8/2024
Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023
Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023

ublic Resources Code and section 5097.98 of the Public

ounty.

Record: PROJ-2024-002895
Report Type: AB52 GIS
Counties: Orange
NAHC Group: All



Photograph 1: Overview of the project site from the northeast corner. View SW.



Photograph 2: Overview of the project site from the northeast corner. View south.



Photograph 3: Overview of the project site from the northeast corner. View west.



Photograph 4: Overview of the project site from the northwest corner. View SE.



Photograph 5: Overview of the project site from the northwest corner. View east.



Photograph 6: Overview of the project site from the northwest corner. View south.



Photograph 7: Overview of the project site from the southwest corner. View NE.



Photograph 8: Overview of the project site from the southwest corner. View north.



Photograph 9: Overview of the project site from the southwest corner. View east.



Photograph 10: Overview of the main entrance of building. View north.



Photograph 11: Overview of the project site from the southeast corner. View SW.



Photograph 12: Overview of the project site from the northwest corner. View SW.



Photograph 13: Overview of the project site from the northwest corner. View north.

Volume I:
A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9

Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways

EA 06-0A7408 TEA Grant

By:
Jack Meyer
D. Craig Young
Jeffrey S. Rosenthal

February 2010



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CHAPTER 1. INTRODUCTION

The California Department of Transportation (Caltrans) is conducting a cultural resources inventory of rural roads in Districts 6 and 9 (hereafter District 6/9), which includes the counties of Madera, Fresno, Kings, Tulare, Kern, Mono, and Inyo (Figure 1). The inventory combines survey for prehistoric and historic-period archaeological sites, historic-period structures, and architectural properties, along with Native American consultations and ethnographic studies (Davis-King et al. 2009; Leach-Palm et al. 2009a, 2009b; Milliken et al. 2010). In addition, the following geoarchaeological investigation was implemented as part of the inventory to provide Caltrans with baseline information on the potential for buried archaeological resources along rural road segments. This is the third in a series of geoarchaeological investigations conducted for Caltrans designed to address the relationship between late Quaternary landscape evolution and the structure and visibility of the archaeological record. The previous two studies focused on districts 3 and 10 which include the southern Sacramento Valley, northern San Joaquin Valley, and adjacent portions of the eastern Coast Ranges and western Sierra Nevada (Meyer and Rosenthal 2008; Rosenthal and Meyer 2004b). A more geographically restricted study was also completed for the southern Santa Clara Valley (Rosenthal and Meyer 2004a).

The seven counties of Caltrans District 6/9 encompass a diverse landscape, extending eastward from the Diablo and Temblor ranges, across the San Joaquin Valley and Sierra Nevada, to the southwestern Great Basin and northern Mojave Desert (Figure 1). Included within the study area are Mt. Whitney and Death Valley, the highest (4,421 meters [14,505 feet] above sea level) and lowest (86 meters [282 feet] below sea level) points, respectively, in the contiguous United States. Over the span of human occupation in the new world, roughly the past 15,000 years, this landscape has changed dramatically, providing a dynamic backdrop for human colonization, social development, and economic change. In response to world-wide fluctuations in climate, massive glaciers that once occupied the highest peaks of the Sierra Nevada receded, extensive river and lake systems east and west of the Sierra Nevada declined and often dried, 35 genera of mammals including the largest ice-age herbivores became extinct (Grayson 1993), and repeated cycles of erosion and deposition sculpted and transformed the landscape. Such extensive changes not only affected the ways in which humans interacted with the environment, but also how and where evidence of past human occupation is preserved in the modern landscape.

The current study begins with the premise that the archaeological record is inherently biased by processes of landscape evolution. Older archaeological deposits are frequently under-represented at the surface of the modern landscape due to cyclical periods of erosion and deposition during the Holocene (<11,500 cal BP). This is particularly true in the southern San Joaquin Valley and basins east of the Sierra Nevada where substantial alluvial fans and floodplains developed episodically during the span of human occupation. Yet the region also has among the highest concentrations of surface archaeological deposits in California dating to the late Pleistocene and early Holocene. The presence of these ancient surface sites attests to the temporal mosaic that is the modern geomorphic landscape.

With this in mind, a primary goal of the current study was to establish the age and depositional history of late Pleistocene landforms (<25,000 years old) within the seven counties of Caltrans District 6/9. Understanding the age of different landforms is first-order geochronology (Butzer 1980; Renfrew 1976; Waters 1992), a fundamental step in discerning where the archaeological record is likely to be buried, and where cultural remains deposited over the entire span of human occupation may be preserved on or just below the modern ground surface. By mapping the age of surface landforms, we are able to make an initial assessment of the potential for buried archaeological resources throughout a large segment of south-central California, from the eastern foothills of the Coast Ranges to the valleys of the western Great Basin and northern Mojave Desert, providing baseline information on the age of associated archaeological sites. Maps and descriptions of Holocene landscape evolution generated by this study should supplement surface surveys and provide additional contextual information that can be used by resource managers to make decisions about the need for subsurface reconnaissance in particular project areas.

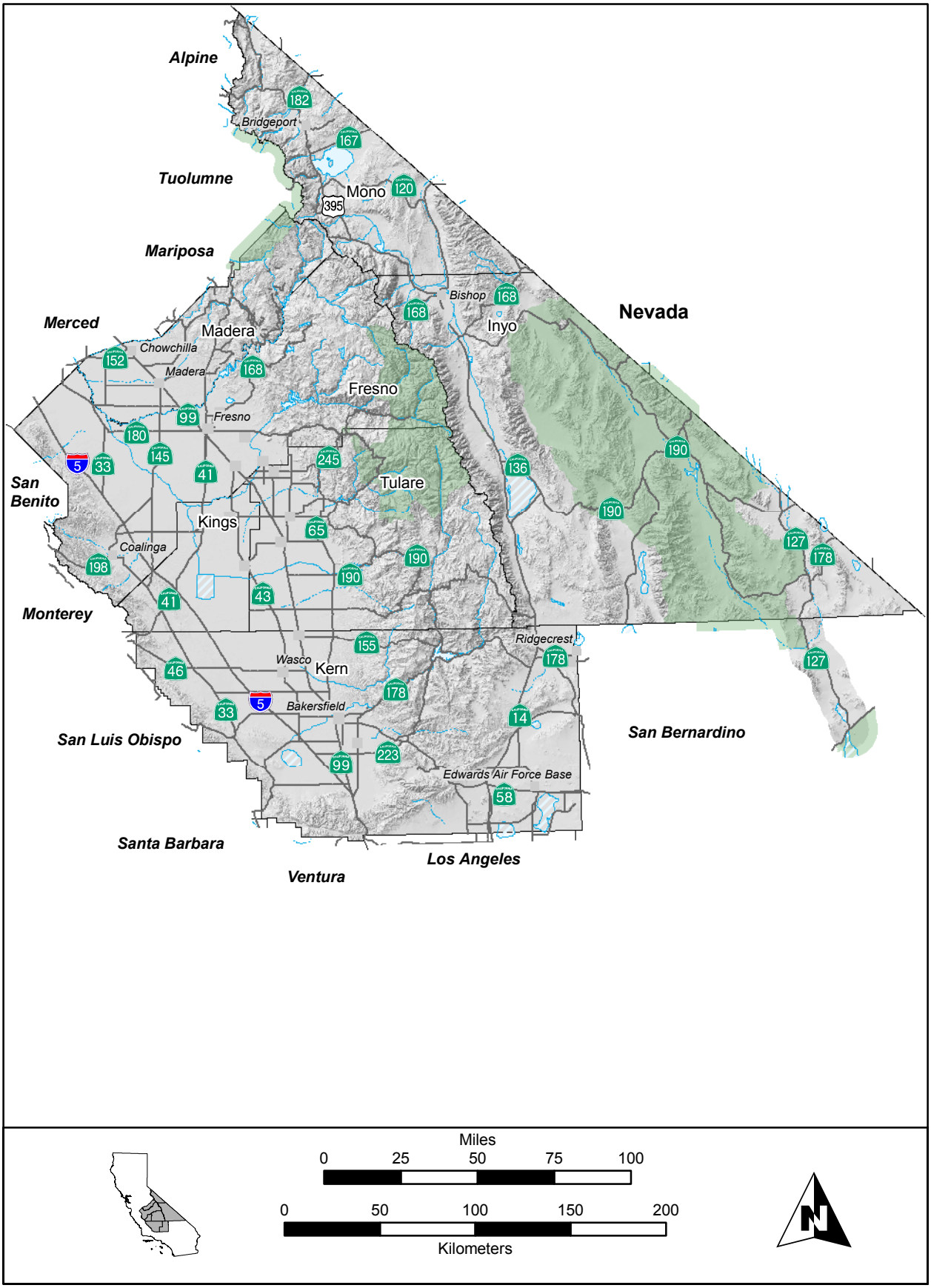


Figure 1. Project Area.

METHODS

Although large portions of the California landscape were emplaced long before humans entered North America, numerous recent studies have shown that repeated cycles of erosion, deposition, and landscape stability have occurred during the latest Pleistocene and Holocene (e.g., Allen et al. 1999; Bacon et al. 2003; Benson et al. 1997; Meyer 1996; Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2004b; Shlemon and Begg 1975; Wells et al. 2003; White 2003; Young 2009). As a result of these cyclical processes, buried archaeological deposits are not distributed randomly, but are confined to those portions of the landscape that developed during the span of human occupation (i.e., roughly the last 15,000 years; e.g., Goebel et al. 2008; Waters and Stafford 2007). Segments of the surface landscape that developed prior to human colonization of North America obviously cannot contain buried archaeological deposits (Rosenthal and Meyer 2004a, 2004b). With this basic understanding, the search for buried portions of the archaeological record in District 6/9 can be narrowed to recent landform segments, allowing extensive, older portions of the landscape to be confidently excluded from consideration.

To identify the age and extent of different landform segments within the study area, we relied heavily on the recently compiled Soil Survey Geographic Database (SSURGO) and the State Soils Geographic database (STATSGO). Because soil formation is a by-product of sustained or prolonged landscape stability, the degree of soil development is directly related to the amount of time a landform has been subjected to near-surface weathering processes. Landforms with well-developed soils have been stable longer than those with weakly or moderately developed soils. Using these characteristics of soil development we are able to group soil types and landform segments with similar weathering profiles into larger chronostratigraphic units within the SSURGO and STATSGO databases. The age of different soil series and their associated landforms are further refined through the compilation of contextual information for more than 2,400 previously reported radiocarbon dates, analysis of landform superposition, field examination of stratigraphic relationships, and targeted radiocarbon dating for this study. From this work, we produced a detailed map of latest Pleistocene, Holocene, and Historical landforms in District 6/9 (presented in Chapter 5). The age of these landforms serves as a basis for determining their potential to contain buried archaeological deposits and allows for an initial assessment of the relationship between archaeological sites of different ages and the timing of landscape evolution in western California, the southwestern Great Basin, and northwestern Mojave Desert.

Compensating for secular variations in the cosmic output of radiocarbon over time, all radiocarbon dates used in this report (unless otherwise indicated) were calibrated to calendar (solar) years before present (cal BP). Radiocarbon dates less than about 22,000 ^{14}C BP were adjusted using the CALIB version 5.1 program in accordance with Stuiver and Reimer (1993); zero years before present (0 BP) equals 1950 AD by convention. Dates greater than about 22,000 ^{14}C BP were calibrated in accordance with Fairbanks et al. (2005) using an on-line computer program. Regional correction factors were applied to all dates from marine and freshwater shell to compensate for the reservoir effects of old or dead carbon (Berger and Meek 1992; Culleton 2006). The exception is small freshwater gastropods which do not require such corrections (Pigati 2002; Pigati et al. 2004). Unless otherwise indicated, single dates are reported as the calculated median probability, and the error ranges are reported at the 2-sigma (95%) confidence level, and are identified by their original lab number.

RESEARCH AGENDA

According to Waters (1992:7-11), modern geoarchaeological research has three main objectives: (1) place archaeological deposits in their temporal and stratigraphic context; (2) understand the natural processes of site formation; and (3) reconstruct the paleo-landscape. Given the scale of the current study—covering much of south-central California—we apply this geoarchaeological agenda in the broadest sense.

Because we are primarily concerned with the relationship between region-wide patterns of landscape evolution and its affect on the structure and visibility of the archaeological record, discerning the nature, timing, and extent of landscape change is a two-fold problem. It requires not only consideration of the outcome of geomorphic processes (i.e., deposition, stability, erosion), but also the environmental mechanisms responsible for those processes.

Climatically Induced Landscape Change

Long-standing models of late Quaternary landscape evolution, particularly in western California (i.e., west of the Sierra Nevada), assume a direct relationship between climatically driven glacial cycles and episodic development of nested alluvial fans at the base of the Sierra Nevada (Atwater et al. 1986; Dupre et al. 1991; Marchand and Allwardt 1981; Harden and Marchand 1980). Although these models have been regularly invoked to explain and date fan sequences throughout much of central California, they remain largely untested. Less than a handful of radiocarbon dates from widely separated localities has been used to support original suppositions about the timing of fan development and mechanisms responsible for deposition on the western slope of the Sierra Nevada. As a result, the relationships between the timing of glacial advance and recession, and fan aggradation and incision have never been clearly defined or demonstrated.

On the eastern flank of the Sierra Nevada, no well-substantiated fan chronology currently exists, leaving a potentially important record of late Pleistocene and Holocene landscape evolution undefined. Resolution of this record will ultimately be important for understanding the relationship between glacial cycles and the mechanisms and timing of landscape change in the Owens Valley, Mono Basin, and Bridgeport Valley. Away from glaciated watersheds in the Great Basin and Mojave Desert, alluvial deposition has been treated more idiosyncratically, primarily interpreted as a response to local geomorphic thresholds. However, even in isolated basins, it is probable that large-scale environmental fluctuations would have triggered a geomorphic response discernable in the modern landscape.

Pleistocene-Holocene Environmental Change and Human Land Use

Paleoclimatic changes that affected resource distributions would have had a strong influence on native subsistence economies and, in turn, settlement locations, ultimately influencing where archaeological deposits from different time periods are preserved in the modern landscape. The extensive system of interconnected lakes and rivers that unified a large portion of the southwestern Great Basin and northern Mojave Desert during the late Pleistocene was on the decline when humans first entered this region. The value of lakeside and riparian ecosystems to early subsistence economies is attested to by the high density of latest Pleistocene and early Holocene human settlements associated with now-dry lake beds and river channels, both east and west of the Sierra Nevada. However, many of the earliest sites in these lake basins are found well below the elevation of late Pleistocene lake stands, suggesting that human occupation occurred at a time when pluvial lakes were desiccated, or in a recessional phase.

The relationship between early human occupation and now-dry lake basins, particularly in the Mojave Desert, has a long history of archaeological research, yet we continue to know very little about the composition of subsistence economies during this time period and the specific resources that made lake basins attractive to late Pleistocene and early Holocene foragers throughout the Great Basin, Mojave Desert, and San Joaquin Valley. Likewise, how early foraging groups accommodated end-Pleistocene and early Holocene shifts in biotic productivity remains poorly resolved. We cannot begin to fully understand the nature of these early subsistence economies until well-preserved assemblages of associated dietary debris are discovered, and these will only occur in buried stratigraphic contexts, making the search for such deposits paramount.

Archaeology in an Active Volcanic Region

The Inyo-Mono volcanic chain is one of the most active volcanic regions in North America. Numerous volcanic eruptions have occurred in this part of eastern California during the latest Pleistocene and Holocene, with potentially devastating effects to human foraging groups and the primary plant and animal foods from which they made their living (e.g., Hall 1983). These eruptive events spewed tons of volcanic ash and pumice across a significant portion of the study area, obscuring many older archaeological deposits and producing important stratigraphic signatures identified in lake sediments and alluvial landforms east and west of the Sierra Nevada. Furthermore, the distribution of ejected debris has important implications for the efficacy of standard archaeological survey, particularly in Long Valley, Mono Basin, and adjacent lowlands.

The Inyo-Mono region also contains some of the most important prehistoric obsidian quarries in the far west. For at least 13,000 years this material has been quarried and moved by people throughout the Great Basin

and Mojave Desert and across the Sierra Nevada into central California. The distribution of different obsidian sources provides important information useful in reconstructing past foraging territories, changing social relations, and exchange networks across a large portion of south-central California. To the extent that obsidian was an integral part of prehistoric technologies in eastern California, the geographic distribution of obsidian quarries is also thought to have been a factor influencing land use and mobility at different times in the past.

Filling the Middle Holocene Gap

Both east and west of the Sierra Nevada, the record of middle Holocene (ca. 7000 to 4000 cal BP) human occupation remains difficult to find, vastly underrepresented compared to sites from the late Holocene. In both regions, declines in effective precipitation during the middle Holocene are thought to have had structural effects on prehistoric economies and influenced changes in land use, potentially resulting in wholesale abandonment of arid regions (e.g., Elston 1982; Grayson 1993). The extent to which environmental changes actually affected human populations is an on-going problem for archaeologists. The apparent dearth of middle Holocene and earlier sites may in part be related to extensive landscape changes during the late Holocene, obscuring these older deposits, particularly in well-watered settings such as the Owens Valley and San Joaquin Valley.

STRUCTURE OF THE REPORT

We address these research concerns in the following chapters, beginning with an overview of the physiography and climate of the Study Area (Chapter 1), both of which had a strong influence on the nature of landscape evolution in south-central California. Chapter 2 begins with an overview of late Pleistocene and Holocene glacial cycles in the Sierra Nevada and a discussion of pluvial lakes in both eastern and western California, critical background for understanding existing models of landscape change in the Study Area. The second part of Chapter 2 examines the glacial model of landscape evolution, focusing on discrepancies between glacial cycles and alluvial fan and floodplain development in central California. Chapter 3 begins with a new model of landscape evolution based on region-wide changes in climate. A climate change model better accounts for cyclical landscape responses identified in both glaciated and unglaciated drainages and throughout the Holocene, when glacial mechanisms would have been inconsequential.

Next, more than 2,000 radiocarbon dates are used to redefine the depositional history of major landform segments in District 6/9. The Study Area's chronostratigraphy serves as a foundation for regional modeling of landscape change and a basis for the map of buried site potential ultimately presented. Chapter 4 provides an overview of the Holocene eruptive history of the Inyo-Mono volcanic chain, identifies the timing and geographic extent of a series of Holocene ash-falls affecting the eastern and western Sierra Nevada, and tracks the earliest use and geographic distribution of obsidian from several important prehistoric quarries located in the Study Area. Chapter 6 provides an assessment of buried site potential throughout District 6/9 based on the distribution of Holocene-age landforms and a simple model of human settlement. Particular attention is paid to Caltrans highway alignments, documenting the buried site potential of each rural road segment. The final chapter (Chapter 7) outlines methodological approaches for identifying and sampling buried archaeological sites.

CHAPTER 2. ENVIRONMENTAL SETTING

Caltrans District 6/9, also referred to as the Study Area, is located in south-central California and encompass nearly 35,922 square miles, close to one-quarter of the modern state. District 6 falls almost entirely west of the Sierra Nevada crest, and includes the counties of Madera, Fresno, Kings, Tulare, and Kern. Only a portion of eastern Kern County extends across the Sierra Nevada and Tehachapi Range into eastern California. All of District 9, which includes the counties of Inyo and Mono, lies east of the Sierra Nevada crest.

Varied relief and physiography across the districts create significant differences in temperature and precipitation from west to east and from north to south. These environmental differences had a direct bearing on past distributions of economically important plant and animal foods, which in turn influenced prehistoric human settlement-subsistence strategies and land-use patterns. Likewise, these factors contributed to the nature and extent of landscape evolution, as well as the context, preservation, and location of archaeological deposits from different time periods.

With these relationships in mind, the current chapter begins with an overview of the Study Area's physical geography, providing descriptions of major mountain ranges, valley systems, and hydrologic patterns. Then we examine the region's diverse climate, focusing on the ways in which topography and weather patterns interact to affect temperature and precipitation.

PHYSICAL GEOGRAPHY AND HYDROLOGY

The Study Area cross-cuts five major geomorphic provinces, including portions of the Coast Ranges, Central Valley, Sierra Nevada, Basin and Range, and Mojave Desert. Elevations range from 4,421 meters (14,494 feet) above mean sea level[1] at Mt Whitney to 86 meters (282 feet) below sea level at Death Valley, attesting to the marked topographic relief which characterizes the Study Area. With the exception of the Transverse Ranges, all major mountain chains are oriented roughly northwest to southeast, creating a series of parallel valley systems.

The Sierra Nevada is the most prominent mountain range in California and serves as a natural divide between western California and the Great Basin and Mojave Desert to the east. California's Coastal Range lies along the western border of the Study Area, separated from the Sierra Nevada by the San Joaquin Valley. Owens Valley lies between the steep escarpment of the eastern Sierra Nevada and the White and Inyo mountains, while further east, Panamint Valley and Death Valley are flanked by the Panamint and Armagosa ranges, respectively. Several other smaller mountain ranges and internally drained valleys fall within the Great Basin and Mojave Desert portions of the Study Area, adding to their topographic heterogeneity and hydrologic complexity (Figure 2).

Coast Ranges

The foothills of the Diablo Range (a portion of California's Coast Ranges) form the western boundary of the Study Area in Madera, Fresno, and Kings counties, while the Temblor Range forms the western border in Kern County. Rising more than 915 meters (3,000 feet) above the San Joaquin Valley, the eastern margin of the Diablo Range is composed of uplifted Cretaceous-age marine sandstone, siltstone, shale, and conglomerate of the Great Valley sequence (Jennings 1977). Further west, the older Franciscan assemblage forms the core of the Coast Ranges and structurally occurs beneath rocks of the Great Valley sequence. The Franciscan formation consists mainly of bedded deposits of greywacke and shale divided by a discontinuous mélange of greenstone, greywacke, gabbro, serpentinite, and red and green radiolarian chert. Metamorphism of the Franciscan assemblage has also resulted in the development of metagraywacke, metachert, actinolite schist, and glaucophane schist. These rocks outcrop widely throughout the central part of the range, and frequently occur as secondary alluvial deposits and as bed-load in modern stream channels exiting the coastal range into the San Joaquin Valley.

[1] Unless otherwise indicated, all elevations are presented as Above Mean Sea Level.

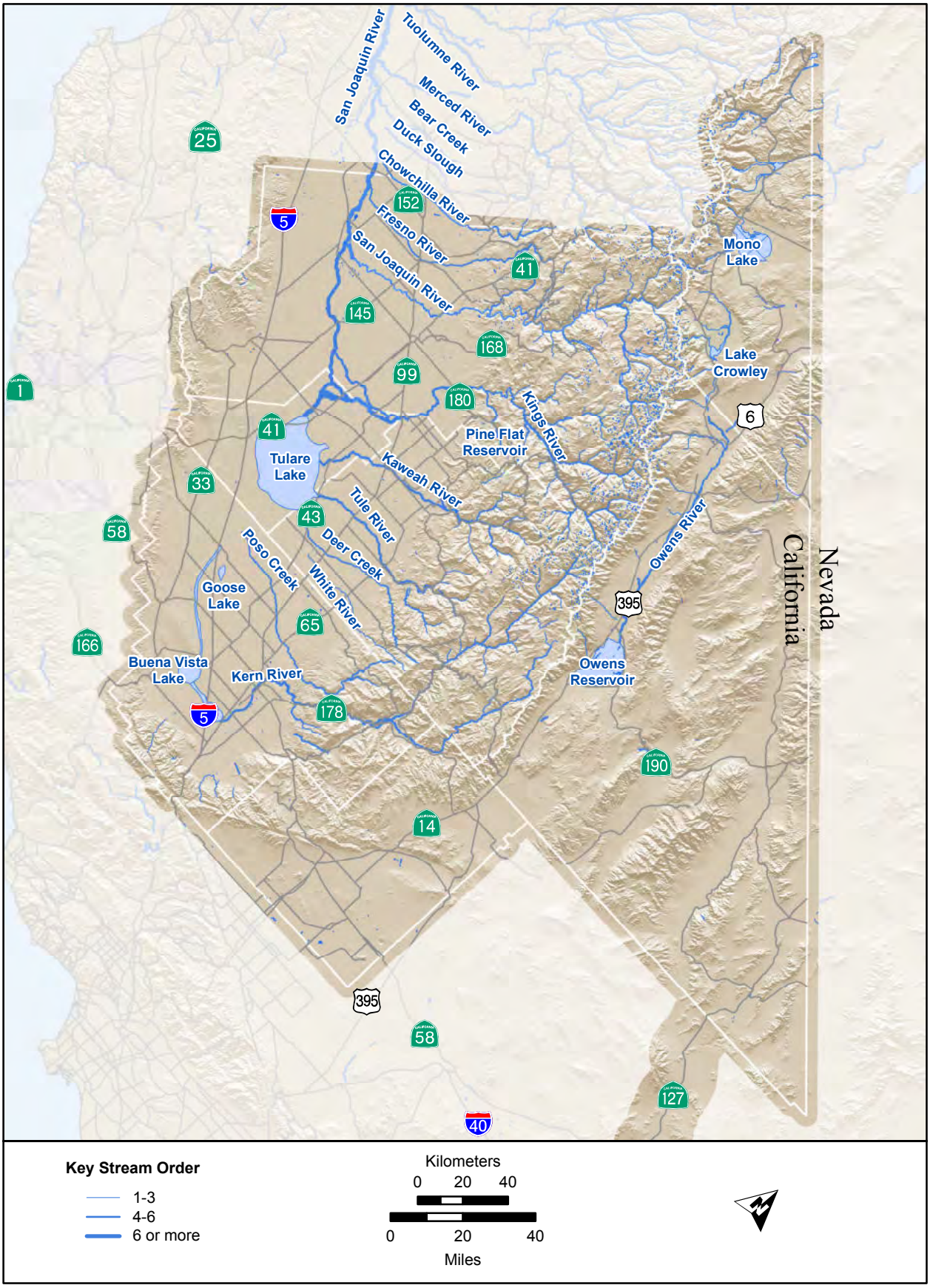


Figure 2. Location and Extent of Major Rivers and Streams in the Study Area.

Numerous streams bisect the foothills of the Diablo Range west to east, carving relatively deep, terraced canyons that connect small interior valleys with the San Joaquin Valley. Among the major drainages are, from north to south, Little Panoche Creek, Panoche Creek, Tumey Gulch, Arroyo Hondo, Cantua Creek, Salt Creek, Los Gatos Creek, Jacalitos Creek, and Zapato Chino Creek. Where these streams exit the Diablo Range, they have built relatively steep alluvial fans that coalesce to form a narrow piedmont along the entire mountain front. The eastern Diablo Range does not typically provide enough water to maintain continuous year-round flows, and most drainage systems are completely dry by mid-summer. Even when sufficient water is present between December and May, few if any of these drainages actually reach the axial San Joaquin River, dissipating instead into porous alluvial deposits along the valley margins (Lettis 1985).

To the south, the Temblor Range is divided from the main body of the Coast Range by the San Andreas Fault which extends in a northwest-southeast direction forming the Chalome Creek drainage. The Temblor Range is also younger than its northern counter-part, consisting of uplifted Miocene marine sandstone, shale, siltstone, conglomerate, and breccia. It is separated from the main San Joaquin Valley by a series of low, northwest-trending ridges and valleys formed by neo-tectonic activity along the San Andreas Fault. These ridges are composed of loosely consolidated continental sedimentary deposits of Pliocene- and Pleistocene-age sandstone, shale, and gravel, including the Kettleman Hills, Lost Hills, and Elk Hills (Jennings 1977). In-between the main body of the Diablo Range and the Temblor Range lie Antelope Valley and the Antelope Plain. Bitterwater Creek, Chico Martinez Creek, Salt Creek, and Buena Vista Creek are the main drainages exiting the Temblor Range en-route to the basins of the southern San Joaquin Valley. Like streams to the north, those exiting the Temblor Range seldom maintain surface flows, remaining dry throughout a large portion of the year.

Tehachapi Mountains and Transverse Ranges

The Tehachapi Mountains form the southern boundary of the San Joaquin Valley and are the northernmost of the transverse ranges, rising to an elevation over 2,410 meters (7,900 feet) at Double Mountain. The main body of the Transverse Ranges, which lie south of the current Study Area, run perpendicular to virtually all other mountain and valley systems in California. They were formed as a result of a bend in the San Andreas Fault, causing compressional uplift where the Pacific Plate moves in a westward direction against the North American Plate. The Tehachapi Mountains link the Coast Ranges with the southern Sierra Nevada and also separate western California from the Mojave Desert and Great Basin to the south and east. They are underlain by granitic rocks of the Sierran batholith and were developed as a result of movement along the Garlock Fault which runs along the southern flanks of the range. The San Emigdio Mountains lie immediately to the northwest of the Tehachapis along the southwestern margin of the San Joaquin Valley. These mountains are a southern extension of the Coast Range as indicated by their similar lithologies, mainly of Tertiary, sandstone, shale, siltstone, conglomerate and breccia (Jennings 1977).

A series of minor streams exit the northern slopes of the Tehachapi and San Emigdio mountains flowing northward into Buena Vista and Kern basins. From west to east these include Bitter Creek, Santiago Creek, Los Lobos Creek, San Emigdio Creek, Pleito Creek, Salt Creek, Tecuy Creek, Pastoria Creek, Tunis Creek, El Paso Creek, Tejon Creek, Comanche Creek, and Caliente Creek. Those drainages on the western side of the San Emigdio Range, such as Quatal Canyon and Alamo Creek, form the headwaters of the Cuyama River which drains westward through the Coast Range to the Pacific Ocean via the Santa Maria River. Like other drainages in this region, surface flows are rare, and most streams draining the Tehachapi and San Emigdio ranges remain dry most of the year.

San Joaquin Valley

The San Joaquin Valley segment of the Study Area begins on the north at the Madera-Merced and Fresno-Merced county lines. The valley is bound by the Diablo Range on the west, Tehachapi and San Emigdio Mountains on the south, and Sierra Nevada Mountains on the east. Included are portions of Madera, Fresno, Kings, Tulare, and Kern counties. The valley itself is an asymmetric structural trough, underlain by thick deposits of Quaternary alluvium eroded from the surrounding mountain fronts (Bartow 1991). Elevations on the valley floor gradually decline northward from about 105 meters (345 feet) at Greenfield near the base of the Tehachapis,

to about 33 meters (108 feet) near the Fresno, Madera, and Merced county lines. Expansive, low-gradient alluvial fans form a broad piedmont on the eastern side of the valley bordering the Sierra Nevada, while on the western side, coalesced fans originating from the Coast Range are comparatively short and steep. This configuration has caused the axial San Joaquin River to be offset towards the west, directed away from the valley center by the massive alluvial deposits fringing the Sierra Nevada.

The northern San Joaquin Valley is separated from Tulare Basin to the south by a subtle hydrological divide formed by the Kings River fan on the east and the Los Gatos Creek fan on the west. Throughout the historic-era, the Kings River spilled southward through a series distributary channels in its broad deltaic fan, providing about 50% of the water input to Tulare Basin and Tulare Lake (Atwater et al. 1986). In the past, Tulare Lake would periodically overtop the Kings River fan at an elevation of approximately 64 meters (211 feet) (Grunsky 1898a:61) and flow northward into the San Joaquin Valley through a forty-mile-long incision known as Fresno Slough. Near the modern town of Mendota, at an elevation of about 50 meters (160 feet), Fresno Slough merges with the San Joaquin River. Here the river is highly sinuous, branching into a mosaic of sloughs and side channels that diverge from both sides of the main channel. It continues in this manner northward to the Merced County line where it exits the Study Area.

South of the Kings River fan, impounded flows of the Kings, Kaweah, and Tule rivers created Tulare Lake, once the largest body of water west of the Great Lakes (Davis 1999a). Due to historic-period diversion of its main water source (the Kings River), Tulare Lake now stands dry. Historically the lake fluctuated in size from a few square miles during extremely dry years to as much as 800 square miles during wet years (Grusky 1898b:16). Tulare Basin itself is divided into sub-basins by a broad alluvial fan emanating from the Kern River. Kern and Buena Vista lakes once occupied the extreme southern end of the valley and occasionally coalesced and spilled northward into Tulare Lake. Historically these southern lakes were fed mainly by outflow from the Kern River, but minor input also came from numerous seasonal drainages originating from the Tehachapis. Like Tulare Lake, Kern and Buena Vista lakes remain dry as a result of water diversion.

Sierra Nevada

The Sierra Nevada segment of the Study Area incorporates eastern portions of Madera, Fresno, Tulare, and Kern counties, as well as western portions of Mono and Inyo counties. This 640-kilometer- (400-mile-) long mountain range separates the San Joaquin Valley on the west from the Owens Valley and Mono Basin on the east. It is the single largest mountain system in the contiguous United States and varies between 50 and 80 miles wide (Hill 2006). Throughout its entire length, the Sierra Nevada is characterized by a long, gradual western slope and a short, abrupt eastern escarpment. In the current Study Area, the crest of the Sierra rises to elevations over 4,250 meters (14,000 feet) at Mt. Whitney, more than 3,050 meters (10,000 feet) above the Owens Valley floor just ten miles to the east. Numerous other peaks reach elevations above 3,650 meters (12,000 feet), making average elevations in the southern Sierra Nevada the highest along the range's length.

Granitic rocks of the Sierran batholith dominate the eastern and western slopes of the mountain range. Unlike the central Sierra to the north, where a heterogeneous mélange of metamorphic rocks occurs in a continuous expanse along the foothill fault zone, few rocks other than granite are widely exposed in the southern Sierra. The most prominent are isolated and discontinuous outcrops of pre-Cenozoic metasedimentary and metavolcanic materials, including mostly slate, quartzite, hornfels, chert, phyllite, mylonite, schist, gneiss, and marble (Jennings 1977).

Several major rivers drain the western slope of the southern Sierra Nevada, many originating from formerly glaciated headwaters, including the San Joaquin, Kings, Kaweah, and Kern rivers. These drainages have carved deep canyons through the Sierran granite, some as much as 2,440 meters (8,000 feet) deep (Hill 2006). Smaller rivers and streams, such as the Fresno, Chowchilla, and Tule rivers, originate lower on the western slope, below the influence of the former glaciers, and their channels are not as deeply entrenched. Although most rivers in the Sierra assume a parallel course, bisecting the range from east to west, the Kern and upper San Joaquin rivers first travel along the axis of the range, south and north respectively, before turning westward to meet the San Joaquin Valley. Where the major rivers emerge from the western slope, they have built a nested series of massive

alluvial fans which decrease in age basin-ward and often coalesce, creating a broad, low-gradient piedmont that fringes the entire western slope.

The only major drainage emerging from the eastern side of the Sierra is the Owens River. It originates above the southern Mono Basin and first flows eastward into Long Valley and then southward into Owens Valley. Due to the abrupt configuration of the eastern slope, numerous small streams emanate from the once glaciated crest of the Sierra, descending steep canyons en-route to Bridgeport Valley, Mono Basin, or Owens Valley below. Typically these drainages run perpendicular to the long axis of the mountain range and occur about every three to five miles, creating an alluvial apron of coalesced fans along the eastern base of the Sierra Nevada.

In Bridgeport Valley, at the northern end of the Study Area, all major streams merge with the East Walker River and flow eastward into western Nevada. To the south, the Mono Basin is internally drained, capturing surface flows from both the Sierra Nevada and Bodie Hills. The numerous drainages entering the Owens Valley from the eastern slope often dissipate in coarse-grained alluvial fans before reaching the axial Owens River. Further south, Sierran drainages become more widely spaced and only rarely contribute surface flows to the valleys of the northern Mojave Desert.

Great Basin

Falling entirely within Mono and Inyo counties, the Great Basin segment of the Study Area is bound by the Sierra Nevada on the west, the California-Nevada border on the east, and the Mono-Alpine county border on the north. For purposes of this discussion, Rose Valley forms the southern boundary of the Great Basin, lying as it does on the northern edge of the Mojave Desert.

North-south trending mountain ranges divide the Great Basin into a series of long, narrow valley systems that run parallel to the eastern escarpment of the Sierra Nevada. Only at the extreme northern end of the Study Area is this pattern broken by relatively recent volcanic ridges that create several small intermontane basins including Bridgeport Valley, Adobe Valley, Long Valley, and Mono Basin. Further south, the Owens Valley borders the eastern escarpment of the Sierra Nevada, extending more than 80 miles until reaching its southern end at Owens Lake. From there, Rose Valley continues southward between the granitic peaks of the high Sierra and the recent volcanic mountains of the Coso Range.

The eastern side of Owens Valley is defined by the White and Inyo mountains which reach more than 4,250 meters (14,000 feet) at White Mountain Peak. The mountain chain declines southward to its terminus at Cerro Gordo Peak, which stands at about 2,800 meters (9,200 feet) elevation, about 1,220 meters (4,000 feet) above the floor of Owens Lake. Broadly spaced drainages emerge from the western side of the White-Inyo range, producing a series of isolated alluvial cones that extend basin-ward from the bedrock slopes. Due to only minor alluvial input from these mountain fronts, Owens River has assumed a course along the eastern side of Owens Valley, influenced in that direction by the comparatively broad alluvial piedmont at the base of the Sierra Nevada (Hollett et al. 1991). Owens River is fed mainly by run-off from the eastern slope of the Sierra beginning with its headwaters west of Long Valley. The Owens River watershed also incorporates runoff from Benton, Hammill, and Chalfont valleys, located east of Long Valley and the volcanic tablelands.

On the eastern side of the White and Inyo mountains lie several internally drained basins including, from north to south, Deep Springs Valley, Eureka Valley, Saline Valley, and Panamint Valley. The Last Chance Range and Panamint Mountains divide these smaller basins from Death Valley which lies to the east. In turn, Death Valley is separated from the Armagosa Desert and Pahrump Valley in western Nevada by the Armagosa Range.

Mountain ranges in the western part of the Great Basin consist of various combinations of plutonic and volcanic rocks, while those to the east are formed from uplifted marine sedimentary and meta-sedimentary rocks. The former include mainly granitoid and basaltic rocks, as well as localized deposits of obsidian, while the latter are composed of various cherts, slate, sandstone, limestone, dolomite, marble, phyllite, schist, hornfels, gneiss, and quartzite. Alluvial bajadas along valley margins incorporate secondary deposits of these rocks, particularly on older pediments where they are often exposed in continuous pavements.

With the exception of the Owens River and numerous smaller streams draining the eastern Sierra Nevada, surface water is rare in the Great Basin segment of the Study Area. Throughout this region, small springs

provide the main sources of fresh water, supplemented occasionally by winter rainstorms which enliven dry washes and quench perennially dry playas. During the late Pleistocene, however, an inter-connected system of lakes and rivers once unified this region, fed by rainfall and snow melt from the Sierra Nevada and coastal Peninsular Ranges to the west. For the most part, however, only a small vestige of this once extensive river and lake system remains, consisting of the East Walker River, Mono Lake, Owens River, and Owens Lake, sustained by surface flows from the eastern slope of the Sierra.

Mojave Desert

The Mojave Desert portion of the Study Area is situated within the southeastern portion of Kern County and extreme southern end of Inyo County, incorporating portions of Indian Wells, Fremont, and Antelope valleys. The Tehachapi Mountains and Sierra Nevada define the northwestern boundary of the Mojave Desert province, while the San Bernardino and Los Angeles county lines demarcate the eastern and southern boundaries of the Study Area, respectively. The El Paso Mountains and Black Hills separate Indian Wells Valley to the north from Fremont Valley to the south, the latter separated from the Antelope Valley further south by the Rand Mountains, Rosamond Hills, and Bissel Hills. Each of the basins in the Mojave Study Area is distinguished by a valley-bottom playa, dry lakebeds that are enduring remnants of the regions more verdant past. These include the playas at China Lake in Indian Wells Valley, Koehn Lake in Fremont Valley, and Rogers, Buckhorn and Rosamond lakes in Antelope Valley.

Bedrock in the Mojave segment of the Study Area consists mainly of granite, quartz monzonite, granodiorite, and quartz diorite. Volcanic, metavolcanic, and metasedimentary rocks underlie the El Paso Mountains and Black Hills along the Garlock Fault, while outcroppings of schist distinguish sections of the Rand Mountains. For the most part, however, Quaternary-age alluvium characterizes much of the Mojave portion of the Study Area, with extensive Pleistocene- and Holocene-age alluvial fans coalescing along mountain fronts and fringing deep, sediment-filled valleys.

Local springs supply the only regular surface water to the Mojave Desert. The Owens River once flowed into Indian Wells, Searles, and Panamint valleys, but those waters stopped flowing by the early Holocene. Storms occasionally result in discharge from the many washes exiting the eastern Sierra Nevada, but these are typically rare, as most precipitation simply evaporates or sinks into coarse-grained alluvial soils.

CONTEMPORARY CLIMATE

The typical climate of south-central California is zonally sub-tropical (33-42 degrees north latitude) or Mediterranean, with hot dry summers and cool humid winters (Major 1977). The interaction between topography and atmospheric circulation provides the primary control for the region's climate. A dominant influence is the cyclical shift in latitude and intensity of the semi-permanent Pacific High pressure cell (Anderson 1990; Hornbeck 1983; Major 1977). In the winter, as the Aleutian Low moves from its North Pacific position towards the equator, the Pacific High is pushed southward, and places California in line with low-pressure systems brought by westerly winds. A reduced ocean-to-land temperature gradient allows storms originating in the Pacific Ocean to move onshore, bringing widespread precipitation to the state. In montane regions, most winter precipitation occurs as snow. Beginning in the late spring, rapid heating of the continent creates a greater temperature gradient between the ocean and land. The Pacific high-pressure cell intensifies and moves northward, obstructing Pacific air masses from moving onshore, which in turn creates dryer conditions in the summer. During these months, precipitation is mainly limited to convective thunderstorms and sporadic rainfall from fronts originating to the south in the Gulf of California, or to the southwest in the Pacific Ocean (Anderson 1990).

Topographic relief also has a strong effect on patterns of temperature and precipitation in south-central California. The Sierra Nevada serves as a barrier to extremely cold winter air from the Great Basin. Cold winds that do make it over the Sierra are compressionally heated and dried, becoming the Santa Anas of southern California and the "northers" of the Central Valley (Hornbeck 1983). The Coast Ranges also serve as a buffer to the thick marine layer that mediates temperatures along the Pacific coast (Major 1977). More significantly however, the coastal and interior mountains have an important effect on precipitation. Due to the north-south orientation of the Coast Ranges and Sierra Nevada, the prevailing westerly winds are cooled as they rise to

overcome the mountain crests, causing them to release heavy moisture. This results in high amounts of rain and snow on the windward, west-facing slopes of the mountains, but creates a rain shadow on the east sides. Consequently, semi-arid to arid conditions prevail on the eastern side of the Coast Ranges, in the western San Joaquin Valley, and in the Great Basin and Mojave Desert east of the Sierra Nevada (Figure 3).

Coast Ranges

The eastern slope of the Diablo and Temblor ranges is hot and dry in the summer. The constraining mountains block cool marine air from the west, causing temperatures in the summer to be considerably warmer on the east side of the Coast Range than those of the interior valleys and ridges just to the west (Lindsey 1974); in the winter the opposite is true. Average annual precipitation in the uplands of the eastern Diablo Range can reach as much as 20 to 30 inches, while valley regions in the rainshadow to the east average between 2.5 and 6.5 inches annually (Figure 4).

San Joaquin Valley

Summer days in the southern San Joaquin Valley often exceed 38 °C (100 °F), with maximum average temperatures in June and July ranging between about 33-37 °C (92-98 °F) at Bakersfield and 36-37 °C (97-99 °F) at Coalinga. In winter (December to January), maximum average temperatures in these same localities range between 13 to 14.5 °C (57 and 58°F). Approximately 90% of annual rainfall occurs during the winter half of the year, between November and April; more than 50% occurs in January, February, and March. The summer months of June, July, and August are the driest of the year, with only about one percent of average annual rainfall originating from periodic thunderstorms during this season.

The orographic effect of the Coast Ranges, combined with latitude, produce clear geographic variation in annual precipitation across the valley, with less than 6.6 inches of rainfall annually on the western and southern sides of the basin, and between 6.6 and 15 inches annually on the eastern and northern sides (Figure 4). As a result of these differences, climate in dryer portions of the southern and western San Joaquin Valley is characterized as mid-latitude desert, while the remainder of the valley is semi-arid steppe (Figure 3; Hornbeck 1983; Major 1977).

Sierra Nevada

The Sierra Nevada Mountains form a boundary between the cool, moist Pacific air masses from the west and the warm, dry continental conditions of the Great Basin to the east. Climate is typical Mediterranean on the western slope, with warm, dry summers followed by wet, cool winters. Extreme annual variation in temperature and precipitation is characteristic of this region. A combination of eastward-moving storm systems and strong west-to-east elevational gradients result in a general pattern of increasing precipitation and decreasing temperature with rising elevation (Figure 4). Moisture-laden winter storms release large amounts of rain and snow as they ascend the western slope, leaving the eastern flanks of the Sierra with little precipitation (Major 1977).

Mean annual rainfall in the western foothills ranges from approximately 15 to 22 inches, while at mid-elevations average rainfall increases to between 22 and 32 inches (Figure 4). Above about 1,070 meters (3,500 feet), most precipitation occurs as winter snow, with annual depths averaging as much as 400 inches (ca. 50 inches of rain equivalent). Above about 2,440 meters (8,000 feet), precipitation decreases to the crest and continues to decline eastward (Major 1977). Snow blankets the highest peaks and alpine zone from November through May, with periodic snowfall recorded annually to elevations as low as 700 meters (2,300 feet). Although most of the yearly precipitation occurs between November and April, convective thunderstorms originating from the south are not uncommon at mid- to high-elevations in the Sierra during summer months, and contribute a measurable amount to yearly rainfall totals.

In the eastern foothills, the warmest months of the year are July and August with average maximum daily temperatures ranging from about 35 to 36 °C (96 to 98 °F; e.g., at Porterville). At higher elevations, temperatures are somewhat cooler, with maximum daily temperatures in the summer averaging about 32 °C (90 °F). Coolest conditions prevail at the highest elevations, where summer high temperatures average in the low 20s °C

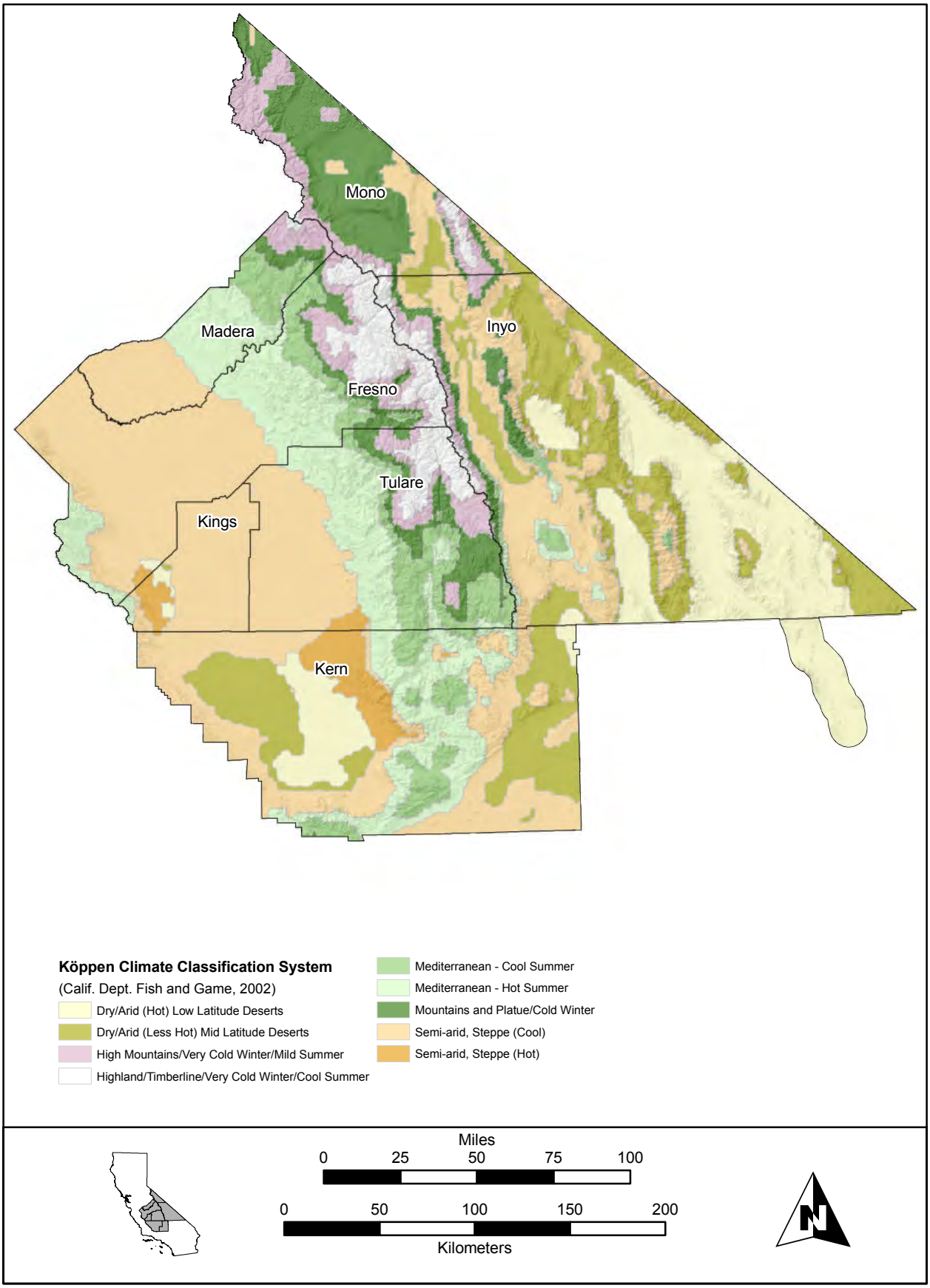


Figure 3. Koppen Climate Zones within District 6/9.

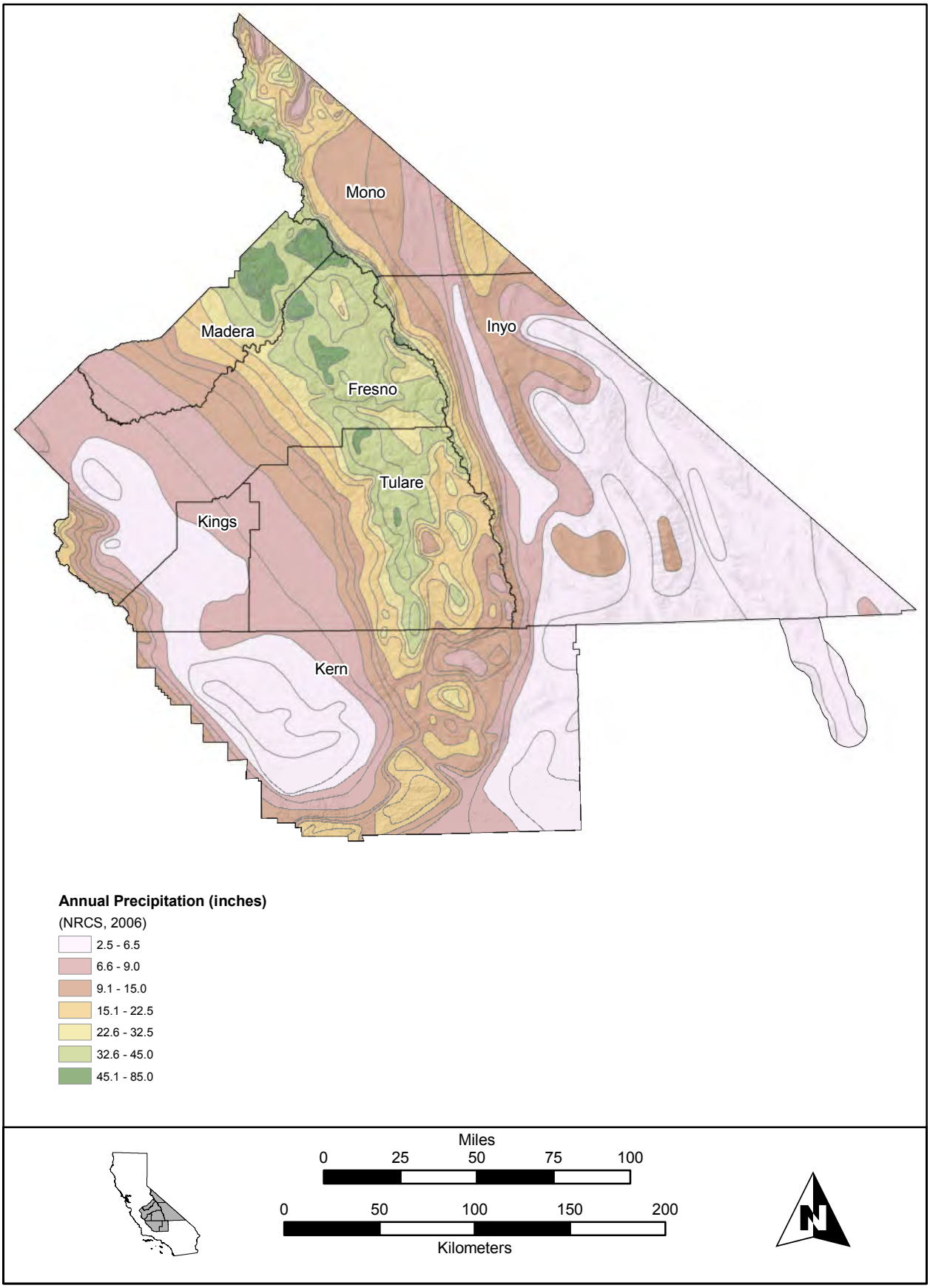


Figure 4. Distribution of Annual Precipitation in District 6/9.

(mid-70s °F; e.g., at Lodgepole). Between December and February, maximum daily temperatures at upper elevations are quite low, averaging just 3 to 4.5 °C (37 to 40 °F). The foothills are mild by comparison, with maximum daily temperatures in December and January averaging between 14 and 18 °C (57 and 64 °F). Most mid-elevation localities have average maximum daily winter temperatures just above 4.5 °C (40 °F).

Great Basin

The Great Basin is a mid-latitude desert, distinguished from the low-latitude Mojave Desert to the south by cooler temperatures in both summer and winter (Grayson 1993:22). In this regard, it is also different from the physiographic Basin and Range province, since cold desert portions of the Study Area are confined mainly to the region between the eastern escarpment of the Sierra Nevada and the White and Inyo mountains; those sections of the Basin and Range geomorphic province to the south and east fall within the bio-geographic Mojave Desert (Grayson 1993).

The rain shadow of the Sierra Nevada assures that little rainfall reaches the western Great Basin, with annual precipitation on the Owens Valley floor averaging less than six inches, about one-third of that obtained at similar elevations on the western slope. Above the Owens Valley in the White Mountains, most precipitation occurs as snow, with as much as 158 inches accumulating annually, about 19 inches of total precipitation. In contrast to the valley floor below, where only a minor amount of rainfall occurs during warm months (April through August), one-third of the annual precipitation in the White and Inyo mountains is derived from summer rain showers.

Maximum winter (December-January) temperatures at Independence on the Owens Valley floor average between 11 and 12 °C (53 and 54 °F), whereas further north at Bridgeport, they range between 5 and 6 °C (42 and 44 °F). Maximum summer (July-August) temperatures in these localities average between about 30 to 36 °C (87 to 97 °F). As would be expected given its higher elevation, both winter and summer temperatures are cooler in the mountains east of Owens Valley, where average daily winter temperatures range between about 0 and 1 °C (32 and 34 °F), while summer temperatures average between about 15 and 18 °C (60 and 65 °F).

Mojave Desert

As the name implies, the Mojave Desert is a very arid region due to its southern latitude and position east of the Sierra Nevada and Peninsular Range. In contrast to the Great Basin further north, this is considered a hot desert, with maximum winter temperatures averaging about 15 °C (60 °F) and summer temperatures averaging between about 35 and 39 °C (96 and 102 °F). Death Valley is considerably warmer, with temperatures in December and January averaging in the mid-60s and summer temperatures averaging between about 45 and 46 °C (113 and 115 °F).

The basins of this region receive less than five inches of rainfall annually, with as little as 2.25 inches on average at Death Valley. Like the rest of the Study Area, the Mojave Desert obtains its yearly rainfall primarily in winter, between December and March. This is unlike the Colorado Desert to the south which receives as much as half of its annual precipitation from summer monsoons. Furthermore, rainfall in the Mojave is sporadic, as particular localities can go many years without measurable precipitation (Major 1977).

CHAPTER 3. EXISTING MODELS AND NOTIONS OF LANDSCAPE CHANGE

> CIVILIZATION EXISTS BY GEOLOGICAL CONSENT,
> SUBJECT TO CHANGE WITHOUT NOTICE.
> ~ WILL DURANT (PHILOSOPHER)

Our current understanding of the mechanisms and timing of late Pleistocene and Holocene landscape evolution in south-central California has been heavily influenced by geological studies of the alluvial fan and floodplain deposits in the San Joaquin Valley (Arkley 1954; 1962; Atwater 1980, 1982; Atwater and Belknap 1980; Harden and Marchand 1980; Marchand 1977a, 1977b; Marchand and Allwardt 1981; Olmstead and Davis 1961), as well as glacial outwash and lacustrine deposits east of the Sierra crest (Bach et al. 1992, 1996; Benson et al. 1998; Blackwelder 1931; Birkeland et al. 1976; Bursik and Gillespie 1993; Clark and Gillespie 1997; Curry 1969, 1971; Davis 1999a; Dorn 1996; Konrad and Clark 1998; Phillips et al. 1996; Smith 1979; Wahrhaftig and Birman 1965). The great majority of these studies assumed that glacial erosion and weathering were the primary mechanisms responsible for generating large amounts of sediment, ultimately transported by melt-water or periodic flood events to adjacent valleys via local rivers and streams. Because similar alluvial fan sequences were recognized along many of the formerly glaciated rivers exiting the Sierra Nevada, it was also assumed that the timing of fan deposition was in phase with glacial cycles and, therefore, development of the alluvial piedmont along the western Sierra and related alluvial deposits in the San Joaquin Valley was mainly a Pleistocene phenomenon. While, it has rarely been specified whether the primary period of sediment deposition occurred during glacial advance or retreat, both Shelmon (1972) and Weismann (Weismann et al. 2002; Weismann et al. 2005) suggest that glacial recession was the primary mechanism of sediment transport, indicating that deposition should have been greatest following the glacial maximum.

In contrast to expansive research focused on the Central Valley of California and adjacent slopes of the western Sierra Nevada, the steep eastern escarpment has been subject to a variety of relatively idiosyncratic studies. This region lacks a synthetic overview correlating regional landforms, especially outside the Owens River system and, as a result, no reliance on an overarching model of landscape change has yet emerged. Nevertheless, if glacial cycles were the primary impetus for alluvial fan development on the western slope, this mechanism too should have had a strong influence on the nature and timing of fan aggradation in the Owens Valley and other basins fronting glaciated mountains east of the Sierra Nevada.

Although the glacial model has served as an organizing framework for numerous geological studies throughout central California, few attempts have been made to actually demonstrate that glacial periods in the Sierra Nevada correlate with the age of alluvial deposits presumed to derive from these cycles. To date, temporal linkages between particular glacial periods and outwash deposits have been based largely on relative dating techniques, such as geomorphic position, cross-cutting relations, and soil development (Bach and Elliot-Fisk 1996; Birkeland et al. 1976; Birkeland et al. 1980; Birkeland and Burke 1988; Swanson et al. 1993, among others). In many cases, one-to-one correlations between glacial intervals and outwash deposits could not be established because the resulting sediments were missing from central parts of glacial drainages, particularly west of the Sierra crest (Janda and Croft 1967; Matthes 1960). While some glacial moraines and outwash deposits have been radiocarbon dated, especially on the eastern slopes of the Sierra (Bach et al. 1996; Bursik and Gillespie 1993; Curry 1971; Clark and Gillespie 1997; Dorn 1996; Konrad and Clark 1998; Phillips et al. 1996), the absolute age of most glacial deposits remains poorly constrained and assumed ages remain highly questionable.

Recent work in the Coast Ranges on the western side of the San Joaquin Valley (e.g., Lettis 1985) and in unglaciated watersheds of the Sierra Nevada (Meyer and Dalldorf 2004; Meyer and Rosenthal 2008) has shown that a similar sequence of alluvial fan and floodplain deposits is present in these regions too, and that extensive deposits of post-glacial, Holocene-age alluvium occurs throughout the valleys of western California (e.g., Lettis 1982, 1985; Meyer 1996; Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b). Likewise, geological studies in the western Great Basin and northern Mojave Desert have shown that extensive post-glacial deposition also occurred in regions east of the Sierra Nevada (Harvey and Wells 2003; Mahan et al. 2007; McDonald et al.

2003; Miller and Amoroso 2007; Wells et al. 1987; Young 2007), calling into question glacial cycles as a primary mechanism for sediment transport and deposition in central California.

These studies point to the need for a more inclusive model of landscape evolution which decouples erosion, sediment transport, and deposition from glacial cycles, and provides a mechanism that can accommodate landscape transformations that occurred in glaciated and unglaciated watersheds alike, as well as during more recent times when glacial processes were inconsequential. Before developing such a model, the following chapter provides an overview of prevailing notions of landscape evolution, focusing on inherent inconsistencies and contradictory evidence of landform age that has emerged over the last 30 years. We begin by briefly summarizing glacial cycles in the Sierra Nevada, incorporating new evidence for the timing of glacial advance and retreat, and the relationship between those cycles and high and low lake stands recorded in pluvial basins east and west of the Sierra Nevada. The next section examines prevailing models of landscape evolution in central California in relation to glacial cycles, emphasizing research conducted in the San Joaquin Valley and adjacent uplands where many of the formative geological studies occurred. In that section we introduce stratigraphic nomenclature, and point out how the vagaries of relative-age assignments have resulted in ongoing problems of correlation. Lastly we present recent radiocarbon and stratigraphic evidence which effectively demonstrates inaccuracies in the prevailing glacial model of landscape change.

SIERRA NEVADA GLACIAL SEQUENCE

> IT IS EVIDENT THAT RELATIVE-AGE DATING METHODS
> DO NOT HAVE SUFFICIENT PRECISION AND RESOLUTION
> TO PERMIT DEFINITIVE DISTINCTION OF DEPOSITS
> OF THE TAHOE, TENAYA AND TIOGA AGE CLASSES.
> ~ DAVID FULLERTON - GEOLOGIST (1986:165)

More than twenty thousand years ago, the crest of the Sierra Nevada was covered by a massive sheet of glacial ice that extended from the Feather River to the headwaters of the Kaweah River (north to south). Fed by an upper ice cap roughly 50 kilometers (32 miles) wide, continuous lobes of ice moved down the main valleys on both sides of the Sierra, carving out the bedrock and leaving behind a series of terminal moraines that record multiple advances and retreats.

While glaciation of the Sierra Nevada has long been a subject of intense study (Wahrhaftig and Birman 1965), the exact number and age of particular glacial events are still open to debate (Dupre et al. 1991; Kaufman et al. 2004; Fullerton 1986). Six episodes of Pleistocene glaciation are widely recognized, known from oldest to youngest as the McGee, Sherwin, Tahoe, Tenaya, Tioga, and Recess Peaks (Fullerton 1986; Guyton 1998; Hill 2006). Though the ages of the earliest advances are not well defined, the McGee is estimated to be at least 1.5-million years old, the Sherwin approximately 820,000 years old, and the Tahoe bracketed somewhere between about 150,000 and 40,000 years old (Gillespie and Zehfuss 2004:54; Hill 2006:311).

Of primary importance for the current study, two late Pleistocene glacial cycles include the Tenaya and the last major advance known as the Tioga glaciation (Blackwelder 1931; Curry 1969; Fullerton 1986). A radiocarbon date of about 30,000 cal BP from glacial out-washes in the Kings River fan may provide a beginning date for the Tioga advance (Atwater et al. 1986). The end of the Tioga advance is better constrained by several radiocarbon dates from glaciated basins in the Sierra dating less than 16,000 years cal BP (Table 1), consistent with worldwide evidence that glaciers began to recede about 17,400 cal BP (Schaefer et al. 2006). Terminal moraines of the Tioga advance descend to elevations as low as 2,280 meters (7,480 feet) in the Tuolumne River drainage (Huber 2004), but were higher to the south where they did not extend below about an average of 2,500 meters (8,200 feet; Kaufman et al. 2004). However, apart from concurring that the Tioga advance represents the last glacial maximum, there is little agreement among researchers as to the correlation of Tioga-age alluvial and morainal deposits between different drainages and even within single valleys (Fullerton 1986:165).

Table 1. Radiocarbon Dates from Late Pleistocene Glacial Moraines in the Sierra Nevada.

Locality	Stratigraphic position	Material Dated	14C BP	cal BP	Reference
Pine Creek					
Outermost Tioga moraines	Surface	Rock varnish	19,050 ± 420	22,602	Dorn et al. (1987)
Innermost Tioga moraines	Surface	Rock varnish	13,170 ± 200	15,780	-
Osgood Swamp					
In terminal Tioga moraine of Echo Lakes Glacier	Above glacial flour	Bulk sediment	9,900 ± 800	11,448	Adam (1967)
Swamp Lake					
Near upper limit of Tioga ice, North Fork	In glacial flour	Bulk sediment	15,565 ± 820	18,597	Batchelder (1980)
Stanislaus Valley	Above glacial flour	Bulk sediment	14,035 ± 510	-	-
Lake Moran					
In highest Tioga moraines, North Fork	Above glacial flour	Bulk sediment	12,180 ± 260	16,821	Byrne (1988)
Stanislaus Valley	In glacial flour	Mono Craters Ash	14,700-14,800	-	-
Swamp Lake – Yosemite					
Covered by Tioga glaciation, Tuolumne Valley	Above glacier flour	Bulk sediment	13,690 ±340	16,419	Smith and Anderson (1992)
Siesta Lake					
In Tioga moraine	n/a	Bulk sediment	11,280 ±60	13,274	Brunelle and Anderson (2003)
Tioga Pass Pond					
Covered by Tioga glaciation, Sierra crest	Above Mono Craters ash	Bulk sediment	8760 ± 240	9,838	Anderson (1990)
Starkweather Pond					
In Tioga moraines	In sand and silts	Bulk sediment	10,879 ± 150	12,929	Anderson (1990)
Laurel Creek Canyon					
In Tioga/Recess Peak moraine	n/a	Carbonized leaves	13,600 ± 120	16,329	Pohl et al. (1996); Clark et al. (1995)
Barrett Lake					
Area of Hilgard deposits	Above glacial flour	Bulk sediment	11,730 ± 430	13,817	Anderson (1987)
Upper Baboon Lakes					
In Recess Peak moraines	Above glacial flour	Bulk sediment	11,190 ± 70	13,161	Clark and Gillespie (1997)
Central Baboon Lakes					
In Recess Peak moraines	Above glacial flour	Gyttja	10,880 ± 60	12,940	Clark and Gillespie (1997)
Gabbott Meadow Lake					
Covered by Tioga glaciation	In sandy gravel	Bulk sediment	10,500 ± 140	12,461	Mackey and Sullivan (1991)
Bunker Lake					
Covered by Tioga glaciation	Above glacial flour	Charcoal?	11,180 ± 180	13,090	Edlund (1994a)
Grassy Lake					
Covered by Tioga glaciation	Above glacial flour	Bulk sediment	12.360 ± 100	13,380	Edlund (1994b)

Notes: Table modified and expanded from Edlund 1991.

A separate glaciation, the Hilgard, identified by a number of researchers as a late Pleistocene or early Holocene event, has recently been refuted (Clark and Gillespie 1997). Type-moraines for the Hilgard advance are now thought to be recessional features associated with the Tioga glaciation (Birkeland et al. 1976; Clark and Gillespie 1997). Likewise, a re-evaluation of the smaller Recess Peak glaciation, once thought to be a late Holocene phenomenon (Scuderi 1987), places this advance and retreat between 14,200 and 13,100 cal BP, or latest Pleistocene in age (Clark and Gillespie 1997; Gillespie and Zehfuss 2004). Glacial ice generated by the

Recess Peak advance was substantially smaller than the Tioga ice mass, with the average vertical extent being about 3,375 meters (11,070 feet), or 335 meters (1,100 feet) higher than the maximum Tioga advance (Figure 5).

The Little Ice Age or Matthes glaciation, which began between 650 and 620 years ago, is the only truly Holocene-age glacial advance now recognized in the Sierra, lasting about 500 years (c.f., Curry 1969, 1971; Scuderi 1987; Wahrhaftig and Birman 1965; Wood 1975). In comparison, Little Ice Age glaciers only reached to about 3,520 meters (11,550 feet) at their lowest extent, or about 145 meters (475 feet) higher than during the Recess Peak advance (Figure 5). The Matthes and Recess Peak advances were the only glaciations to occur during the span of human occupation. The Sierra Nevada was essentially unglaciated for the intervening 12,000 years or more, including a cooling interval identified as the Younger Dryas. The overall timing of the glacial sequence is summarized below in Table 2.

Table 2. Generalized Sierra Nevada Glacial Sequence.

Glacial or Non-Glacial Period	Description	Age cal BP [a]	Possible Duration (years)
Little Ice Age/Matthes	Glacial cycle (retreat)	650-150 (400-150)	500 (250)
Holocene	Non-glacial warming	11,500-650	10,850
Younger Dryas	Non-glacial cooling	12,800-11,600	1,200
Recess Peak	Glacial cycle (retreat)	14,200-13,100 (13,600-13,100)	1,100 (500)
Tioga III or IV	Glacial cycle (retreat)	25,000-15,000 (19,000-15,000)	10,000 (4000)
Tenaya or Tioga I	Glacial cycle (retreat)	~42,000-28,000 (~36,000-28,000)	14,000 (8000)
Tahoe II	Glacial cycle	~50,000-42,000	8,000
Mono Basin or Tahoe I	Glacial cycle	~80,000-60,000	20,000

Notes: Adapted from Gillespie and Zehfuss (2004:Table 1), Kaufman et al. (2004:Table 2), and Phillips et al. (1996:Table 1); [a] Age estimates of 40,000 years or more based on radiometric data other than radiocarbon are not necessarily calibrated; Parentheses ( ) denote timing and duration of glacial retreats.

GREAT BASIN LAKE AND RIVER SEQUENCE

> As some writers — especially those who are given to solving the mysteries of nature from their closets — have thought that lakes filling true rock basins are a rarity, and have even doubted whether they exist at all, we shall be interested in examining the result of glacial action...
> **~ Israel Russell** — Geologist (1889:281).

At the height of the most recent glacial maximum, about 22,000 years ago, seasonal melt-water and well-charged groundwater systems maintained stream flow in drainages emanating from the glacier-capped mountains. Tributary streams led to large rivers ending in closed basins where a combination of high stream flow and reduced evaporation formed expansive lakes. This is an "ice-age" snapshot of the eastern Sierra Nevada and western Great Basin traditionally understood to be the landscape of the earliest human inhabitants of the region. Since the time of Russell's nineteenth-century expedition to Mono Lake, geologists, geomorphologists, and archaeologists working on the eastern side of the Sierra have exposed and documented a much more complicated interplay of global climate and local environments, resulting in a diverse record of local landform response. The regional mosaic of uplifted mountains, glacier-cut valleys, alluvial bajadas, and broad, once-lacustrine, valley bottoms is a testament to this landscape dynamic.

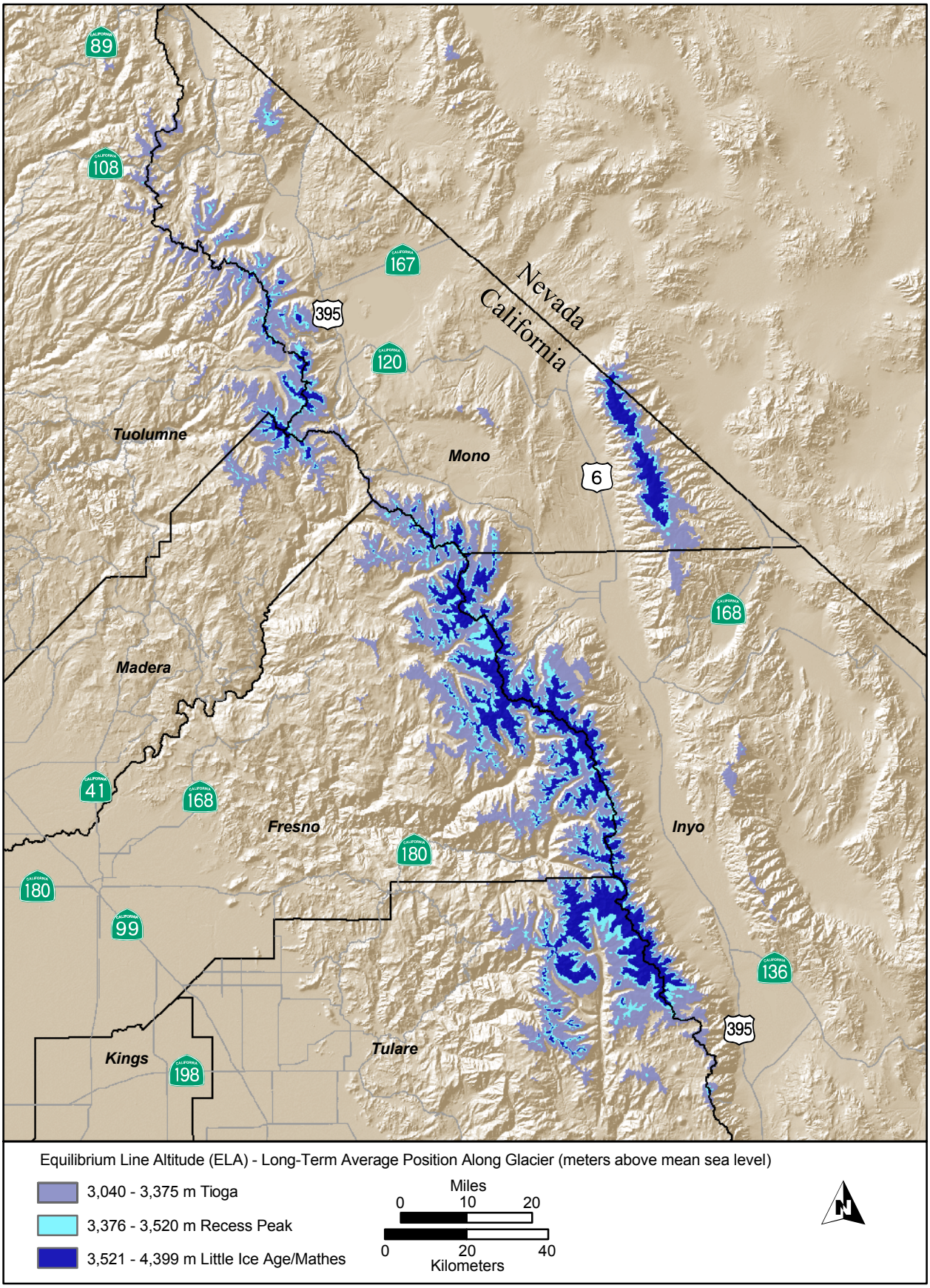


Figure 5. Average Extent of Latest Pleistocene and Holocene Glacial Advances.

Notions of Glaciers and Lakes

The notion of a late Pleistocene, direct "ice age" link between Sierra glaciation and pluvial lake highstands within Mono, Owens, and China Lake (Indian Wells) basins has been decoupled through a greater understanding of post-glacial climate patterns as well as clear documentation of structural relationships between well-dated lake features and generalized glacial landforms (Grayson 1993:111). The steeply uplifted mountain-front of the eastern Sierra preserves a detailed record of the recessional phases of the most recent glacial (Tioga) cycle. Tectonic uplift forces drainages to cut through older mountain-front landforms so that glacial features are preserved; unfortunately, deposition has shifted basinward where recent fans bury lacustrine features on the margins of Owens Valley.

Although numerous creative dating methods have shown promise (Phillips 2008; Phillips et al. 1996), Sierra glacial features tend to be difficult to date with any accuracy beyond some limiting minimum based on exposure of surfaces once beneath the ice mass (for example., see Table 1). Older Tahoe-age features may have been subdued by erosion and soil development and may extend beyond the mountain-front, whereas more recent Tioga-age features are sharp and clearly up-valley from the more expansive Tahoe landforms. Lacustrine records containing stratigraphic isotopic, sedimentologic, or paleontologic (e.g., ostracods) evidence provide robust proxy data for reconstructing glacial and lacustrine sequences (Benson et al. 1996; Benson et al. 1997; Benson et al. 1998; Bradbury and Forester 2002; Phillips 2008; Phillips et al. 1996). While a linkage between glacial and lacustrine processes is assumed by these proxies, the popular notion of a strict synchronicity between glacial or "ice-age" maximum (~22,000 years ago) and pluvial lake highstands (~17,000 years ago) is misguided.

The increased resolution of lacustrine records, along with field observations of multiple recessional landforms, has led researchers to posit multiple Tioga pulses within the broader glacial cycle. The glacial maximum (lowest equilibrium altitude), between about 25,000 and 22,000 years ago, is marked by Tioga II deposits and lake proxies indicating relatively low lake stands, if not complete desiccation (Benson et al. 1997). Glacial systems remained near their maximum extent for several thousand years with only slight recession and expansion fluctuations. Landforms believed to be associated with these post-maximum fluctuations are occasionally labeled as Tioga III features; however, these features are neither geographically extensive nor commonly recognized. Glacial features preserved above the Mono Lake Basin, noted by Russell (1889), reveal that late Tioga glaciers began retreating prior to 16,000 years ago (Bursik and Gillespie 1993:33-34). A significant pause and possible final expansion within the general glacial retreat is marked by well-documented Tioga IV deposits dating to about 16,000 years ago. A general regression in the depth and extent of regional lake systems corresponds to Tioga IV. The final Tioga recession, after the Tioga IV pause, was followed by a rise of Lake Russell (pluvial Mono Lake) to its late Pleistocene highstand (Benson et al. 1998; Bursik and Gillespie 1993). A similar pattern is documented in glacial landforms and lacustrine records elsewhere along the eastern Sierra Nevada.

Tioga fluctuations in the Sierra show equivalents in the White Mountains, the most southerly late Pleistocene glaciated range in the Great Basin (Grayson 1993:108). The early and late Middle Creek glaciations in the eastern cirques of the White Mountains are Tioga-age equivalents; the late Middle Creek ended about 16,000 years ago. Pluvial highstands throughout the Owens River system, from Owens Lake through Lake Searles, clearly post-date Tioga glacial recession.

Notions of the Owens River System

> REALITY IS THE SQUIGGLY STUFF.
> ~ RON KING - ARCHAEOLOGIST

During the Pleistocene, the Owens River system drained almost the entire eastern Sierra Front, from Mono Lake to China Lake, and extended to Panamint Valley and Death Valley of the Mojave Desert (Figure 6). A drainage system of this extent was rare, however. By the late Pleistocene, the paleo-Owens River only connected the intermediate basins of Owens, China, Searles, and Panamint lakes (Smith and Street-Perrott 1983). Today the river terminates at the nearly dry lakebed of Owens Lake.

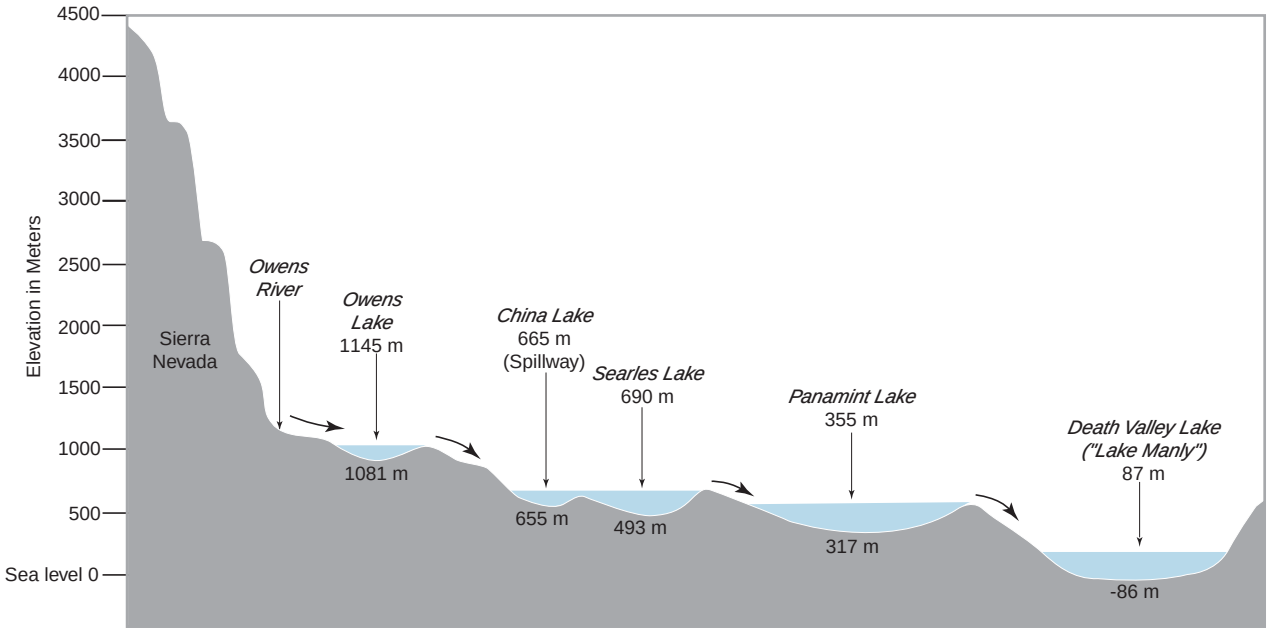


Figure 6. Paleoconnections along the Owens River Drainage System.

Smith and Street-Perrott (1983) and Benson et al. (1990) provide discussions of pluvial lake chronologies along the Owens River system by focusing on the stratigraphy of pluvial Lake Searles. When Owens Lake reached its outlet it overflowed to Rose Valley which, in turn, overflowed to Indian Wells Valley and China Lake. The modern elevation of the Owens Lake sill, beneath the Haiwee reservoirs, is 1,145 meters (3,756 feet). When China Lake reached a depth of approximately ten meters (33 feet), at an elevation of 665 meters (2,182 feet), it overflowed to the deep basin of Searles Valley. Searles Lake filled considerably, to a depth of 172 meters (564 feet), before coalescing with the waters of China Lake to form pluvial Lake Searles. The lake continued to rise until reaching its sill with Panamint Valley where it would have been almost 200 meters deep (656 feet), maintaining a surface elevation of 690 meters (2,264 feet).

This expansive network of rivers and lakes are a key for understanding the structure of late Pleistocene and early Holocene landscape change in the western Great Basin; however, the chronological resolution of post-glacial lake expansions and river connection remains elusive. Early studies focused on Searles Basin as pivotal for understanding the system's history (Smith 1987; Smith and Street-Perrott 1983). The Searles Basin remains important because it retains a deep stratigraphic record and, because it lies in the rain shadow of the Sierra Nevada, local surface runoff and internal input had only a minor influence on lake fluctuations. Thus, the Searles record provides an excellent proxy of the hydrological history of the preceding (up-drainage) basins. Moreover, rising lake levels in Lake Searles provides direct information on the depth of China Lake. In turn, China Lake must have received input from the Owens River to overflow into Searles Basin.

Lake Searles experienced dramatic fluctuations during the late Pleistocene between about 35,000 and 17,500 cal BP (Benson et al. 1990; Smith and Street-Perrott 1983). The pluvial lake, like other regional lakes, experienced a dramatic recession between 17,500 and 15,500 years ago. The lake then fluctuated at moderate levels until about 12,850 years ago, with a distinct increase between 12,850 and 12,200 cal BP. After this final transgression, the lake receded and remained very low or dry with minor oscillation throughout the Holocene (Benson et al. 1990). A radiocarbon date of 15,500 cal BP on rock varnish from an outflow terrace between China and Searles basins indicates the terrace has been exposed and the lakes did not coalesce since at least that time (Benson et al. 1990). Smith reported Holocene lakes in both China (Smith and Davis 1978) and Searles (Smith and Street-Perrott 1983) basins, but these have not been well-documented. While Holocene lake stands, derived from intra-basin drainage, likely occurred in these separate basins, geomorphic features associated with low-level, brief transgressions have not been discovered.

Warren (2008; see also Rosenthal et al. 2001) has shown that Clovis projectile points—the earliest accepted evidence for human occupation in the region—are clustered at elevations below the outflow sill of China Lake Basin. He has interpreted this spatial patterning as indicative of the "Clovis drought" (after Haynes 1991) which immediately predates the brief return to pluvial conditions marking the late Younger-Dryas. During the dry interval of the Clovis drought, the Owens River was confined to Owens Valley. Just prior to 12,200 years ago, fluctuations of the global climatic Younger-Dryas event (12,800-11,500 cal BP) seemingly produced a series of brief increases in Sierra runoff (Benson et al. 1997), probably accompanied by reduced evaporation (Grayson 1993), and forced a return of Lake Owens and extension of the Owens River system through Rose Valley, China Lake, and into Searles Lake. Numerous Clovis points from the Coso Junction site, situated along the former course of the Owens River in Rose Valley (Borden 1971), also support the idea that river flow resumed during Clovis times.

Owens Lake Basin, the "gatekeeper" of the hydrological system, has received copious study via a series of lake cores (Benson 2004; Benson et al. 1996; Benson et al. 1997; Phillips 2008; Phillips et al. 1996) and descriptive and chronological analysis of littoral environments and neotectonics (Bacon et al. 2006; Orme and Orme 2008). Retreating from an extended period of highstands, it is clear that Owens Lake experienced significant desiccation during a pause in Tioga glaciation that formed the Tioga IV terminal moraines. This drying event is evident as prominent desiccation features and frosted quartz grains in the record of core OL84 between 18,300 and 15,800 years ago. Following this early desiccation, isotope data (delta-18O) show four wet intervals (W1-4) when basin outflow via the lower Owens River (to Rose Valley and China Lake) reduced the level of isotope saturation, indicated by lower delta-18O measures. The W2 interval of Benson et al. (1997) shows two sub-peaks and may have lasted almost 1,500 years. Although Benson et al. (1997) do not specifically state that the late wet events (W3 or W4) forced Owens Lake to its sill, the significant reduction in isotope saturation

along with the 500-year duration of each event suggests that outflow was likely (cf. Bacon et al. 2006). The wet periods are bracketed by very dry intervals with relatively high isotope saturation. The first two dry intervals (D1 and D2) resulted in relatively brief lake regressions. The third (D3), at the beginning of the Younger-Dryas, was significant enough to allow formation of a sub-aerial weathering profile on the Owens lakebed. The final dry period (D4) marks a significant transition to generally dry conditions, although the record shows fluctuating delta-18O levels, with a significant decrease at about 10,000 years ago, lasting into the Holocene.

Bacon et al. (2006) present a very different picture of Owens Lake Basin. Their review of dated sub-aerial, littoral, and sub-aqueous features and fauna, either collected by the authors or obtained from previous studies, including the lake core studies, limits the potential for basin outflow. Their interpretation of the Pleistocene-Holocene transition retains significant hydrological fluctuation, but the authors posit that Owens Lake did not have outflow (i.e., it remained a closed basin) after a final highstand between 16,000 and 15,000 years ago. Their record also indicates that the amplitude and duration of early Holocene lakestands was much greater than indicated by the upper sections of well-studied cores.

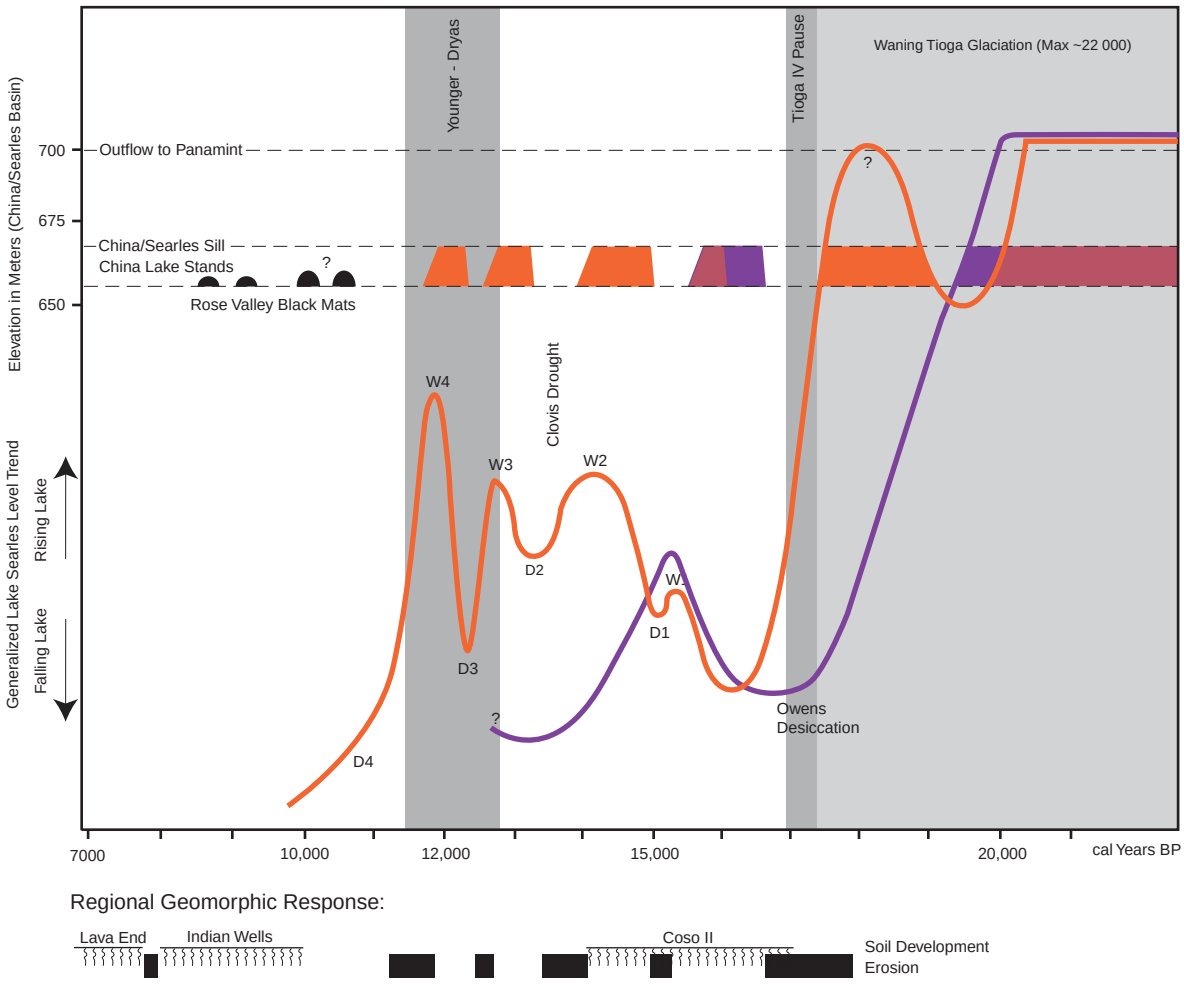
Figure 7 presents an updated lake level curve focusing on the interval between circa 21,500 and 10,000 years ago. The simplified curve is derived from lake level and isotope information from Owens Lake (Bacon et al. 2006; Benson and Bischoff 1993; Benson et al. 1997; Orme and Orme 2008), China Lake (Warren 2000; Young et al. 2001), Searles Lake (Benson et al. 1990), and on-going field studies in Rose Valley. Although significant progress has been made (Bacon et al. 2006; Benson 2004; Orme and Orme 2008; Phillips 2008), the figure illustrates that our understanding of lake levels in Searles Basin, and throughout the system, is incomplete.

As a proxy for the Sierra front landscape conditions, the record provides important information about the Pleistocene/Holocene transition. Water levels in the Searles Basin are dependent on input from China Lake and the Owens River system. Because the overflow sill between China and Searles basin is so low (less than 10 meters [33 feet] above the floor of Indian Wells Valley), and the Searles Basin occupies a much lower-elevation valley, changes in hydrologic inflow and outflow have a greater effect in the basin of China Lake than at Searles. If there is flow in the lower Owens River, via Rose Valley, due to Lake Owens overflow and Sierra input, China Lake fills relatively quickly before overflowing to Searles. Therefore, increasing lake level in the Searles Basin requires outflow from the upstream basin, which in turn produces a relatively stable level in China Lake. If the lake in Searles Basin is receding, we can assume that input from the Owens River system has ceased and China Lake has dropped below its sill. Once the river is cut off, due to the shallowness of China Lake Basin, it is likely that lake desiccation would significantly out-pace that at Searles.

The interpretations of Bacon et al. (2006) do not align with downstream datasets from the Searles Basin (Phillips 2008; Orme and Orme 2008), though they do not necessarily contradict information from Owens Lake cores (Benson et al. 1997). Young (n.d.) has documented early Holocene wet intervals in Rose Valley, where organic black mats on lacustrine deposits near sill levels suggest external water sources. Orme and Orme (2008) have indicated that the elevation of Owens sill has changed since formation of highstand shorelines and find evidence of tectonic uplift along the active margin of the Coso Range. Although something of a "ghost in the machine," this might be a useful explanation for discrepancies in the lacustrine records (Phillips 2008) of the tectonically active trough that forms the course of the Owens River. The structure of the Owens River is not only significant for understanding prehistoric resource distribution along the Sierra front and into the California Great Basin; it is also a useful proxy for reconstructing the character of depositional and erosional regimes within and adjacent to the drainage system.

San Joaquin Valley Lake Records

Tulare Lake and Buena Vista Lake were historically the largest bodies of surface water in the San Joaquin Valley. Before the lakes were drained and reclaimed for agriculture in the early nineteenth-century, the Buena Vista basin captured runoff supplied by the Kern River and all other streams that drain the southern end of the valley. Both lakes were subject to relatively rapid fluctuations in their overall water levels as they regularly responded to annual runoff and periodic floods or droughts (Grunsky 1898a, 1898b; Mendenhall et al. 1916), and both were partially or completely enclosed ("dammed") by large alluvial fans originating near the base of the



Owens to Searles Lake Proxies: Upward trends (right-to-left) show Owens sill overflow and river contribution to Lake China, downward trends show Lake Owens regression and desiccation of lower Owens River; provides general transgression/regression lake level direction for pluvial Lake Searles.

from Benson et al. (1997) with Wet (W)/Dry (D) cycles based on isotopic signatures.

from Bacon et al. (2003) based on synthesis of regional radiocarbon database.

Figure 7. Owens to China to Searles Proxy Lake Indicators.

Sierra foothills to the east. At times of major flooding, water flowed northward from Buena Vista Lake through a convoluted network of shallow channels, known as Buttonwillow Slough, on its way to Tulare Lake. Tulare Lake was the primary hydrologic basin for all runoff from the southern San Joaquin Valley, including all drainages from the Kings River to the Kern River that carried glacial water from the upper Sierra Nevada (see Figure 2). As such, Tulare Lake has been a settling basin for alluvium transported by these drainages, both east and west of the valley's southern axis.

Buena Vista Basin

A basic sketch of Buena Vista Basin's depositional history can be pieced together based on the age and context of several radiocarbon dates obtained by various geologic and archaeological studies from sediments underlying the lakebed (Croft 1968, 1972; Fredrickson and Grossman 1977; Lofgren 1975; Manning 1968; Marchand and Allwardt 1981). These dates indicate that at least 18 meters (59 feet) of sediment were deposited in the basin since the Tenaya glacial advance about 36,370 cal BP (W-2336), and that sand deposits appear to record Tioga-related outwash over the interval from about 20,290 cal BP (W-1504) to 15,820 cal BP (W-1652). Extensive deposition during this time is consistent with a date of 16,845 cal BP (W-1650) obtained on wood buried more than 12 meters (39 feet) below the surface of the Kern River fan near Bakersfield (Marchand and Allwardt 1981).

In parts of Buena Vista Basin, Croft (1968, 1972) identified a thick layer of fine-grained lacustrine or marsh deposits (i.e., "A clay") that appears to mark the Pleistocene to Holocene boundary. Wood from the upper part of the "A clay" yielded a date of 10,175 cal BP (W-1505), indicating that it and the overlying 11.6 meters (38.1 feet) of sediment are Holocene in age. An early Holocene date of 9516 cal BP (Beta-169380) was obtained on a buried soil located along Broad Creek to the west of the basin (Young 2003), and freshwater shells associated with a buried cultural deposit at KER-116 between 2.6 and 4.5 meters (8.5-14.8 feet) below surface on the southwestern edge of Buena Vista Lake produced dates of 8380 and 7740 cal BP (LJ-1356-57, and I-1928, respectively; Fredrickson and Grossman 1977). Charcoal from a buried colluvial deposit along the southern side of the lake generated a middle Holocene date of 4810 cal BP (LJ-314). This suggests that debris flows occasionally made their way to the valley floor from the San Emigdio Mountains and may be inter-fingered with fluvial deposits (Fredrickson and Grossman 1977; Hubbs et al. 1962). Dates of 1300 to 1100 cal BP on archeological materials from surface sites KER-39 and KER-116 located on the western margin of the basin suggest a lake was also present during the latest Holocene (Hartzell 1992). As such, the Buena Vista Basin contains a reasonably complete depositional record from the latest Pleistocene through much of the Holocene. The history of lake fluctuations in Buena Vista Basin, however, has yet to be evaluated.

Tulare Lake

To the north of Buena Vista Basin, lacustrine deposits of Tioga-age (Chatom silt) were identified in the Tulare Lake Basin, but evidence for the two proceeding glacial cycles (Tahoe and Tenaya) has not yet been found (Atwater et al. 1986; Davis 1999a). Atwater et al. (1986) contend that glaciation produced large outwash deposits on the Kings River fan, which created a dam that blocked the usual outlet of the lake to the north. This model suggests the "fan dam" was deposited beginning about 28,000 cal BP during the Tioga glacial advance (i.e., coeval with Chatom silt), and that this lead to an increase in the overall size and depth of the lake basin. Once the fan dam was in place, it would have presumably increased the basin's overall ability to capture and store sediments for long periods. If these changes grant Tulare Lake the unusual potential to record "the timing, magnitude, and climatic context of Sierra Nevada glaciation" as claimed by Atwater et al. (1986:109), then its depositional record should be even more complete than that of Buena Vista Lake. Yet oddly, deposits that might correlate with the Buena Vista "A clay" of Croft (1968, 1972) are not recognized in Tulare Lake.

A subsequent study by Davis (1999a) indicates that the lake's depositional center records a "gap in sedimentation" for the interval from about 21,800 to 11,800 cal BP, a period which fully encompasses the Tioga glacial maximum and retreat, and the entire Recess Peak glacial cycle. Davis interpreted the gap as an erosional contact (not a lake low stand) created when "the alluvial dam impounding the lake was breached by a through-flowing Kern River" (Davis 1999a:255). Though no further explanation is given, this scenario implies a breach

may have occurred even before the fan dam was completely built, and is thus at odds with the Atwater et al. (1986) depositional sequence which suggests continued dam building until about 18,000 cal BP.

Because it is highly unlikely that erosion could have ever been efficient or pervasive enough to remove all depositional evidence of a particular glacial or interglacial period within such a broad and shallow basin, it is puzzling to imagine how Tulare Lake could contain a record of some glaciations and not others, especially when the Kings River, Buena Vista Basin, and all other glaciated and unglaciated western Sierra Nevada drainages contain deposits coeval with the last three or four major glacial cycles (see Table 2). Furthermore, the Tulare Lake record indicates deposition resumed around 11,800 cal BP within the basin, and was relatively continuous through the rest of the Holocene (Atwater et al. 1986; Davis 1999a; Negrini et al. 2006). Thus, not only were these lacustrine deposits laid down during the decidedly non-glacial conditions that typified the Holocene, but they are twice as thick as the Tioga-age Chatom silt (about 6 versus 3 meters [19 versus 10 feet] respectively).

Latest Pleistocene and Holocene lake level histories for Tulare Basin have previously been inferred by both Davis (1999a) and Negrini et al. (2006). Based on the nature of sediment deposition and changing abundances and types of pelagic algae and littoral pollen, Davis (1999a) described periods of high and low lake levels spanning the last 30,000 years. This work was based on core samples retrieved from the lowest portion of Tulare Basin (i.e., the basin's depocenter), and provides information on whether relatively deep or shallow water conditions occurred at the coring site, interpreted as either high or low lake stands (Davis 1999a).

To better understand changes in the size of Tulare Lake during the late Pleistocene and Holocene, Negrini and Wigand (2003 and Negrini et al. 2006) studied sedimentary records from below a prominent wave-cut terrace along the southwestern edge of the basin, which they termed the Rambla shoreline. Negrini's and Weigand's study added important detail on the sedimentary record of the basin margin and areal extent of Tulare Lake at different times in the past. However, they relied heavily on Davis' (1999a) findings to infer the elevation of high lake stands, but provided no constraining dates which demonstrate the actual extent of these transgressions. For example, Negrini's inferred lake level curve provides no direct evidence for high stands above the 64 meter elevation (210 feet), which represents the modern sill level. Nevertheless, he infers high stands well above that level during the early Holocene (i.e., ca. 9000 and 8500 to 7500 cal BP), middle Holocene (ca. 5800 to 5500 cal BP) and during the latest Holocene (after 500 cal BP).

To provide a more complete picture of the latest Pleistocene and Holocene history of Tulare Lake, we plotted the distribution of all radiocarbon dates thus far retrieved from the basin, distinguishing between those that were deposited sub-aqueously, at or near lake level, or in terrestrial contexts above lake level (Figure 8; Figure 9). The latter dates are the most significant as they provide constraints on the maximum elevation of the lake at various times in the past. The terrestrial dates derive from various contexts (Appendix A), the majority of which are buried soils and archaeological deposits. Dates inferred to be at or near the maximum elevation of the lake derive mainly from marsh or beach deposits, whereas those from below lake level originate from lake clays and silts (e.g., the Blakely Canal Silt).

The current data set suggests that Tulare Lake reached its highest elevations only recently, apparently within the last 1,000 years. Early Holocene shorelines appear to have remained around the 63-meter (207-foot) elevation, about one meter (three feet) below the modern sill elevation, while those associated with the middle Holocene and beginning of the late Holocene appear to have been even lower, between about 58 and 56 meters (190 and 184 feet) in elevation about 2000 cal BP, well below the lowest levels recorded historically (Grunsky 1898b). After 2,000 years ago, the lake rose significantly, attaining its highest levels perhaps as recently as the historic period, although the highest transgressions were probably short lived (Grunsky 1898b).

That the lake stood well below the 63-meter (207 feet) level during most of the Holocene is clearly evident from radiocarbon dates obtained from the Los Gatos Creek fan. Along with the Kings River fan, alluvial deposits originating from Los Gatos Creek create the primary impoundment for Tulare Lake basin. Four radiocarbon dates from buried soils at two separate localities on the distal Los Gatos Creek fan range between 13,835 and 13,495 cal BP (OS-72701, OS-72702, Beta-137204, and Beta-255484) and range in elevation between 61.9 and 63.0 meters (203.1 and 206.6 feet). In the Omaha Canal, these late Pleistocene buried soils are immediately capped by lake deposits containing *Anadonta* shell in growth position. A sample of one of these shells

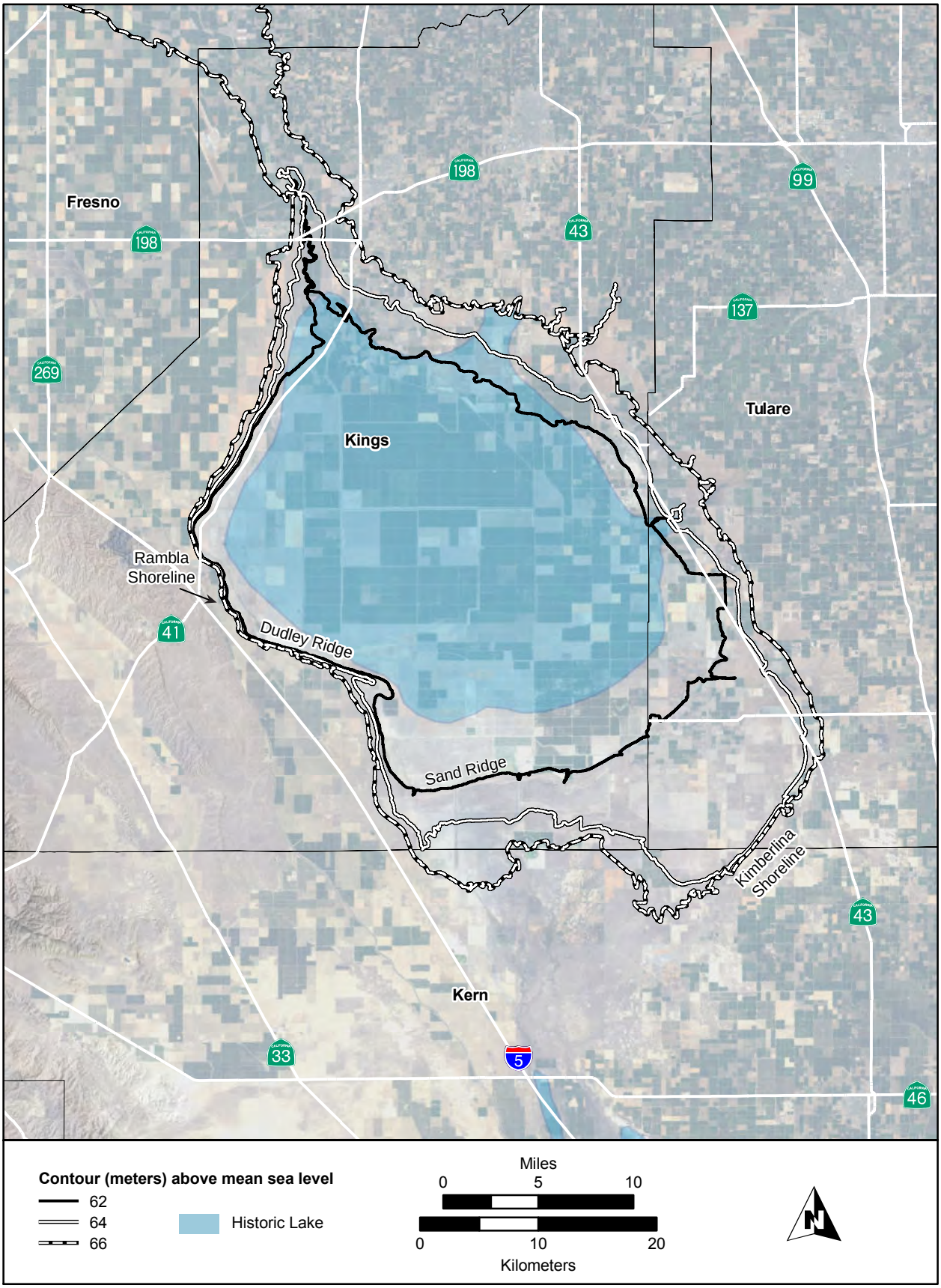


Figure 8. Tulare Lake Highstands and Inferred Shorelines.

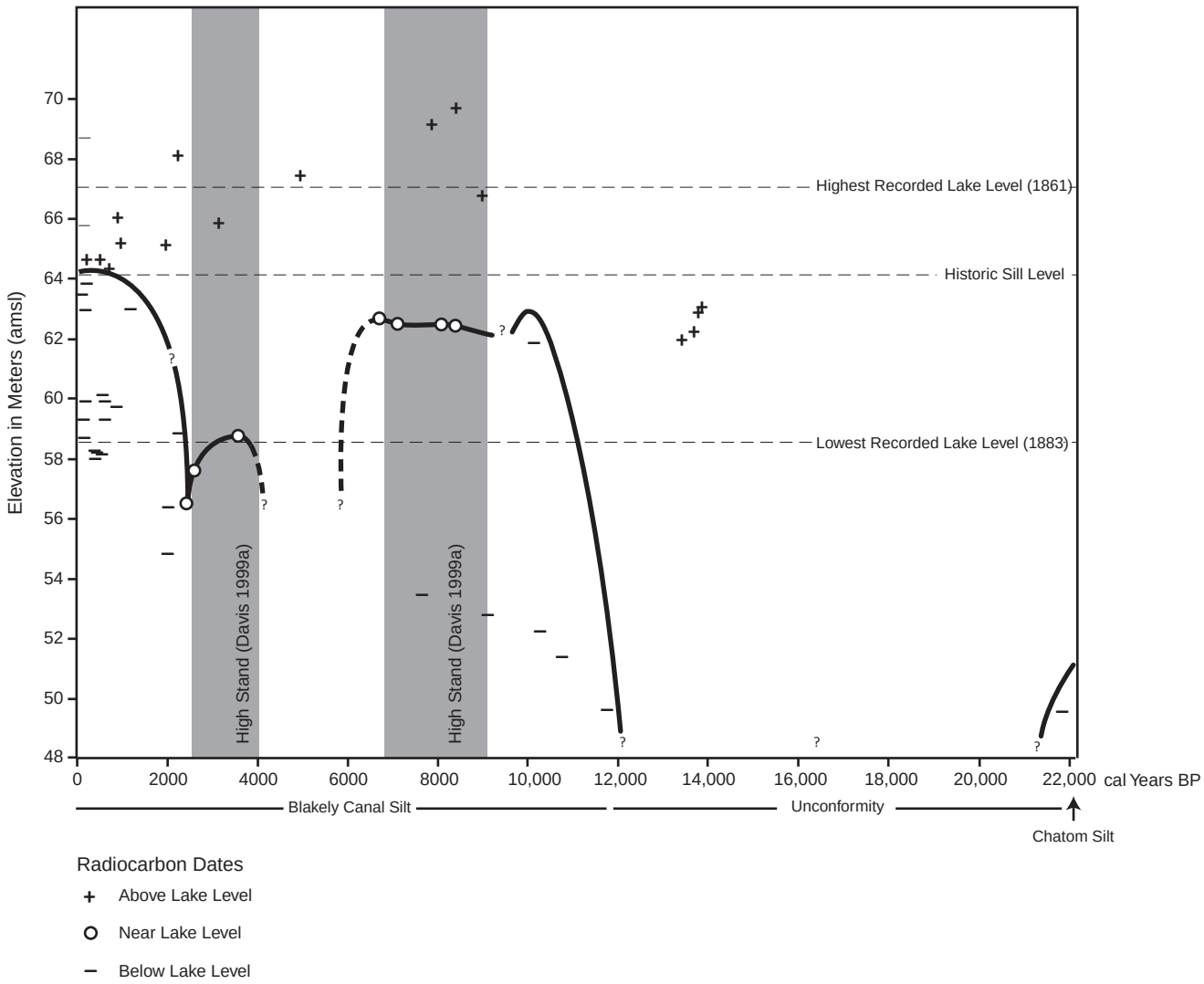


Figure 9. Lake Level History of Tulare Basin.

returned a radiocarbon date of 175 cal BP (OS-73445), indicating lake deposits in this locality are very recent in age. The absence of intervening depositional strata demonstrates that the lake did not attain a significant high stand above 63-meters (207 feet) during the latest Pleistocene and throughout most of the Holocene.

Based on our recent mapping (see Chapter 4), it appears that late Holocene deposition on the Kings River fan likely raised the sill-level of the basin about one meter (three feet) beginning about 2000 cal BP, causing the elevation of the shoreline to rise during recent times. This implies that lake level histories in the basin were controlled as much by changes in the sill level as water in-put related to climatic fluctuations (cf, Davis 1999a). In fact, the absence of a depositional record in the basin from about 21,000 to 11,500 cal BP (Davis 1999a) might suggest that the Kings River was flowing northward at that time, rather than spilling southward into Tulare Basin. A northward-flowing buried channel of the Kings River may be evidence of this hydrological shift (Weissmann et al. 2002; Weissmann et al. 2005).

To better understand the spatial extent of Tulare Lake at different times in the past, we plotted the elevation of the modern sill (64.3 meters [211 feet]) as well as two hypothesized shorelines using maximum (67.05 meters [219.98 feet]) and minimum (58.5 meters [191.9 feet]) elevations of the lake reported historically by Grunsky (1898b). What becomes evident from this exercise is that there are at least two previous shorelines that have geomorphic expressions within the basin. The wave-cut Rambla shoreline, defined by Negrini (Negrini and Wigand 2003; Negrini et al. 2006), was almost certainly the location of the lake margin throughout the latest Pleistocene and Holocene due to the steepness of the alluvial piedmont along the western edge of the basin. The 62-meter (203 feet) shoreline at that location would have also extended along Dudley Ridge, and linked up with the same elevations along Sand Ridge, another prominent shoreline feature which wraps the southern end of the basin (see Figure 8).

Because the maximum elevations of both Dudley Ridge and Sand Ridge lie above the height of the modern sill at 64 meters (210 feet), and late Pleistocene fossils dated more than 17,000 years old (Fenenga 1991; Garber 1989; West et al. 1991) have been found at Dudley Ridge, it seems that these are not recent landscape features and could not have been deposited sub-aqueously during the late Pleistocene or Holocene (c.f., Negrini et al. 2006). Rather these linear features either represent beach berms formed by wave action, or were originally deposited sub-aqueously earlier in the Pleistocene (Chatom silt times?) when depositional records are absent in the central part of the basin. In addition to the shoreline represented by Dudley and Sand ridges, a second probable shoreline is evident further south in the basin, representing an even higher lake stand. This shoreline runs parallel to Sand Ridge, about eight miles to the southeast, at the 64- and 66-meter (210- and 217 feet) contours and is associated with a linear sand deposit mapped in the Kimberlina Series. This landscape feature lies precisely at the level of the highest lake recorded historically (Grunsky 1898b) and further indicates that there is a much greater separation in shoreline features along the low-gradient southeastern edge of the basin than is present along the Rambla shoreline to the west.

Future research on lake-level histories in the basin should focus on those regions beyond Sand Ridge, where the spatial separation of shorelines is the greatest. If our analysis is correct, lake deposits in that part of the basin should date well before 13,000 cal BP or after 2,000 cal BP. Furthermore, unlike pluvial lakes in the Great Basin, the history of Tulare Lake appears to have been strongly controlled by changes in the basins sill elevation, rather than merely recording changes in precipitation and run-off.

Conclusions

Pluvial Lake histories east and west of the Sierra Nevada provide an important record of water run-off and sediment transport from the adjacent slopes of the Sierra Nevada. Contrary to long-held notions, recent studies of basins east of the Sierra Nevada demonstrate that lake levels were generally lowest during the last glacial maximum, now thought to have occurred around 22,000 years ago, reaching their highest stands between about 18,000 and 17,000 years ago. Pluvial lake systems appear to have remained linked up to about 16,000 years ago, after which lake levels fluctuated regularly, but outflow sills appear to have rarely been reached, if at all, during the latest Pleistocene and early Holocene. Differences of opinion remain, however, and estimates of the size and duration of latest Pleistocene lake stands east of the Sierra continue to be elusive. To the extent that the glacial model of landscape evolution is correct, it is likely that sediment transport and deposition was highest when water

run-off was greatest—not at the glacial maximum, but during the recessional phase of the Tioga glaciation. Pluvial lakes west of the Sierra Nevada, have not been studied to the same extent as those to the east, but current information suggests Buena Vista Basin retains a depositional record of end-Pleistocene run-off, while the much larger Tulare Basin is missing a depositional record for this interval. In the latter case, this may be a function of local geomorphology, representing a time when the Kings River flowed northward away from Tulare Basin. If this is true, Tulare Lake was not receiving significant water input at a time when pluvial lakes east of the Sierra were reaching their post-glacial high stands. It is also clear from modern research that no significant glacial cycles occurred after the Recess Peak advance in the terminal Pleistocene (except for the relatively minor Little Ice-Age advance), precluding these processes as a mechanism of landscape evolution during the Holocene.

THE GLACIAL MODEL AND SAN JOAQUIN VALLEY DEPOSITIONAL SEQUENCE

> THE ESSENTIAL FACT AS TO THE PRESENT VALLEY SURFACE IS THAT IT IS A DIRECT RESULT OF STREAM ACTION. IT HAS EVERYWHERE BEEN BUILT UP BY DEPOSITION FROM THE STREAMS OR FROM THE FLUCTUATING LAKES THAT ARE THEMSELVES DEPENDENT UPON THE STREAMS; AND IT IS FORMED OF MATERIALS BROUGHT BY THE STREAMS FROM THE MOUNTAINOUS PORTIONS OF THEIR DRAINAGE BASINS WHERE THEY ARE ERODING INSTEAD OF DEPOSITING.
> ~ MENDENHALL ET AL. (1916:21)

Arkley (1954, 1962) was among the first to study late Quaternary alluvial sequences in the eastern San Joaquin Valley and to relate these to cycles of glaciation. Based on work in Merced and Stanislaus counties, Davis and Hall (1959) identified two main Pleistocene-age geological units, known as the Riverbank (middle Pleistocene) and Modesto (late Pleistocene) formations. While younger Holocene-age deposits were recognized in the valley, these were often grouped and identified simply as "recent alluvium" or "basin deposits" without any further age divisions. In the 1970s, the term "post-Modesto formation" was introduced and applied to Holocene-age deposits by Marchand (1977a) who, along with Allwardt, identified, described, and mapped four sub-Holocene units in the northeastern part of the San Joaquin Valley, including parts of the current Study Area (Marchand and Allwardt 1981). This stratigraphic terminology was quickly adopted by other researchers and applied to similar alluvial sequences elsewhere in Central California (Table 3), including most alluvial landforms in the San Joaquin Valley, Sacramento-San Joaquin Delta region, lower Sacramento Valley, and even parts of the northern Transverse Ranges and western Mojave Desert.

Riverbank Formation

Where exposed at the surface, Riverbank deposits represent alluvial fans and floodplains that have been heavily dissected and truncated by erosion. These landforms have reddish-colored soils with well-developed argillic (Bt) horizons. Fossil mammal remains and radiometric dating of the Rockland Ash, which lies below the Riverbank Formation in the Sacramento Valley, place the age of this formation between about 450,000 and 100,000 years old (Hansen and Begg 1970). Upper and lower sub-units (referred to as "members") of the Riverbank Formation in the San Joaquin Valley (Marchand and Allwardt 1981) are correlated with upper and middle Riverbank units (respectively) in the Sacramento Valley (Blake et al. 1992; Busacca et al. 1989; Helley and Harwood 1985). Deposits of the upper Riverbank Formation are inset and topographically below those of the lower Riverbank formation. The older sub-unit is also distinguished by surfaces that are more rolling and dissected than the younger. In the foothills of the Sierra Nevada, Harden and Marchand (1980) correlate the middle Riverbank with Bowie Flat deposits, and the upper Riverbank with Oroville deposits based on geomorphic position and similar weathering profiles; Bowie Flat deposits are found at only a few locations in the foothills, while the younger Oroville deposits are more extensive (Biggar et al. 1978:87).

Table 3. Previous Correlations of Glacial and Stratigraphic Sequences in Central California and Adjacent Areas.

Time Period (years cal BP)	Glacial Stage (age cal BP)	Sacramento Valley-American River (glaciated)[a]	Northeast San Joaquin Valley (glaciated)	West-Central Sierra Foothills (unglaciated)	Chowchilla River Fan (unglaciated)	San Joaquin River Fan (glaciated)	San Joaquin and Kings River Fans (glaciated)	Kings River Fan (glaciated)	Tulare Lake and Kings River Fan	West-Central San Joaquin Valley (unglaciated)	North Transverse Ranges and South San Joaquin Valley	Antelope Valley in Western Mojave Desert (unglaciated)
		Shlemon (1967, 1972)	Marchand and Allwardt (1981)	Harden and Marchand (1979)	Helley (1966)	Janda (1965) Janda and Croft (1967)	Huntington (1980)	Weissmann et al. (2002)	Atwater et al. (1986); Davis (1999)	Lettis (1982, 1985, 1988)	Hall (1984)	Ponti (1985); Ponti et al. (1981)
Modern (<0 or 1950 AD)	na	Not recognized	Post-Modesto IV	Keystone deposits	Recent channel and sidestream alluvium	Recent alluvium (undivided)	Holocene 4? and Basin Deposits	Not recognized	Not recognized	Not recognized	Q8	Q8 - Post-Palmdale II (<70 cal BP)
Historic-Era (150-0)	na	Not recognized	Post-Modesto III	Keystone deposits	Recent channel and sidestream alluvium	Recent alluvium (undivided)	Holocene 4? and Basin Deposits	Not recognized	Not recognized	Not recognized	Q7	Q8 - Post-Palmdale II (<70 cal BP)
Latest Holocene (2000-150)	Little Ice Age (650-150)	Holocene (undivided)	Post-Modesto II	Keystone deposits	Recent channel and sidestream alluvium	Recent alluvium (undivided)	Holocene 3? and Basin Deposits	Holocene (undivided)	Blakely Canal silt (undivided and uncorrelated)	Patterson and Dos Palos Alluvium (unvided and uncorrelated)	Q6	Q7 - Palmdale I
Late Holocene (4000-2000)	Minor neo-glaciation?	Holocene (undivided)	Post-Modesto II	Keystone deposits	Recent channel and sidestream alluvium	Recent alluvium (undivided)	Holocene 3? and Basin Deposits	Holocene (undivided)	Blakely Canal silt (undivided)	Patterson and Dos Palos Alluvium (undivided)	Q6 (<2500 cal BP)	Q7 - Palmdale I
Middle Holocene (7000-4000)	na	Holocene (undivided)	No deposit or correlate	No deposit or correlate	N/A or Upper Modesto?	Recent alluvium (undivided)	Holocene 2? and Basin Deposits	Holocene (undivided)	Blakely Canal silt (undivided)	Patterson and Dos Palos Alluvium (undivided)	No deposit or correlate	No deposit or correlate
Early Holocene (11,500-7000)	na	Holocene (undivided)	Post-Modesto I; Upper Modesto	Sonora deposits	N/A or Upper Modesto?	Upper Modesto? (undivided)	Holocene 1 and Modesto 5w? (aeolian sands)	Holocene (undivided)	Blakely Canal silt (<11,800)	Upper San Luis Ranch Alluvium (>10,000 cal BP)	Q4 and Q5 (>7000 cal BP)	Q6 - Upper Palmdale (>10,000 cal BP)
Latest Pleistocene (15,000-11,500)	Recess Peak (14,200-13,100)	Upper Modesto (uncorrelated)	Upper Modesto (uncorrelated)	Sonora deposits	Upper Modesto (undivided and uncorrelated)	Upper Modesto (uncorrelated)	Modesto 5 and 5w	Modesto (undivided and uncorrelated)	No deposit or correlate	Upper San Luis Ranch Alluvium (uncorrelated)	Q4 and Q5 (undivided and uncorrelated)	Q6 - Upper Palmdale (uncorrelated)
Late Pleistocene (25,000-15,000)	Tioga I-IV (25,000-15,000)	Upper Modesto	Upper Modesto	Sonora deposits	Upper Modesto	Upper Modesto	Modesto 3 and 4	Modesto (undivided)	Upper Modesto - Chatom silt (28-21.8 ka)	Upper San Luis Ranch Alluvium	Q4 and Q5 (undivided and uncorrelated)	Q6 - Upper Palmdale (uncorrelated)
Late Pleistocene (~42,000-28,000)	Tenaya or Tahoe II (~42,000-28,000)	Lower Modesto? (uncorrelated)	Upper Modesto	Wyandotte deposits	Dune Sand (pre-Tioga?)	Upper Modesto	Modesto 3 (Kings River only)	Modesto (undivided)	No deposit or correlate	Lower San Luis Ranch Alluvium	Q3? (uncorrelated)	Q6 - Lower Palmdale (undivided and uncorrelated)
Late Pleistocene (~50,000-42,000)	Tahoe I and/or II (~50,000-42,000)	Lower Modesto	Lower Modesto	Wyandotte deposits?	Lower Modesto	Lower Modesto	Modesto 1 and 2	Modesto (undivided)	No deposit or correlate	Lower San Luis Ranch Alluvium	Q3	Q4 and Q5 -Lower Palmdale (undivided and uncorrelated)
Late Middle Pleistocene (~80,000-60,000)	Mono Basin or Tahoe I	Riverbank	Riverbank	Oroville (lower) and Bowie Flat (upper)	Riverbank	Riverbank	Riverbank 1, 2, 3	Riverbank	West Lake silt	Los Banos Alluvium	No deposit or correlate	Q1, Q2, and Q3 - Upper, Middle, Lower TylerHorse)

Notes: [a] Not located within Study Area.

Modesto Formation

As defined by previous researchers, the Modesto Formation consists of alluvial fans and floodplains with flat to gently sloping surfaces that are commonly incised by modern stream and river channels near the foothills, but otherwise show little evidence of erosional dissection. These deposits are inset and topographically lie below the Riverbank Formation in positions near the foothills, and are often covered by younger alluvial sediments near the valley floor. The Modesto Formation is generally mapped near existing stream and river channels across much of the Central Valley floor (Busacca 1982; Helley and Harwood 1985), but "Modesto-age" channels are likely buried in some alluvial fans along the valley's eastern side (Atwater 1980; Busacca et al. 1989; Shlemon 1971; Weismann et al. 2002; Weismann et al. 2005). Isolated deposits of wind-blown (aeolian) dune sand, that may be Modesto-age, occur in the Delta (see "Piper sand" of Cosby 1941) and along the eastern edge of the San Joaquin Valley (Atwater 1980, 1982).

Upper Modesto deposits form a sequence of as many as four or more fans (Modesto 1-5) and terraces along each of the major (glaciated) Sierra rivers, which "represent four erosional or depositional phases" (Marchand and Allwardt 1981:59). Within the smaller, unglaciated watersheds of the Sierra foothills, however, upper Modesto deposits create a single terrace (Marchand and Allwardt 1981:59) and were often buried by Holocene-age colluvial fans (Harden and Marchand 1980). The ages of the upper and lower sub-units of the Modesto Formation are only partly constrained by stratigraphic and radiocarbon evidence. The age of the lower sub-unit was initially estimated to be approximately 40,000 to 30,000 years old (late Pleistocene), and the age of the upper sub-unit about 30,000 to 9,000 years old (Harden 1987; Helley and Harwood 1985; Marchand and Allwardt 1981). The age of lower Modesto deposits was later revised to about 33,000 to 26,000 years old, and upper Modesto deposits to about 26,000 to 11,500 years old based on evidence from the Kings River fan (Atwater et al. 1986).

It has been widely assumed that the Modesto formation correlates with late Pleistocene or Wisconsin glaciation (Tahoe, Tenaya, and Tioga stages), and Riverbank deposits with an earlier glacial interval, usually the Mono Basin stage. Because the number, extent, and age of glacial cycles in the Sierra Nevada remain in dispute and age estimates have changed substantially over the last 30 years, previous correlations between glacial intervals and episodes of alluvial deposition are inconsistent and often contradictory (Table 4). While pre-Tioga glaciations are admittedly inconsequential for archaeology, each of these earlier glacial cycles would presumably have produced a corresponding outwash deposit if the link between glaciation and deposition is as strong as often suggested.

In the unglaciated drainages of the western San Joaquin Valley, Lettis (1982) identified a sequence of alluvial deposits that he termed the Los Banos alluvium (middle Pleistocene), San Luis Ranch alluvium (late Pleistocene and early Holocene), Patterson alluvium (middle and late Holocene), and Dos Palos alluvium (latest Holocene), from oldest to youngest respectively (Lettis 1982). The typical geomorphic and stratigraphic relationship between these west-side units is shown in Figure 10, and the overall relationship between the east-side and west-side units within the San Joaquin Valley is shown in Figure 11. Because the western San Joaquin Valley drainages were not glaciated, Lettis (1982) suggests that large-scale climatic changes were responsible for the formation of these landforms. Thus, stratigraphic sequences of the eastern and western San Joaquin Valley are generally presumed to reflect differences between glacially driven (east) and climatically driven (west) landscape evolution.

Furthermore, a distinct middle Holocene-age deposit has not been identified or formally defined as part of previous geological studies of the San Joaquin Valley and Sierra Nevada foothills (see Table 3; e.g., Hall 1984; Harden and Marchand 1980; Marchand and Allwardt 1981); neither buried nor at the surface. The absence of deposits dating to the middle Holocene is both curious and conspicuous given that sedimentation is thought to have been almost continuous in and near the axis of the San Joaquin Valley (Atwater et al. 1986; Busacca et al. 1989; Huntington 1980; Lettis 1982; Olmstead and Davis 1961). The potential lack of a middle Holocene-age unit is problematic because it may indicate a missing time interval ("gap") in the stratigraphic record, and possibly the cultural record as well.

Table 4. Relationship of Glacial Stages with Deposits in the San Joaquin Valley and Adjoining Foothills.

Region or Area (Source No.)	Glacial Stage and Time Period					
	Mono Basin or Tahoe I	Tahoe I and/or II	Tenaya or Tahoe II	Tioga I-IV	Recess Peak	Little Ice Age
	Late Middle Pleistocene (~80,000-60,000)	Late Pleistocene (~50,000-42,000)	Late Pleistocene (~42,000-28,000)	Late Pleistocene (25,000-15,000)	Latest Pleistocene (14,200-13,100)	Latest Holocene (650-150)
Madera County and Eastern San Joaquin 1	Riverbank	Lower Modesto	Upper Modesto	Upper Modesto	Upper Modesto (uncorrelated)	No correlated deposit
Chowchilla River Fan 2 (unglaciated)	Riverbank	Lower Modesto	Dune Sand (pre-Tioga?)	Upper Modesto	Upper Modesto (uncorrelated)	No correlated deposit
San Joaquin River Fan 3	Riverbank	Lower Modesto	Upper Modesto	Upper Modesto	Upper Modesto (uncorrelated)	No correlated deposit
San Joaquin and Kings River Fans 4	Riverbank 1, 2, 3	Modesto 1, 2	Modesto 3	Modesto 3, 4	Modesto 5, 5w (uncorrelated)	No correlated deposit
Kings River Fan 5	Riverbank	Modesto (undivided)	Modesto (undivided)	Modesto (undivided)	Modesto (uncorrelated)	No correlated deposit
Tulare Lake and Kings River Fan 6	West Lake silt	no deposition or correlate	no deposition or correlate	Upper Modesto - Chatom silt	no deposition or correlate	No correlated deposit
Western San Joaquin Valley (unglaciated)	Los Banos Alluvium (uncorrelated)	Lower San Luis Ranch Alluvium (uncorrelated)	Lower San Luis Ranch Alluvium (uncorrelated)	Upper San Luis Ranch Alluvium (uncorrelated)	Upper San Luis Ranch Alluvium (uncorrelated)	Patterson and Dos Palos Alluvium (uncorrelated)

Sources: 1 – Marchand (1977a, b); Marchand and Allwardt (1981); 2 – Helley (1966); 3 – Janda and Croft (1967); 4 – Huntington (1980); 5 – Weismann et al. (2002); 6 – Atwater et al. (1986) and Davis (1999); 7 – Lettis (1982, 1985, 1988).
Notes: Numbers assigned to Riverbank and Modesto formations by Huntington (1980).

CONSTRAINING THE AGES OF MODESTO AND POST-MODESTO DEPOSITS

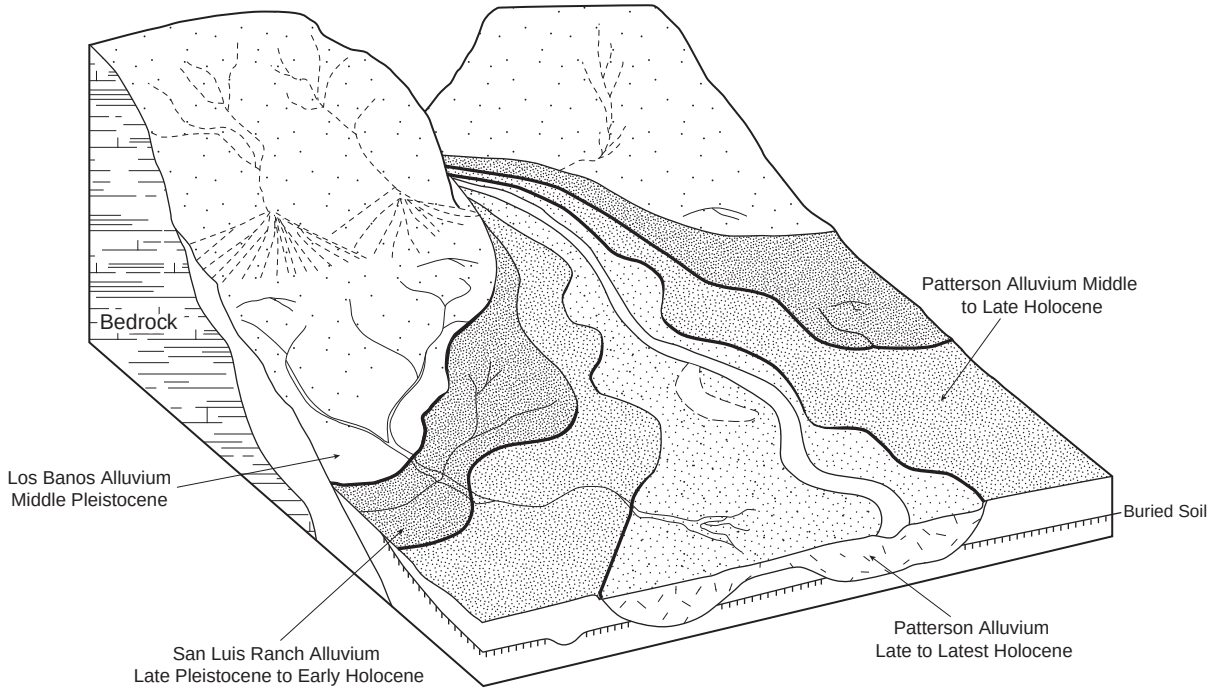
> With their four-dimensional minds, and in their interdisciplinary ultra verbal way, geologists can wiggle out of almost anything.
> ~ John McPhee (author)

The chronologic and stratigraphic relationships between Modesto and post-Modesto formations are widely viewed as a temporal and physical boundary that allows latest Pleistocene-age deposits to be distinguished from those that are Holocene in age. While the stratigraphic break between Modesto and Post-Modesto has been widely recognized (i.e., unconformity), the age of the two formations has not been well constrained by previous studies. As shown in Table 5, researchers variously place the age of the upper Modesto formation anywhere between about 28,000 and 7800 cal BP, with a minimum age extending some 3,700 years into the Holocene.

Table 5. Summary of Proposed Age Ranges for Upper Modesto and Post-Modesto Deposits.

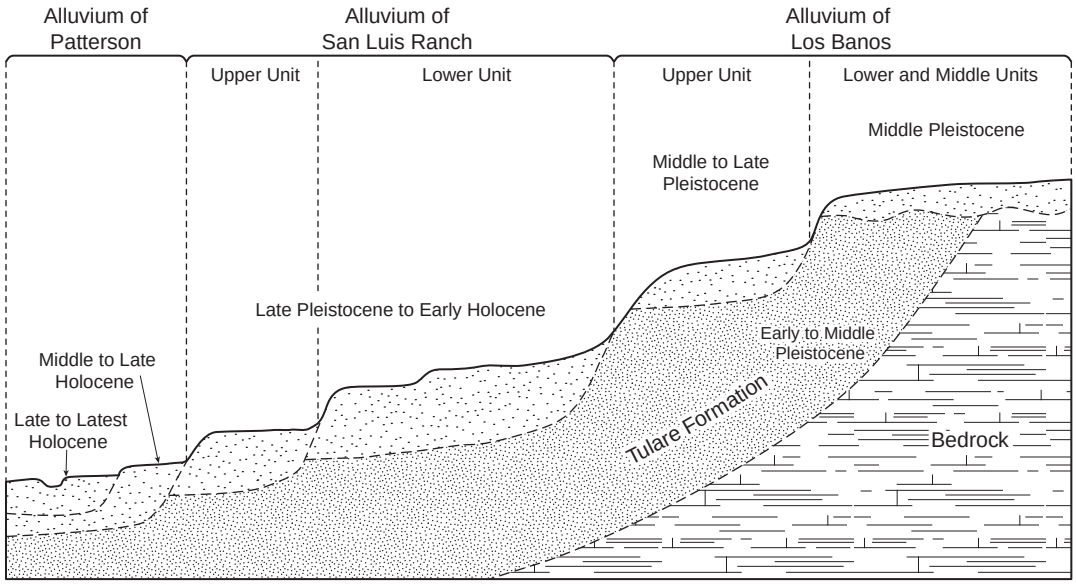
Area (Reference)	Upper Modesto	Post-Modesto
Sierra Foothills (Harden and Marchand 1980)	11.5-7.8 ka	7.8-0 ka
Sacramento Valley (Busacca et al. 1989)	16.7-9.2 ka	9.2-0 ka
San Joaquin Valley (Harden 1987)	~28-9.2 ka	9.2-0 ka
San Joaquin Valley (Marchand and Allwardt 1981)	16.7-10.2 ka	10.2-0 ka
San Joaquin Valley (Atwater et al. 1986)	~28-11.5 ka	11.5-0 ka
Maximum Combined Age Range	~28-7.8 ka	7.8-0 ka

Notes: ka – Kiloannum (1,000 years) in calibrated years (cal BP); radiocarbon dates greater than ~22 ka were calibrated according to Fairbanks et al. (2005).



(Adapted from Lettis 1985: Figure 5)

a: Sequence of Inset Stream Terraces and Nested Alluvial Fans in West-central San Joaquin Valley.



(Adapted from Lettis 1985: Figure 7)

b: Cross-section of Terrace Sequence and Stratigraphic Units on the East Side of the Diablo Range.

Figure 10. Major Geomorphic and Stratigraphic Units in Western San Joaquin Valley.

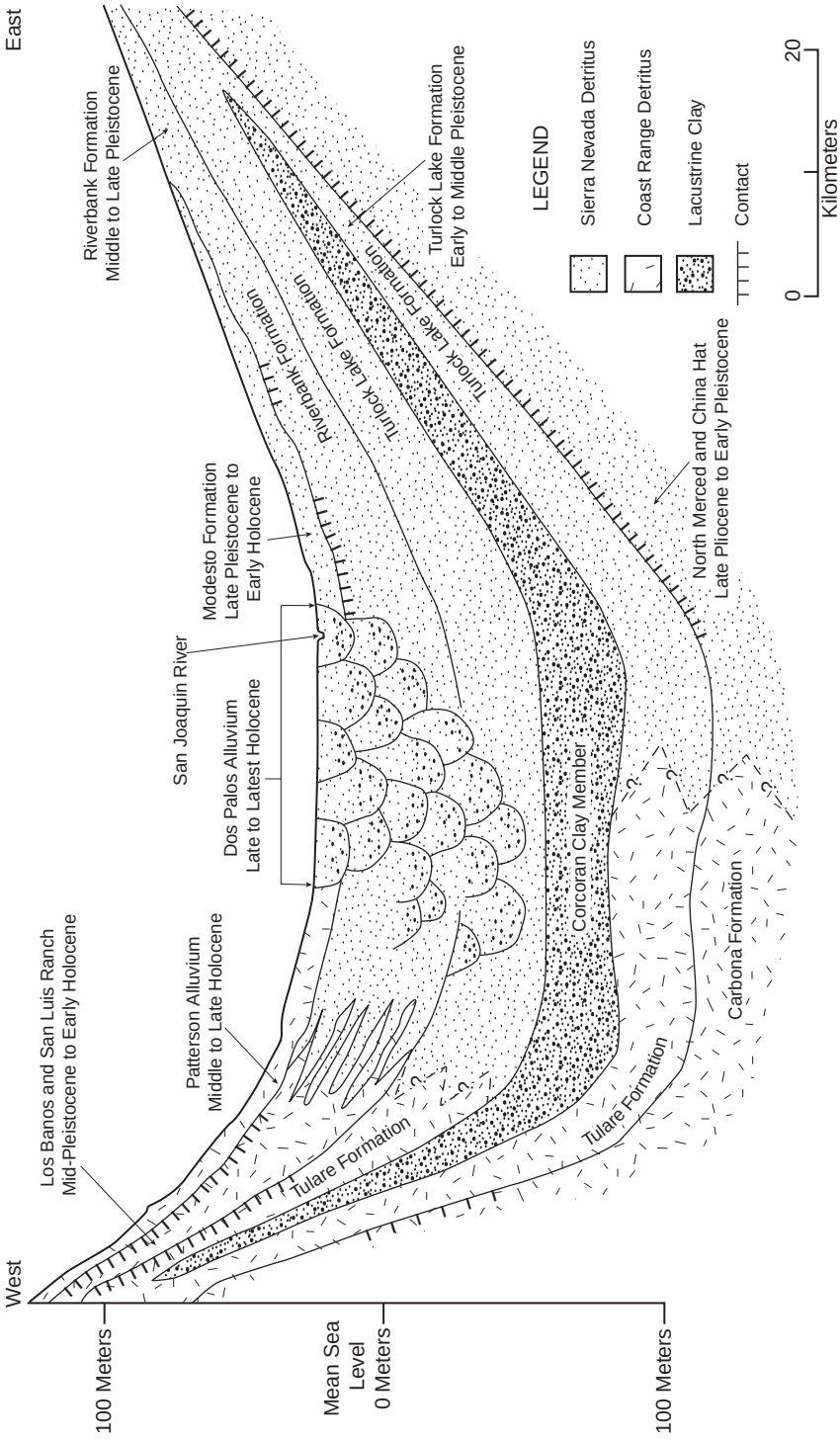


Figure 11. Schematic Cross Section of Major Stratigraphic Units in the San Joaquin Valley.

(Simplified from Lettis 1982: Plate 25 and Adapted from Bartow 1991: Figure 3)

If the general range is correct, the upper Modesto formation may have been deposited thousands of years after the Tioga glaciers had receded, and even after the Recess Peak glacial retreat (<13,500 cal BP). If some portion of the upper Modesto formation is early Holocene in age, then it is technically part of the post-Modesto formation as originally conceived. While uncertainty about the upper Modesto's minimum age is small on a geologic time-scale, it is unacceptably large for archaeological purposes, since the purported age range spans initial human colonization of North America.

Previous Soil-Age Relationships

Quaternary geologists have regularly used soil development to determine the relative ages of alluvial deposits and geomorphic surfaces in central California. Generally speaking, soils with very weakly developed A/C or argillic (Bw or cambic) horizons are often associated with upper Modesto deposits, while soils having strongly developed argillic (Bt) horizons are correlated with lower Modesto or Riverbank deposits (Marchand and Allwardt 1981:59). Temporally significant soil types previously associated with the Modesto and post-Modesto formations are summarized in Table 6. The geomorphic and stratigraphic relationship between these strata and soil types is illustrated in Figure 12.

From the time that Arkley (1954, 1962) first recognized and documented the stratigraphic significance of particular soil types, soil development has been the main criteria for distinguishing and mapping alluvial deposits of different ages throughout the San Joaquin Valley (see Table 3; Atwater 1982, Atwater et al. 1986; Blake et al. 1992; Birkeland 1974; Busacca et al. 1989; Harden 1987; Helley 1966; Helley and Harwood 1985; Huntington 1980; Janda and Croft 1967; Lettis 1982, 1988; Ponti 1985; Shlemon 1967, 1972; Weismann et al. 2002, 2005).

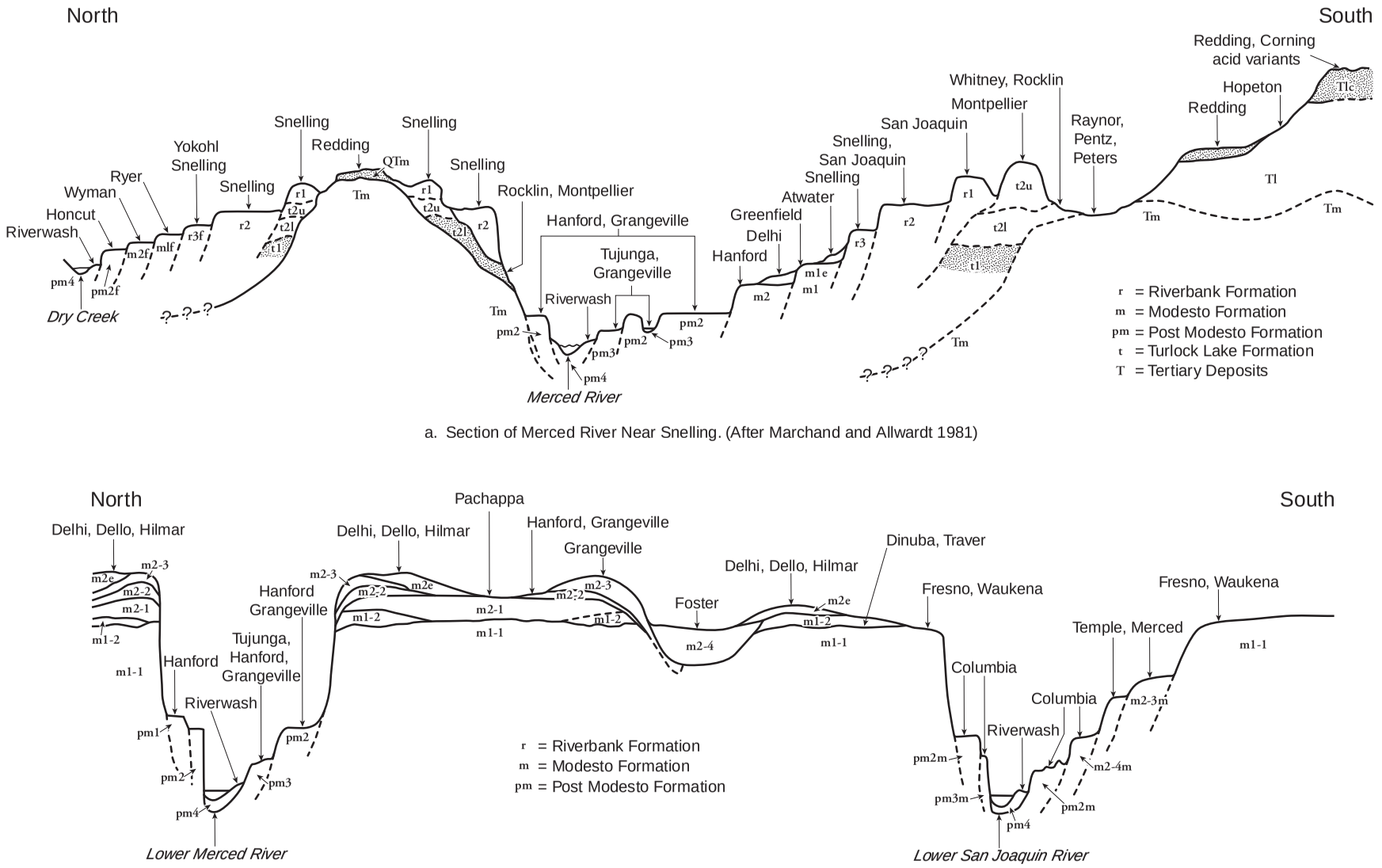
The direct application of this relative dating approach has since been drawn into question because many soils with similar degrees of development have been mapped at the surfaces of different landforms identified as either latest Pleistocene or Holocene in age. This suggests that either the assumed age of these landforms is incorrect or soil development is a poor indicator of landform age (Meyer and Rosenthal 2008). As is evident in Table 6, the estimated age of the same surface soils varies widely among researchers, with several considered to be solely Pleistocene-age by some and solely Holocene-age by others.

One such example was found in the northwestern Sacramento Valley where it was recognized that the development of certain surface soils was inconsistent with a sequence of late Quaternary alluvial terraces identified there. In this case, moderately developed Arbuckle-series soils occur on both the lower Modesto and upper Modesto terraces, while weakly developed Cortina and Yolo soils are mapped on both upper Modesto and post-Modesto terraces (Steele 1979:34-35). It has since been shown, however, that both the Cortina and Yolo soils in this region are only latest Holocene in age (Meyer and Rosenthal 2008).

In the northeastern Sacramento Valley, an upper Modesto deposit dated between about 11,500 and 9200 cal BP bears a relatively undeveloped surface soil with a A/Bw/C profile (Conejo series) thought to be at the "young end of this range" (Busacca et al. 1989:19, 41). Subsequent geoarchaeological evidence from the Best Slough floodplain in Yuba County indicates that Conejo-series soils are actually late Holocene in age (<4000 cal BP), and can contain buried archaeological deposits less than 2,000 years old (Eidsness and Meyer 1999). Other recent geoarchaeological studies have identified Holocene-age deposits with weak (Bw) to moderate (Bt) argillic soil horizons throughout central California—many overlying archaeological sites—that include soils previously considered to be late Pleistocene in age (Meyer 2000; Meyer and Dalldorf 2004; Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2009).

Radiocarbon Assessment of "Modesto" Soil-Age Relationships

Marchand and Allwardt (1981) have explicitly identified the Fresno soil series as being representative of the lower Modesto formation; however, several recent studies indicate that these soils are instead associated with upper Modesto-age landforms (Table 6). These soils were initially interpreted as being more than 40,000 years old because they exhibit a strongly developed argillic horizon and silica-cemented hardpan (Marchand and Allwardt 1981:56). At the same time, it was noted that the age of the Fresno soil may be overestimated because the fine-grained texture and high sodium content of these soils can increase the rate of development (Atwater 1982; Arkley 1962, 1964; Birkeland 1974:112; Huntington 1980; Jenny 1941:99).



a. Section of Merced River Near Snelling. (After Marchand and Allwardt 1981)

b. Section of Merced River West of Stevinson. (After Marchand and Allwardt 1981)

Figure 12. Schematic Cross Sections of Merced River Showing Relation of Soils to Geomorphic Surfaces and Stratigraphic Units.

Table 6. Summary of Soil Types Previously Associated with Modesto and Post-Modesto Deposits.

Region or Area (Reference)	Modesto Formation			Post-Modesto Formation		
	Late Pleistocene (~50,000 to 25,000)	Undifferentiated (~50,000 to 11,500)	Late or Latest Pleistocene (25,000 to 11,500)	Latest Pleistocene (15,000 to 11,500)	Earliest Holocene (11,500 to ~9200)	Holocene - Historic-Era (11,500 to 0)
Sacramento Valley - Northeast (Busacca 1982; Busacca et al. 1989)	N/A	Gridley, Live Oak, Marcus, Ryer, Wyman, Yuvas	N/A	N/A	Conejo	Honcut
Sacramento Valley - American River (Shlemon 1967)	N/A	Greenfield	Honcut	Honcut	Honcut	Columbia, Hanford, (Freeport), Sacramento
Sacramento-San Joaquin Delta (Atwater 1980, 1982; Atwater and Marchand 1980)	Antioch, Riz, San Ysidro	N/A	Bear Creek, Brentwood, Delhi, Dinuba, Hanford, Honcut, Fresno, Oakley, Piper, Rincon, Stockton, Zamora	Bear Creek, Brentwood, Delhi, Dinuba, Hanford, Honcut, Fresno, Oakley, Piper, Rincon, Stockton, Zamora	Bear Creek, Brentwood, Delhi, Dinuba, Hanford, Honcut, Fresno, Oakley, Piper, Rincon, Stockton, Zamora	Burns, Correra, Capay, Clear Lake, Columbia, Egbert, Sacramento, Sorrento, Staten, Ryde, Venice
San Joaquin Valley - Northeast (Marchand 1977a)	Borden, Dinuba, Fresno, Greenfield, Lewis Pachappa, Pond, Rossi, Ryer, Traver, Waukena, Wyman	N/A	Chino, Hanford, Hesperia, Landlow, Merced, Pachappa, Temple, Visalia, Wunjey	Chino, Hanford, Hesperia, Landlow, Merced, Pachappa, Temple, Visalia, Wunjey	Chino, Hanford, Hesperia, Landlow, Merced, Pachappa, Temple, Visalia, Wunjey	Bear Creek, Columbia, Foster, Grangeville, Hanford, Honcut, Merced, Temple, Tujunga, Yolo
Sierra Foothills - West-Central (Harden and Marchand 1980)	Chular, Greenfield	N/A	Hanford, Hildreath, Marguerite, Visalia	Hanford, Hildreath, Marguerite, Visalia	Hanford, Hildreath, Marguerite, Visalia <7.8 ka	Grangeville
San Joaquin Valley - Northeast (Marchand and Allwardt 1981)	Atwater, Borden, Fresno, Waukena	Dinuba, El Peco, Greenfield, Pachappa, Pond, Rossi, Ryer, Traver, Wyman	Chino, Hanford, Hesperia, Landlow, Merced, Pachappa, Temple, Visalia, Wunjey	Chino, Delhi, Dello, Hanford, Hesperia, Hilmar, Landlow, Merced, Pachappa, Temple, Visalia, Wunjey	Chino, Delhi, Dello, Hanford, Hesperia, Hilmar, Landlow, Merced, Pachappa, Temple, Visalia, Wunjey	Bear Creek, Columbia, Foster, Grangeville, Hanford, Honcut, Merced, Temple, Tujunga, Yolo
San Joaquin Valley - West-Central (Lettis 1982)	N/A	Fresno, Waukena	Lethent (Volta), Lillis (Levis), Rincon (Pleasanton), Rossi	Lethent (Volta), Lillis (Levis), Rincon (Pleasanton), Rossi	Lethent (Volta), Lillis (Levis), Rincon (Pleasanton), Rossi	Columbia, Merced, Panoche, Sacramento, Temple, Willows, Yolo (Sorrento)
San Joaquin Valley - Northeast (Harden 1987)	Greenfield	N/A	Hanford, Honcut	Hanford, Honcut	Hanford, Honcut	Grangeville, Hanford
Chowchilla River Fan (Helley 1966)	Atwater, Borden, Greenfield, Pachappa	N/A	Hanford, Tujunga	Hanford, Tujunga	Hanford, Tujunga	N/A
San Joaquin River Fan (Janda and Croft 1967)	Atwater, Border, Fresno, Greenfield, Hanford (ripperdan), Hilmar, Ryer	N/A	Delhi, Dello, Dinuba, El Peco, Fresno, Grangeville, Greenfield, Hanford, Honcut, Marguerite, Merced, Pachappa, Tujunga, Wyman	Delhi, Dello, Dinuba, El Peco, Fresno, Grangeville, Greenfield, Hanford, Honcut, Marguerite, Merced, Pachappa, Tujunga, Wyman	N/A	Bear Creek, Columbia, Delhi, Foster, Grangeville, Hanford, Honcut, Merced, Tujunga, Yolo
San Joaquin and Kings River Fans (Huntington 1980)	Atwater, Fresno, Greenfield, Pond, Rossi variant	N/A	Cajon variant, El Peco, Hanford, Hesperia variant, Pollasky, Traver, Tujunga	Calhi, Cajon variant, Chino, Delhi, Dello, Hanford	Calhi, Cajon variant, Chino, Delhi, Dello, Hanford	Chino, Foster, Grangeville, Hanford, Honcut, Merced, Piper, Temple, Tujunga (Soboda), Visalia?
Mojave Desert - Western Antelope Valley (Ponti 1985)	Borden, Greenfield	N/A	Cajon, Hanford	Cajon, Hanford	Cajon, Hanford	Arizo, Grangeville, Soboda, Tujunga

To better constrain the age of the Fresno Series, a radiocarbon sample was obtained as part of the current study from beneath this soil in an exposure along the Chowchilla Canal in Madera County (Figure 13; Location Madera 1). The sample originated from a well-developed buried soil identified more than three meters (10 feet) below the surface (see photos in Chapter 4). The resulting date of 19,080 cal BP (Beta-255480) indicates the Fresno Series formed in alluvium deposited after the last glacial maximum (Tioga), and must correlate with the upper Modesto formation as defined, and not the lower Modesto as originally thought. A late Pleistocene-age for the Fresno soil is significant because it shows that similar strongly developed soils may also date to that time, while more weakly developed soils likely post-date the late Pleistocene.

A similar stratigraphic relationship was observed during a geoarchaeological study conducted in Caltrans District 10 to the north. As part of that study, a radiocarbon date of 20,200 cal BP (Beta-185710) was obtained from a well-developed buried soil exposed in a high terrace south of the Tuolumne River (Rosenthal and Meyer 2004b:66). This location is important because it lies near the original Modesto Formation type section and was mapped as an upper Modesto terrace deposit by Marchand and Allwardt (1981:60). The alluvium that forms the surface of the terrace bears a very weakly developed soil identified as the Tujunga. While previous researchers often associated the Tujunga Series with younger Holocene-age landforms (see Table 6), this soil also occurs on alluvial deposits mapped as late Pleistocene-age (Modesto) on the Chowchilla River fan (Helley 1966), the San Joaquin River fan (Janda and Croft 1967), and the Tuolumne River fan as noted above (Marchand and Allwardt 1981).

The maximum age of Tujunga series soils is constrained by a date of 1200 cal BP (OS-70225) obtained as part of the current study from the first buried soil (2Ab) exposed along the south bank of the Chowchilla River in Madera County (Figure 13:Location Madera 6). This date provides a maximum age for the Tujunga soil and indicates the upper Modesto deposit, as mapped along the Tuolumne River by Marchand and Allwardt (1981), was laid down less than 1,200 years ago, and that the underlying deposit was emplaced before the last glacial maximum (~22,000 cal BP), correlating with the lower Modesto formation as defined. This stratigraphic relationship suggests that late-glacial outwash did not cover this part of the Tuolumne River fan, and that the last major depositional episode did not occur until the latest Holocene, and only then after 20,000 years or more of landform stability (Rosenthal and Meyer 2004b:66).

Pleistocene-age land surfaces buried by middle or late Holocene-age deposits are not unique exceptions found in a few isolated areas, but occur at many other locations throughout the San Joaquin Valley and seem to represent part of a larger pattern of regional landscape evolution (Meyer 1996; Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2004b, 2009). More than a dozen radiocarbon dates from this and previous geoarchaeological studies confirm that late Pleistocene "Modesto-age" soils are buried at locations throughout the San Joaquin Valley. As shown in Figure 14, a date of 26,350 cal BP (OS-70230) from the glaciated eastern side of the San Joaquin River and one of 31,340 cal BP (OS-70220) from the unglaciated western side, both pre-date the last glacial maximum ("pre-Tioga"). Buried soils on both sides of the river, including below the Fresno Series, correspond closely with the age of the Tioga maximum (20,830 to 19,080 cal BP), suggesting that this time was marked by a period of relative landform stability, and not deposition. Most of the late Pleistocene buried soils, however, post-date the Tioga maximum by about 4,000 to 8,000 years (17,025 to 13,050 cal BP). Further, a revised Modesto soil-age relationship implies that major depositional episodes previously attributed to the Pleistocene are, in fact, Holocene in age (i.e., post-Modesto in age).

Radiocarbon Assessment of "Post-Modesto" Soil-Age Relationships

A variety of surface soils in the San Joaquin Valley are generally associated with Holocene-age landforms, or sub-phases of the post-Modesto Formation as defined by Marchand and Allwardt (1981). But just as many "Modesto-age" soils are found on Holocene-age landforms, many of the most representative "post-Modesto" soils, like the Cajon, Chino, Hanford, Hesperia, Hilmar, Honcut, and Visalia series, also occur at the surface of landforms argued to be Pleistocene-age (see Table 6).

Marchand and Allwardt (1981) identified four main sub-units within the post-Modesto formation, which they designated with Roman numerals I, II, III, and IV from oldest to youngest. In the case of post-Modesto I, they explicitly associated soils of the Pachappa Series with these deposits, and observed that it was poorly represented at the surface and that related landforms were often isolated and/or surrounded by younger

deposits where present. To constrain the age of the Pachappa Series, we obtained two radiocarbon dates from a cutbank exposed along upper Berenda Creek in Madera County (see Figure 13; Location Merced 8), where it is buried by a younger deposit—probably the Hanford series (Figure 15). A sample from the buried (2Ab) surface of the Pachappa soil produced a date of about 3200 cal BP (OS-72823), while a date of about 5230 cal BP (Beta-255479) was obtained from a buried soil (3Btb) underlying the Pachappa (see photos in Chapter 4). Thus, the age of this signature post-Modesto I soil is now bracketed between 5200 and 3200 cal BP, suggesting it is at least late Holocene in age (i.e., <4,000 cal BP).

As for those soils found on both Pleistocene (Modesto) and Holocene (post-Modesto) land surfaces, radiocarbon dating shows that soils of the Cajon, Chino, Hanford, Hesperia, Honcut, and Visalia series are generally no more than 4,000 years old (cal BP), or late Holocene-age, and that soils such as the Hilmar and Tujunga series are less than 2,000 years old (cal BP), or latest Holocene-age (Table 7; Figure 15). Maximum ages were also obtained for soils such as the Cajon, Merced, Rossi, and Wunjey series, indicating that all are at least late or latest Holocene in age.

The only notable exceptions include a maximum early Holocene date of 9680 cal BP (Beta-246542) for the Piper series from Terminous Tract in the San Joaquin Delta (Meyer 2008b), and a minimum middle Holocene date of 5235 cal BP (Beta-255479) for the Greenfield series from Berenda Creek in Madera County. Most importantly, soils most often associated with Holocene (post-Modesto) deposits in the study area (i.e., Arizo, Bear Creek, Foster, Grangeville, and Panoche series), are consistently less than about 4000 cal BP, or late Holocene in age, even at their 2-sigma maximum age ranges (Table 7; Figure 15).

CONCLUSIONS

Recent radiocarbon-dating has shown that alluvial deposits in central California, including those on the skirt of the western Sierra Nevada, are typically out of phase with glacial cycles. At the time of the glacial maximum (about 22,000 cal BP), landscape stability is represented by buried soils of this age in alluvial fans fronting the western Sierra Nevada and floodplains from the San Joaquin Valley proper. At the same time, pluvial lakes east of the Sierra Nevada were desiccated or in a recessional phase. These patterns clearly demonstrate that glacial advance does not correlate with intervals of widespread sediment transport or deposition. However, after the Tioga glaciers had receded, more than 15,000 years ago, depositional pulses are recorded by sequential buried soil profiles in the San Joaquin Valley, which correlates with pluvial lake high-stands east of the Sierra Nevada. This suggests that there is some relationship between non-glacial conditions and sediment transport and deposition in central California. However, soil-age relationships described above offer compelling evidence that many landforms previously mapped as late Pleistocene-age are in fact capped by Holocene-age deposits with weakly to moderately developed soils, clearly demonstrating that widespread deposition was not simply an end-Pleistocene phenomenon. These relationships confirm that the magnitude and extent of Holocene sediment deposition was substantially greater and more pervasive than generally recognized in Central California. They also show that inconsistencies and problems with previous mapping affect our ability to understand the true age of many surface landforms, which has far-reaching implications for deciphering the Holocene landscape evolution and mechanisms driving landscape change.

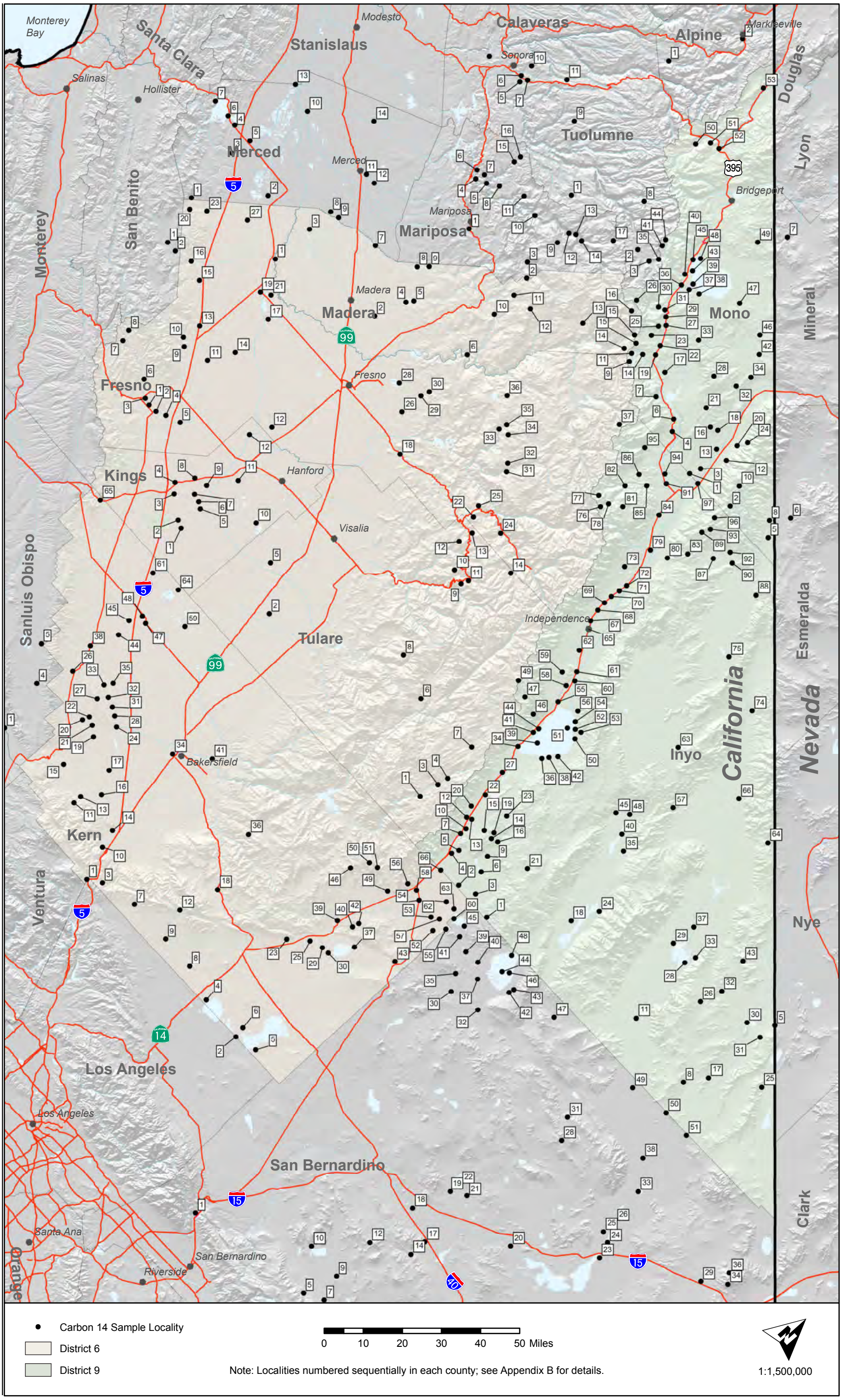
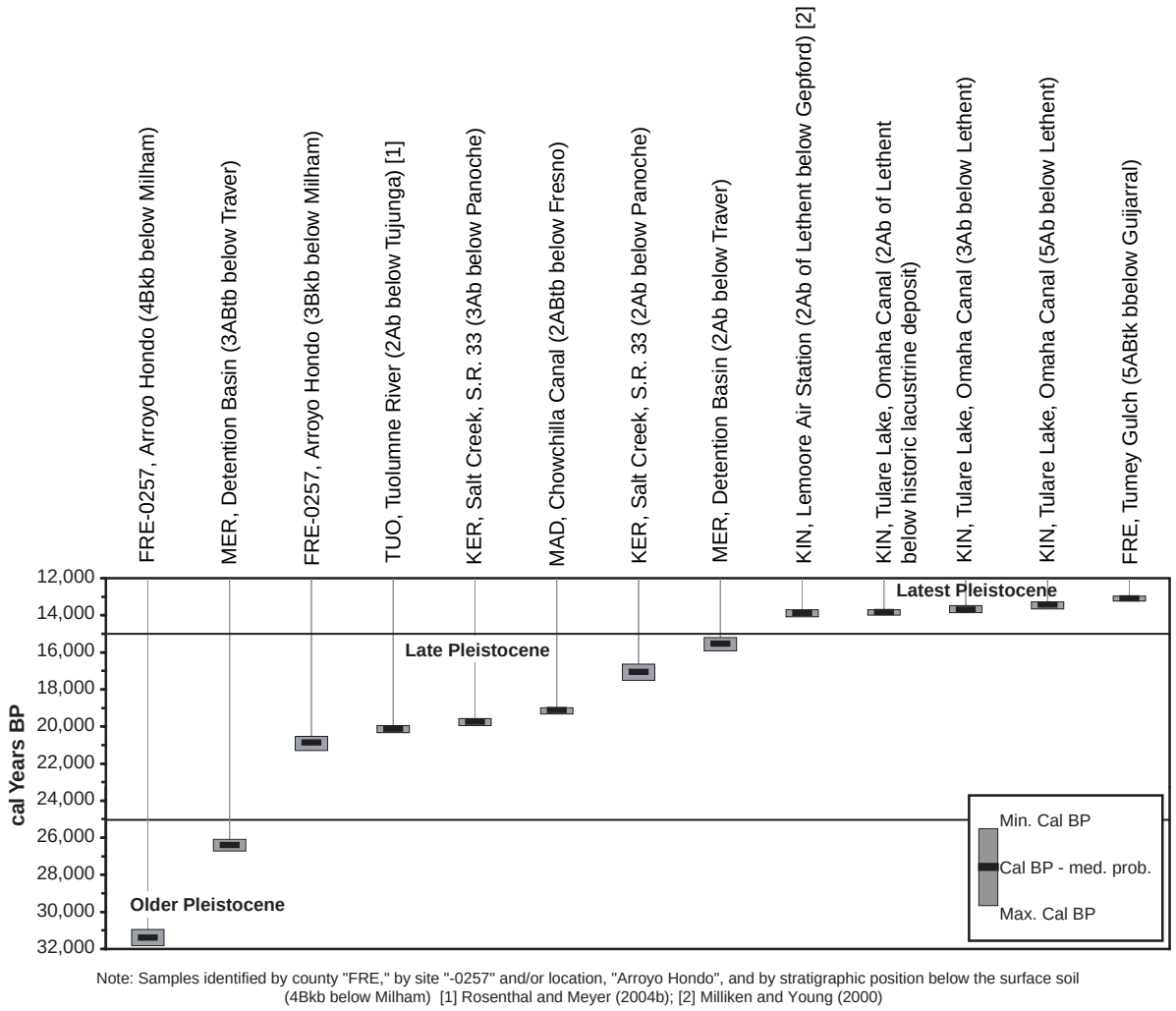


Figure 13. Distribution of Radiocarbon Sample Localities in and near District 6/9.



Note: Samples identified by county "FRE," by site "-0257" and/or location, "Arroyo Hondo", and by stratigraphic position below the surface soil (4Bkb below Milham) [1] Rosenthal and Meyer (2004b); [2] Milliken and Young (2000)

Figure 14. Pleistocene Radiocarbon Dates from Buried "Modesto-Age" Soils in the San Joaquin Valley.

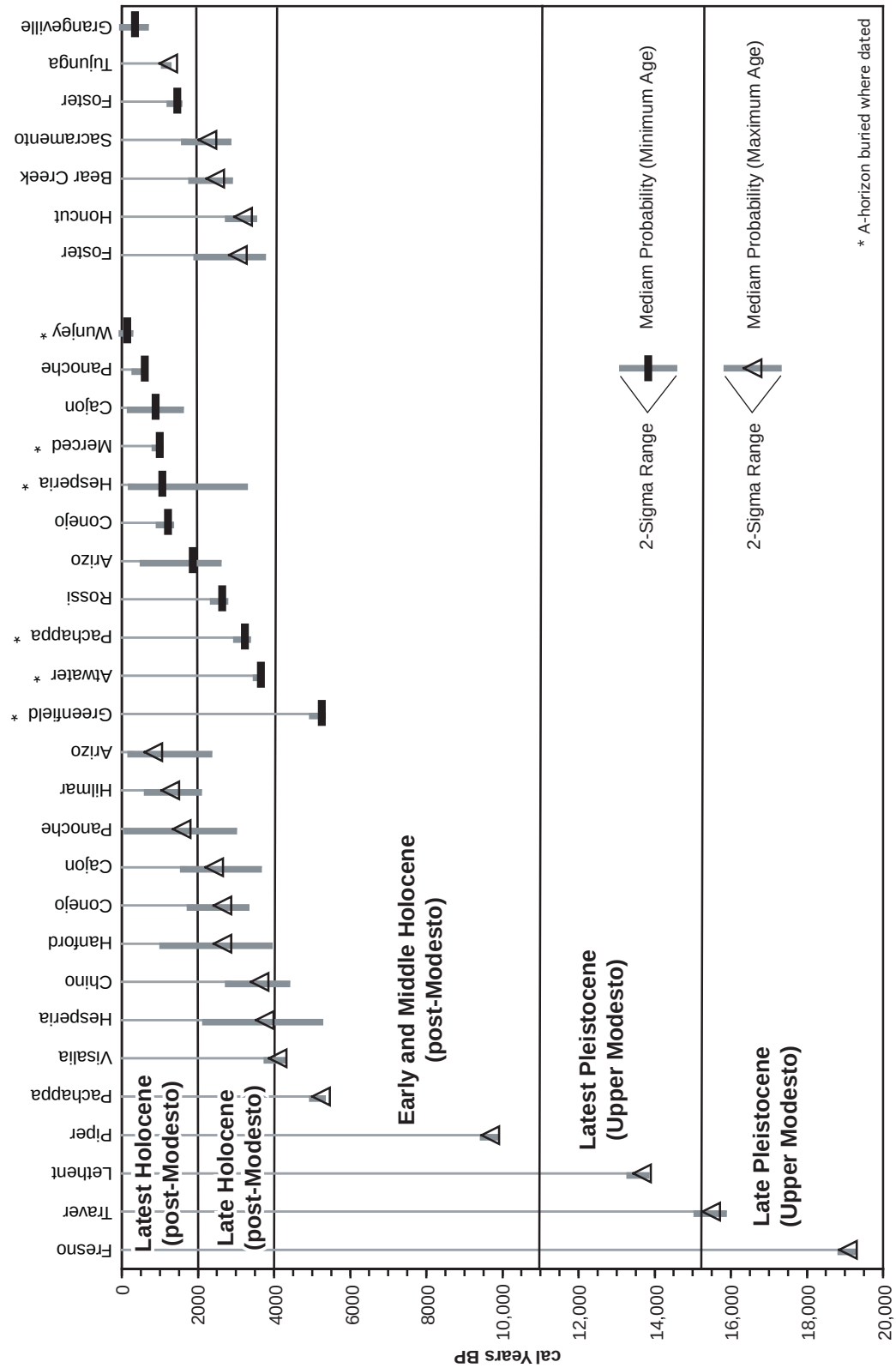


Figure 15. New Radiocarbon-Age Relationships of "Modesto" and Post-Modesto Soils in the Study Area.

Table 7. Previous and Revised Age of Surface Soils Associated with "Modesto" and "Post-Modesto" Deposits in the San Joaquin Valley.

Soil Series (Context)	Dates (n=146)	cal BP	2-sigma cal BP	Previous Age(s), Formation, Member, or Unit [Correlate]	Revised Age
Post-Modesto Soils					
Grangeville (surface)	5	323	63-679	Holocene, Post-Modesto I, II, and III	Latest Holocene
Merced (surface) [a]	1	971	924-1057	Latest Pleistocene and Holocene, Upper Modesto and Post-Modesto I-II [Dos Palos]	Middle Holocene
Wunjey (surface) [a]	1	128	57-275	Latest Pleistocene, Upper Modesto	Latest Holocene
Tujunga (buried)	1	1217	1168-1279	Latest Pleistocene and Holocene, Upper Modesto and Post-Modesto I, II, III	Historical-Modern
Hilmar (buried)	3	1268	723-2073	Late Pleistocene, Lower Modesto	Latest Holocene
Panoche (surface)	5	585	398-665	Holocene, Post-Modesto II, [Patterson]	Latest Holocene
Panoche (buried)	4	1571	185-2992	Holocene, Post-Modesto II, [Patterson]	Latest Holocene
Arizo (surface)	13	828	285-2347	Holocene, Post-Modesto II [Post Palmdale I]	Latest Holocene
Arizo (buried)	14	1845	604-2592	Holocene, Post-Modesto II [Post Palmdale I]	Latest Holocene
Sacramento (buried)	1	2257	1692-2845	Holocene, Post-Modesto I-IV [Dos Palos]	Latest Holocene
Foster (surface)	2	1438	1313-1562	Holocene, Post-Modesto I, II, and III	Latest Holocene
Foster (buried)	3	3053	2014-3759	Holocene, Post-Modesto I, II, and III	Latest Holocene
Modesto Soils					
Cajon (surface)	39	873	272-1601	Latest Pleistocene, Upper Modesto [Upper Palmdale]	Latest Holocene
Cajon (buried)	7	2433	1674-3642	Latest Pleistocene, Upper Modesto [Upper Palmdale]	Latest Holocene
Bear Creek (buried)	3	2461	1891-2890	Holocene, Post-Modesto II	Late Holocene
Rossi (surface)	1	2615	2453-2765	Late Pleistocene, Lower Modesto	Early Holocene
Conejo (surface)	2	1189	1037-1340	Latest Pleistocene, Upper Modesto	Latest Holocene
Conejo (buried)	5	2640	1839-3320	Latest Pleistocene, Upper Modesto	Late Holocene
Hanford (buried)	4	2644	1131-3929	Latest Pleistocene and Holocene, Upper Modesto and Post-Modesto I, II, III	Late Holocene
Honcut (buried)	2	3184	2848-3519	Holocene, Post-Modesto I and II	Late Holocene
Chino (buried)	5	3622	2846-4397	Latest Pleistocene, Upper Modesto	Late Holocene
Atwater (surface)[a]	1	3637	3574-3693	Late Pleistocene, Lower Modesto ["pre-Tioga" dune sand]	Latest Pleistocene
Hesperia (surface)[a]	11	1045	295-3288	Latest Pleistocene, Upper Modesto	Late Holocene
Hesperia (buried)	2	3755	2246-5263	Latest Pleistocene, Upper Modesto	Late Holocene
Visalia (buried)	1	4089	3859-4300	Latest Pleistocene, Upper Modesto	Late Holocene
Pachappa (surface) [a]	1	3208	3050-3360	Late and/or Latest Pleistocene, Upper and/or Lower Modesto	Middle Holocene
Pachappa (buried)	1	5233	5052-5325	Late and/or Latest Pleistocene, Upper and/or Lower Modesto	Middle Holocene
Greenfield (surface) [a]	1	5233	5052-5325	Late and/or Latest Pleistocene, Upper and/or Lower Modesto	Early Holocene
Piper (buried)	1	9680	9550-9880	Latest Pleistocene, Upper Modesto	Early Holocene
Lethent (surface)[a]	4	13,670	13,394-13,835	Late and/or Latest Pleistocene, Upper and/or Lower Modesto [San Luis Ranch]	Latest Pleistocene
Traver (buried)	1	15,490	15,158-15,866	Late and/or Latest Pleistocene, Upper and/or Lower Modesto	Early Holocene
Fresno (buried)	1	19,079	18,920-19,281	Late and/or Latest Pleistocene, Upper and/or Lower Modesto	Latest Pleistocene

Note: cal BP – Mean for multiple median probabilities; [a] Buried where dated.

CHAPTER 4. AGE OF SURFACE LANDFORMS, REFINED SOIL CHRONOSTRATIGRAPHY, AND MODEL OF LANDSCAPE EVOLUTION

> The conflict of theories, leading, as it eventually must,
> to the survival of the fittest, is advantageous.
> ~ Grove Karl Gilbert (USGS Geologist 1879–1918)

Numerous geological studies conducted throughout California indicate that alluvial and colluvial landforms have undergone prolonged periods of stability, interrupted by episodes of widespread erosion and relatively rapid deposition. These cycles of landscape evolution are expressed as stratigraphic series of laterally extensive buried soils. Radiocarbon dates from these buried soils demonstrate that cyclical deposition and stability were on-going processes spanning the late Pleistocene and throughout the Holocene, recorded in glaciated and unglaciated drainages alike. These patterns appear to be best explained by broad changes in regional climate, rather than simply a response to glacial cycles. With this in mind, the following chapter begins by detailing a model of landscape evolution that provides a direct link between changes in precipitation, vegetative cover, and intervals of landscape stability and instability, explaining why roughly synchronous episodes of Pleistocene and Holocene landscape evolution are recorded throughout central California. This is followed by a new synthesis of landscape evolution in the Study Area based on the chronostratigraphic analysis of more than 2,400 radiocarbon dates, resolving many of the inconsistencies in soil-landform relationships inherent to earlier studies.

A CLIMATE-BASED MODEL OF LANDSCAPE EVOLUTION

Geomorphic studies conducted in basins of the western United States have shown that maximum sediment yields are typically produced when vegetation cover is reduced and precipitation is increased (Langbein and Schumm 1958). Such geomorphic thresholds are reached when the prevailing climate changes from dry to wet or wet to dry. Sediment yield drops sharply in either direction of this threshold due to decreased runoff at lower levels of precipitation and increased vegetation cover at higher levels (Bull 1964:37; Langbein and Schumm 1958; Ritter 1986). For example, Figure 16 illustrates the relationship between mean annual temperature, precipitation, and sediment yield using a mean annual temperature of 15 °C (60 °F). Under this temperature regime, maximum sediment yield is predicted at approximately 17-18 inches of annual rainfall because the type of vegetation developed under these conditions is the most conducive to water-related erosion (Langbein and Schumm 1958; Ritter 1986). Although sparse vegetation makes the ground surface highly susceptible to erosion, when annual precipitation falls below 17 inches, sediment yields decrease due to insufficient run-off. Similarly, when effective precipitation reaches above 18 inches, sediment yields are reduced by increased vegetation cover that protects and stabilizes hill slopes and other landforms.

The geologic record of central California suggests that threshold adjustments occurred periodically throughout the late Pleistocene and Holocene, and in many cases were regional in scope. These periods of landscape instability are strongly correlated with transitions reflected in the paleoclimatic record (e.g., Rosenthal and Meyer 2004a). Similarly, periods of both increased and decreased precipitation in central California correspond to intervals of widespread landform stability indicated by extended periods of soil formation during the late Pleistocene, early Holocene, and middle Holocene. The late Holocene geomorphic record is more variable, but also suggests that landscape changes were in large part related to fluctuations in regional precipitation and climate.

Because precipitation, vegetative cover, and topography strongly condition fluvial transport of sediment (e.g., Langbein and Schumm 1958), vastly different potential exists for erosive and depositional forces to have influenced the timing and nature of landscape evolution across the Study Area. Arid regions, such as the Mojave Desert, Great Basin, and eastern Coast Ranges, where vegetative growth has been sparse throughout the Holocene, would have consistently had more sediment available for transport than better-watered and -vegetated

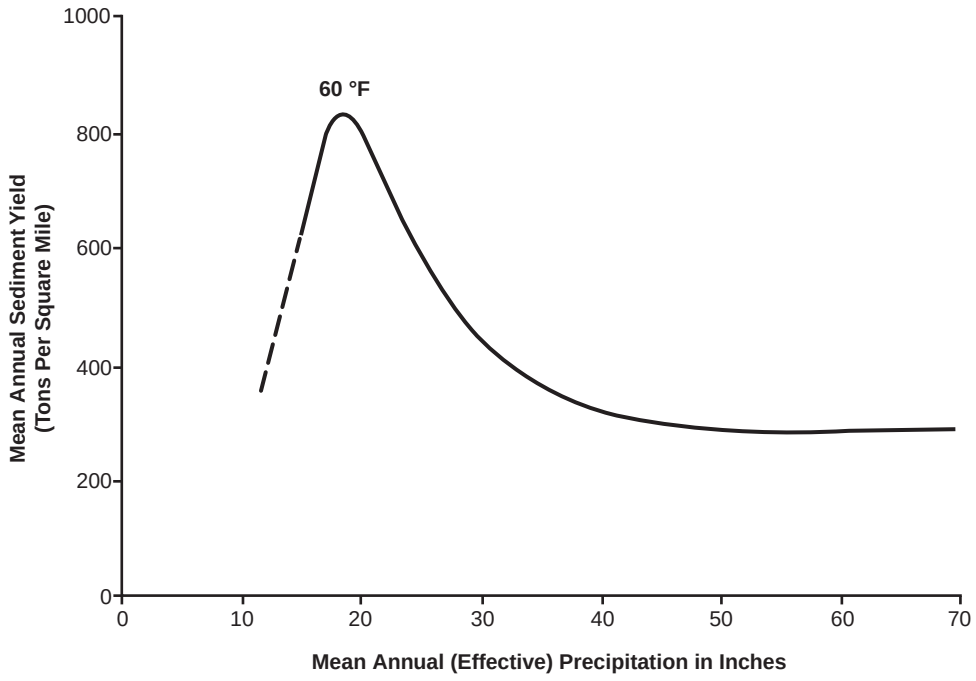


Figure 16. Net Annual Sediment Yield in Relation to Precipitation.

regions, such as the Sierra Nevada. When substantial rainstorms did occur in these arid regions, erosion, fluvial transport, and deposition was probably quite common, resulting in a very idiosyncratic geomorphic record, conditioned by the randomness of local precipitation.

In the Sierra Nevada, precipitation was always higher, resulting in greater vegetation cover which, in turn, served to blanket and bind local landforms, making them less susceptible to erosion and transport of sediment during periods of extreme rainfall. When substantial episodes of erosion and deposition did occur in the Sierra Nevada, it was likely the product of a convergence between changes in vegetative cover and precipitation. As a result, it is expected that sediment deposition in the Sierra Nevada and adjoining San Joaquin Valley would have been greatest during periods of climate change, and therefore would have been regionally synchronous and episodic.

Because arid regions of the Study Area always had reduced vegetative cover, and rainfall was always likely to have been reduced and sporadic due to the rainshadow effect of the Coast Ranges and Sierra Nevada, declines in precipitation due to large-scale climate changes should have had little effect on the geomorphic landscape. However, increases in regional precipitation should have been a significant factor in the evolution of the geomorphic landscape in the arid regions too, resulting in depositional responses similar to those in better-watered portions of the Study Area. As a result, it is likely that major transitions in regional climate are linked to geomorphic responses both east and west of the Sierra Nevada. This, rather than glacial retreat per se, likely explains geomorphic responses recorded on both sides of the Sierra following the last glacial maximum and accompanying the Pleistocene-Holocene transition. It may also explain why cyclical patterns of deposition and landform stability are recorded in both glaciated and unglaciated drainages and continue from the late Pleistocene through the entire Holocene. As discussed in the following section, a climate change model also explains why these episodes of landscape evolution are roughly synchronous across the entire study area.

REFINED SOIL-AGE RELATIONSHIPS, CHRONOSTRATIGRAPHY, AND THE AGE OF SURFACE LANDFORMS

As discussed in the previous chapter, the indiscriminate use of untested (i.e., undated) soil-age assignments has not only blurred and confused a fundamental distinction between Pleistocene and Holocene landforms, it has obscured many other important chrono-stratigraphic relationships as well. This has created serious problems for archaeological studies that must reconstruct former environmental conditions so that patterns of human land use, settlement, and the influence of subsequent landscape changes can be understood. As such, there is a clear need for a new synthesis of landscape evolution in south-central California that attempts to constrain the age of alluvial landforms and the soils formed on them specifically for the purposes of archaeological research and cultural resources management.

It is apparent that the central California landscape has been repeatedly altered and shaped by a complex sequence of large-scale environmental changes. Over the past 20,000 years, this region has experienced the effects of deglaciation, increased aridity, cycles of droughts and floods, as well as human-made changes associated with the historic-era (vegetation replacement, gold mining, and land reclamation). Widespread erosion of the uplands led to the formation of extensive depositional landforms in the lowlands, such as fans, floodplains, and natural levees. The presence of buried soils at the top of multiple alluvial sequences indicates that episodes of sediment deposition were relatively short (annual or decadal scales) compared to long periods of landform stability and soil formation that followed (centennial and millennial scales). Region-wide episodes of alluvial aggradation and stability were accompanied by localized changes in the position and size of stream and river channels, and presumably in the type and distribution of associated plant and animal habitats (e.g., dissected uplands, flood basins, riparian corridors, wetlands), which in turn influenced the location of human settlements. Since many substantial changes occurred during the time that humans first occupied this region, the following section reconstructs the evolution of the landscape by combining previous soil and geologic information with new data generated for this study.

To compensate for the previous lack of temporal control, 65 new radiocarbon dates were obtained from the Study Area (Table 8; Appendix B), and more than 2,400 previously reported radiocarbon dates were compiled into a regional database (provided in Appendix B). All dates and sample locations werelinked to digital soil survey

data (i.e., SSURGO and STATSGO) in a GIS format (see discussion of database and mapping methods in Chapter 6, Buried Site Potential). Through a synthesis and analysis of these radiocarbon dates, this section presents evidence for a refined chrono-stratigraphic framework used to construct a new model of regional landscape change. The discussion is divided into two parts, the first focuses on regions west of the Sierra Nevada, and the second on those parts of the Study Area located to the east. Both discussions are presented in chronological order from oldest to youngest.

SAN JOAQUIN VALLEY AND SIERRA NEVADA

> Then shalt thou count to three, no more, no less.
> Three shalt be the number thou shalt count,
> and the number of the counting shalt be three.
> Four shalt thou not count, nor either count thou two,
> excepting that thou then proceed to three. Five is right out!
> ~ Monty Python and the Holy Grail
> (Scene 33, Holy Hand Grenade of Antioch)

Older Pleistocene (>25,000 cal BP)

Before the last major advance of the Tioga glaciers began about 25,000 years ago, a considerable amount of sediment had already been stripped from the upper slopes of the western Sierra Nevada in response to uplift, channel cutting, and earlier cycles of glacial erosion and outwash (i.e., Tahoe and Tenaya). As a result, large alluvial fans emanating from glaciated and unglaciated drainages were deposited along the eastern side of the San Joaquin Valley and together formed a large pediment-plain (Figure 17 and Figure 18). The size and coarse texture of these older Pleistocene fans reflect the magnitude and geomorphic competence that was achieved during this time period. The nature and extent of older Pleistocene deposits preserved at the modern surface indicate that some large areas have remained relatively stable, while other segments have either been removed by erosion and/or buried by younger deposits, particularly near the axis of the San Joaquin Valley (Lettis 1982; Weissmann et al. 2003).

Many older Pleistocene landforms near the margins of the valley were subsequently incised and dissected by channel and gully erosion, while those near the center of the valley were buried by sediment. Faulting and tectonic uplift of some older Pleistocene deposits increased the pace of surface dissection and channel incision, resulting in the formation of highly eroded landforms like Wheeler Ridge in the southern San Joaquin Valley, and the Elk Hills and Kettleman Hills in the southwestern part of the valley; the latter is composed of uplifted early Pleistocene lakebed sediments (Tulare Formation).

In the glaciated watersheds of the Kaweah, Kern, Kings, Tulare, and San Joaquin rivers, channels in the upper (proximal or fan head) portions of the fans became deeply incised below the surrounding fan surface, effectively "locking" them into the general position they maintain today. A similar pattern of older Pleistocene fan deposition and subsequent fan-head entrenchment is found in virtually every unglaciated watershed along the eastern side of the valley, including Cottonwood, Deer, Dog, Fancher, Poso, Tejon, and Wahtoke creeks, and the Chowchilla, Fresno, Madera, and White rivers. However, no evidence of Tahoe-age or Tenaya-age glacial deposits have been found in the Tulare Lake Basin (Atwater et al. 1986; Davis 1999a), one of the valley's primary depositional centers which, as noted in the previous chapter, may suggest the Kings River flowed northward at this time.

A series of much smaller fans is exposed along the valley's western margin near the base of the hillslopes and mouths of every major stream that drains the Temblor and Coast ranges; the largest is found near Los Gatos, Panoche, and Little Panoche creeks. Because only the upper (proximal) portions of these fans tend to be exposed at the surface, central and lower (medial and distal) portions appear to be buried by younger deposits.

Dates from buried soils in three separate locations indicate that landforms of this age were buried by younger deposits between about 31,340 and 26,352 cal BP, centering on a mean age of about 29,345 cal BP

Table 8. Summary of Radiocarbon Dates Obtained for This Study (Listed by Lab/Sample Number).

Lab or Sample No.	Caltrans Dist.	County, Area or Site Number	Deposit (Type)	Additional Contextual Information	Material Dated	Min.-Max. Depth cm	^{14}C BP and error at 1-sigma	cal BP (med. prob.)	Min. cal BP	Max. cal BP
Beta-255479	6	MAD, Berenda Creek	Buried soil (natural)	3Btb, in E cutbank, eroded top of Greenfield over Riverbank and below Pachappa; min-age for Greenfield	Soil (SOM)	130-150	4570 ± 40	5233	5052	5325
Beta-255480	6	MAD, Chowchilla Canal	Buried soil (natural)	2ABtb, east wall of canal below Fresno soil as mapped	Soil (SOM)	310-330	15,900 ± 70	19,079	18,936	19,281
Beta-255481	6	FRE, N Russell Ave	Buried soil (natural)	1.2 miles N of W Nees Ave, E of N Russell Ave, E wall of canal ~130 meters S of Third Lift Canal	Soil (SOM)	30-40	4230 ± 40	4753	4627	4762
Beta-255482	6	FRE, Fresno Slough	Buried soil (natural)	2Ab below Merced clay in cut W of RR-tracks, S of James Bypass, E of Fresno Slough	Soil (SOM)	80-100	1060 ± 40	971	924	1057
Beta-255483	6	TUL, Tulare River	Buried soil (natural)	2ABkb, in N bank of Tulare River channel below Colpien soil as mapped	Soil (SOM)	280-290	7560 ± 40	8379	8315	8427
Beta-255484	6	KIN, Tulare Lake, Omaha Canal	Buried soil (natural)	2Ab of Lethent below historical lacustrine deposits in S wall of irrigation canal (mapped as Lethent at surface)	Soil (SOM)	70-80	11,930 ± 60	13,793	13,667	13,946
Beta-255485	6	KER, Garces Pit	Buried soil (natural)	2ABkb (top of Garces) in S wall of detention basin below A/C soil, probably Panoche	Soil (SOM)	50-70	1840 ± 40	1776	1695	1875
OS-67051	6	FRE-257, Arroyo Hondo	Buried deposit (cultural)	N-arroyo bank, ~5 m E of bridge, 12 m S of fence	Charcoal	430-450	1700 ± 25	1603	1540	1634
OS-70215	6	FRE, Los Gatos Creek	Buried soil (natural)	Los Gatos Creek, west-side north bank, tree stump at base of terrace	Wood (unknown)	1300-1300	4120 ± 40	4651	4528	4713
OS-70216	6	FRE-61, Wahtoke Creek	Buried soil (natural)	Wahtoke Creek at FRE-61, E bank, 2Ab	Soil (SOM)	190-228	3480 ± 35	3759	3682	3841
OS-70217	6	KER, Salt Creek, S.R. 33	Buried soil (natural)	S.R. 33 Salt Creek Gully, 2Ab	Soil (SOM)	70-80	14,250 ± 75	17,026	16,585	17,461
OS-70220	6	FRE-257, Arroyo Hondo	Buried soil (natural)	Arroyo Hondo, northeast bank, 4Bkb	Soil (SOM)	230-250	26,100 ± 150	31,340	30,896	31,784
OS-70221	6	FRE, Los Gatos Creek	Buried alluvium (natural)	Los Gatos Creek, north-side south bank, "black mat"	Organic Sediment	1050-1050	4060 ± 90	4552	4423	4648
OS-70222	6	KER, Salt Creek, S.R. 33	Buried soil (natural)	S.R. 33 Salt Creek Gully, west bank, 3Ab	Soil (SOM)	120-140	16,600 ± 140	19,701	19,532	19,897
OS-70223	6	KIN-80, Tulare Basin	Buried soil (natural)	2Ab w/cultural, burn layer above sand	Charcoal (sunflower)	130-130	0 ± 10[a]	-4	-5	0
OS-70224	6	KIN-80, Tulare Basin	Buried soil (cultural)	Shell and Charcoal layer at base of canal on west side	Shell-f (freshwater)	240-250	8070 ± 80	8971	8694	9147
OS-70225	6	MAD, Chowchilla River	Buried soil (natural)	Chowchilla River, T1 below Tujunga, s bank, 2Ab	Soil (SOM)	120-140	1260 ± 50	1217	1168	1279
OS-70226	6	MAD, Chowchilla River	Buried soil (natural)	Chowchilla River, T1, base of Tujunga, s bank, Cu	Soil (SOM)	95-110	0 ± 10[a]	-4	-5	0
OS-70227	6	MAD, Firebaugh	Buried soil (natural)	East bank of San Joaquin River, 2Ab below Foster series	Soil (SOM)	75-80	2050 ± 70	2014	1926	2118
OS-70228	6	MAD, Firebaugh	Buried soil (natural)	East bank of San Joaquin River, 4Ab below Foster series	Soil (SOM)	220-240	4570 ± 60	5286	5268	5323
OS-70229	10	MER, Detention Basin	Buried soil (natural)	2ABtkb-horizon exposed in south wall of recently excavated basin, northwest of Ave. 26 and S. Bliss Rd. intersection	Soil (SOM)	150-170	13,100 ± 150	15,158	15,490	15,866
OS-70230	10	MER, Detention Basin	Buried soil (natural)	3ABtb-horizon exposed in south wall of recently excavated basin, northwest of Ave. 26 and S. Bliss Rd. intersection	Soil (SOM)	260-280	21,900 ± 110	26,034	26,352	26,670
OS-70242	6	FRE, Fresno River	Buried soil (natural)	Fresno River, T2, w/n bank, 5Ab	Soil (SOM)	400-420	7020 ± 260	7846	7606	8053
OS-70244	6	FRE, Fresno River	Buried soil (natural)	Fresno River, T2, N bank, 2Ab	Soil (SOM)	130-150	3730 ± 170	4089	3859	4300
OS-70249	6	FRE, Panoche/Silver Creek	Buried soil (natural)	Panoche Creek, burn layer at base of south cutbank	Soil (SOM)	1040-1050	6670 ± 150	7541	7433	7656
OS-70250	6	FRE, Panoche/Silver Creek	Buried soil (natural)	Panoche Creek, buried soil (2Ab) near top of south cutbank	Soil (SOM)	120-140	4150 ± 130	4684	4521	4840
OS-70251	6	FRE-257, Arroyo Hondo	Buried soil (natural)	Arroyo Hondo #1, north bank, 3Bkb	Soil (SOM)	170-190	17,650 ± 220	20,832	20,482	21,240
OS-70857	6	FRE-257, Arroyo Hondo	Buried soil (natural)	South cutbank, 2Ab	Bone (elk)	165-180	0 ± 10[a]	-4	-5	0
OS-71154	6	FRE, Fresno River	Buried soil (natural)	Fresno River, T2, N bank, 3Ab	Soil (SOM)	315-330	4840 ± 20	5592	5581	5609
OS-71155	6	FRE, Fresno River	Buried soil (natural)	Fresno River, T2, N bank, 4Ab	Soil (SOM)	340-360	6060 ± 25	6918	6849	6992
OS-71156	6	FRE, Los Gatos Creek	Buried soil (natural)	Los Gatos Creek, north bank, intact root in lowest Ab	Root	1230-1350	3930 ± 25	4367	4287	4437
OS-71157	6	FRE, Los Gatos Creek	Buried alluvium (natural)	Los Gatos Creek, base of Excelsior terrace, T2	Wood (pine cone)	530-530	3880 ± 20	4331	4246	4409
OS-71158	6	FRE, Little Panoche Creek	Buried soil (natural)	2Ab in south bank below Vernalis series	Soil (SOM)	140-160	5330 ± 25	6104	5999	6193
OS-71160	6	FRE, Panoche/Silver Creek	Buried soil (natural)	Panoche Creek, burn layer near center of south cutbank	Soil (SOM)	665-665	4330 ± 20	4872	4846	4893
OS-71197	6	FRE, Little Panoche Creek	Buried soil (natural)	5(?)Ab in south bank at base of Vernalis terrace	Soil (SOM)	490-510	7390 ± 30	8236	8163	8326
OS-71198	9	INY, Owens Lake, south	Surface deposit (natural)	Packrat midden from incised buried fan north of Highway 178 (178.1)	Packrat Midden	0-1	200 ± 15	168	148	188
OS-71199	9	INY, Owens Valley, Hearth Gully	Buried soil (cultural)	Buried hearth in inset fan west of S.R. 170 (190.1)	Charcoal	50-50	405 ± 20	488	451	510
OS-71200	6	MAD, Cottonwood Creek	Buried soil (natural)	2Ab in west bank of T2 terrace below Hanford series	Soil (SOM)	60-80	1210 ± 20	1131	1064	1179
OS-71201	6	MAD, Firebaugh	Buried soil (natural)	East bank of San Joaquin River, 3Ab below Foster series	Soil (SOM)	110-130	3160 ± 20	3385	3355	3415
OS-71202	5	SBN, Panoche Creek	Buried soil (natural)	Base of Panoche Valley floodplain, ~5Ab in south bank, Patterson Alluvium of Lettis 1982	Soil (with charcoal)	640-660	2820 ± 25	2859	2920	2990
OS-71213	6	FRE, Little Panoche Creek	Buried soil (natural)	From 4ABtb paleosol at base of west bank, Upper San Luis Ranch?	Soil (SOM)	420-440	8390 ± 25	9440	9399	9483
OS-71315	6	MAD, Cottonwood Creek	Buried soil (natural)	3Abtb in west bank at base of T2 Hanford terrace	Soil (SOM)	150-170	1930 ± 15	1878	1858	1902
OS-71316	6	MAD, Cottonwood Creek	Buried soil (natural)	2Ab of Atwater series in south bank of T3 terrace below Hanford series as mapped	Soil (SOM)	80-100	3390 ± 25	3637	3574	3693

Table 8. Summary of Radiocarbon Dates Obtained for This Study (Listed by Lab/Sample Number) *continued*.

Lab or Sample No.	Caltrans Dist.	County, Area or Site Number	Deposit (Type)	Additional Contextual Information	Material Dated	Min.-Max. Depth cm	^{14}C BP and error at 1-sigma	cal BP (med. prob.)	Min. cal BP	Max. cal BP
OS-71317	5	SLO, Cuyama River	Buried deposit (cultural)	Burn layer (hearth?) in south bank of gully, north of river, south of S.R. 166	Charcoal	250-260	175 ± 15	167	185	217
OS-71414	6	FRE-257, Arroyo Hondo	Buried soil (natural)	Arroyo Hondo, northeast bank, 4Bkb below Millham (1 of 2 dates on same sample?)	Soil (SOM)	230-250	14,450 ± 60	17,365	16,909	17,789
OS-71416	6	MAD, Cottonwood Creek	Buried soil (natural)	3Abtb in south bank of T3 terrace below Atwater series (too young?)	Soil (SOM)	210-230	3620 ± 20	3929	3867	3982
OS-72582	6	FRE, San Joaquin River	Buried soil (natural)	2Ab in south cutbank below Wunjey soil as mapped (T3? Terrace)	Charcoal	170-190	130 ± 30	128	57	275
OS-72583	9	INY, Owens Lake, south	Lacustrine (natural)	5Cg, Strat II, upper lacustrine in E wall of gully	Soil (SOM)	180-190	9310 ± 50	10,514	10,371	10,609
OS-72584	9	INY, Owens Lake, south	Lacustrine (natural)	6Cg, Strat I, lower lacustrine in E wall of gully	Soil (SOM)	220-240	9230 ± 55	10,396	10,250	10,522
OS-72698	9	INY, Owens Valley, Horton Creek	Buried soil (natural)	2Ob, W wall of T2 terrace below site/soil buried by Torriofluents	Peat (peaty clay)	105-115	4490 ± 35	5167	5038	5297
OS-72699	6	KIN, Tulare Lake, 10th St Canal	Buried soil/lacustrine (natural)	2Akb, desiccated lake soil, W wall of 10th St. Canal, below Tulare clay	Soil (SOM)	100-130	7530 ± 40	8358	8299	8411
OS-72700	6	KIN, Tulare Lake, 10th St Canal	Lacustrine (natural)	3Cg, uppermost lacustrine in W wall of 10th St. Canal, below Tulare clay	Soil (SOM)	160-190	8970 ± 40	10,161	10,118	10,230
OS-72701	6	KIN, Tulare Lake, Omaha Canal	Buried soil (natural)	3Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	135-145	11,800 ± 85	13,656	13,435	13,820
OS-72702	6	KIN, Tulare Lake, Omaha Canal	Buried soil (natural)	5Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	165-175	11,550 ± 85	13,394	13,241	13,614
OS-72752	9	INY, Owens Lake, south	Lacustrine (natural)	2Cg, uppermost buried lacustrine shell/death bed, south lakeshore	Bone (fish)	370-400	7440 ± 75	8263	8154	8395
OS-72794	6	KER, Kern River Terrace	Buried soil (natural)	2Ab below Hesperia as mapped, N-wall of T3 terrace, north of river and county road	Soil (SOM)	160-170	2270 ± 70	2246	2157	2262
OS-72823	6	MAD, Berenda Creek	Buried soil (natural)	2Ab of Pachappa series in E cutbank above Greenfield (Pachappa mapped at surface incorrect)	Soil (SOM)	80-100	3010 ± 120	3208	3059	3360
OS-72826	9	INY, Owens River Bluff	Buried soil (natural)	2Cu, carbon layer, S bank of T3 terrace below sand layer mapped as Mazourka-Eclipse; same age as lithofacies 4a of Bacon	Soil (SOM)	150-160	12,650 ± 220	14,873	14,292	15,232
OS-72830	6	FRE, Tumey Gulch	Buried soil (natural)	2Abkb in N bank of gulch below Millham soil as mapped	Soil (SOM)	80-100	8790 ± 50	9816	9602	9955
OS-72831	6	FRE, Tumey Gulch	Buried soil (natural)	3Ab near top of south cutbank below Guijarrel soil as mapped	Soil (SOM)	60-70	22,400 ± 200	26,926	26,412	27,440
OS-72832	6	FRE, Tumey Gulch	Buried soil (natural)	5Abtkb (?), base of south cutbank below Guijarrel soil as mapped	Soil (SOM)	610-620	11,150 ± 65	13,051	12,926	13,184
OS-72855	9	INY, Owens Lake, south	Buried soil (natural)	3Ab, Strat. IV, E wall of gully, stratum underlies buried hearth	Soil (SOM)	120-130	5950 ± 40	6778	6677	6883
OS-73065	6	TUL, Tulare River	Buried soil (natural)	3Abkb, in N bank of Tulare River channel below Colpien soil	Soil (SOM)	330-350	7010 ± 50	7848	7722	7946
OS-73445	6	KIN, Tulare Lake, Omaha Canal	Surface deposit	Whole shell in growth position at contact of Cu horizon with 2Ab	Shell-f (Anodonta)	50-60	200 ± 20	177	145	215
OS-73446	6	KIN-32, Witt Locality	Buried lacustrine (natural)	Snail from intact dune sand 2A/Cox contact below disturbed sand with paleo-artifacts, N bank of Blakely Canal	Shell-f (gastropod)	45-50	2250 ± 30	2232	2156	2266

Notes: [a] Arbitrary 1-Sigma of ±10 years used to calibrate "modern" dates; SOM – Soil Organic Matter; Min – Minimum; Max – Maximum; Med. Prob. – Median probability.

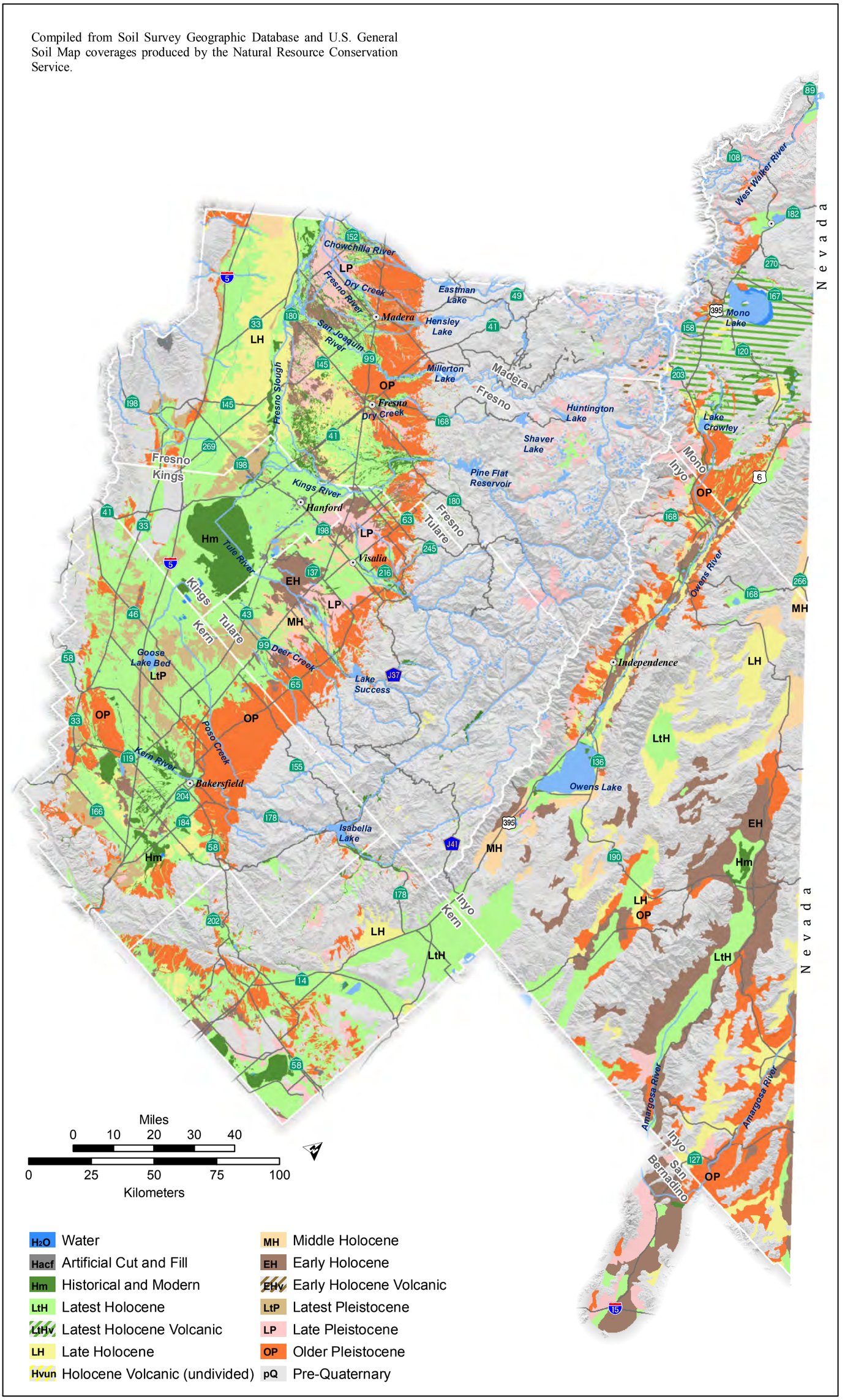


Figure 17. Depositional Landforms and Buried Archaeological Potential in Caltrans District 6/9.

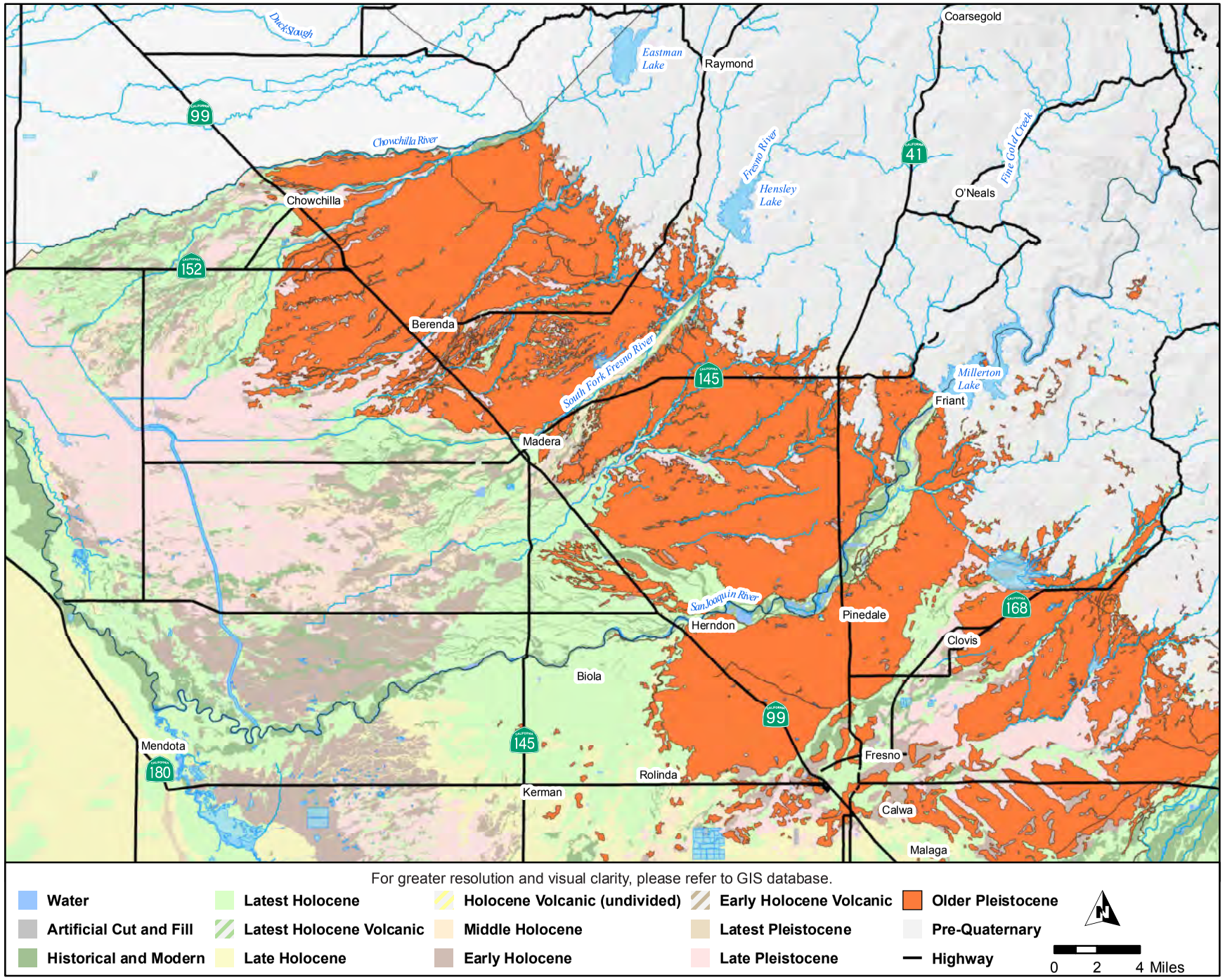


Figure 18. Older Pleistocene Fans Emanating from Glaciated and Unglaciated Drainages along the Eastern San Joaquin Valley.

(Table 9). The oldest of these (31,340 cal BP, OS-70220) was obtained for this study from a well- developed buried soil (4Bkb) exposed in the bank of Arroyo Hondo Creek in western Fresno County (Figure 19), where the surface soil is mapped as Millham series. The youngest date (26,352 cal BP, OS-70230) was likewise obtained for this study from a well-developed buried soil (3ABtb) exposed in a recently excavated detention basin near the Madera/Merced county line where the surface soil is mapped as Traver series (Figure 19). The remaining three dates were obtained from buried soils along the Cuyama River in eastern San Luis Obispo County by Delong and Arnold (2007), where the Panoche-series soil is mapped at the surface. The age and nature of these buried soils suggest that the inter-glacial period between the Tahoe/Tenaya and Tioga glaciations was dominated by land stability and soil formation.

Table 9. Summary of Radiocarbon-Dated Buried Soils from Study Area by Time Periods.

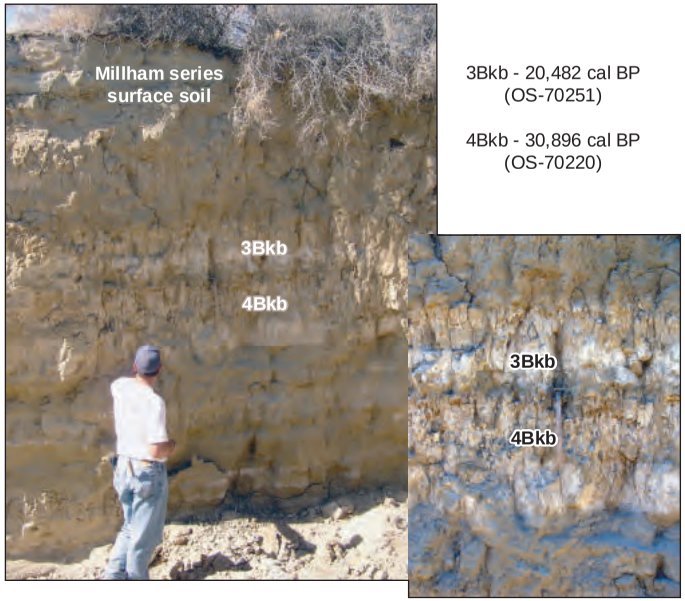
	Older Pleistocene	Late Pleistocene	Latest Pleistocene	Early Holocene	middle Holocene	Late Holocene	Latest Holocene
Minimum cal BP	26,352	15,029	11,624	7085	4089	2014	128
Mean cal BP	29,343	18,525	12,955	9081	5456	2913	1075
Maximum cal BP	31,340	20,832	13,835	11,321	6994	3929	1985
Std. Dev. (years)	2211	2133	816	1188	896	625	526
Sample Count (n=152)	5	7	11	30	25	25	49
Percent of Total	3.3%	4.6%	7.2%	19.7%	16.4%	16.4%	32.2%

Late Pleistocene (~25,000 to 15,000 cal BP)

During the last glacial maximum, the growth and movement of glacial ice was accompanied by intense weathering and mechanical erosion that stripped and transported large amounts of rock and other coarse sediments into the upper reaches of each glacial drainage, resulting in the deposition of glacial till, terminal and lateral moraines, and outwash terraces (Burke 2003; Gillespie and Zehfuss 2004; Kaufman et al. 2004; Matthes 1960; Wahrhaftig 1984; Wahrhaftig and Birman 1965). These processes also produced fine-grained sediments that were carried down slope on an almost continual basis by seasonal melt water, and more occasionally during periodic flood events caused by episodes of rapid melting, increased precipitation runoff, and/or failures of ice-dams or morainal ridges.

While much of this sediment presumably made its way to the valley floor, buried soils dated between about 20,000 and 19,000 cal BP on the Tuolumne River fan and within the axial San Joaquin River basin indicate that landform stability, soil formation, and channel incision prevailed between about 25,000 and 20,000 cal BP as the ice sheet advanced and reached its maximum extent. This suggests that most channels were not filled and overwhelmed by the initial pulse of glacial outwash, but were largely able to contain these sediments which were either deposited in enclosed basins, such as Buena Vista and Tulare lakes (Atwater et al. 1986), or were removed ("flushed") from the valley floor via the axial San Joaquin River. Though the channels were apparently large enough and/or competent enough to contain and transport initial loads of outwash, after 20,000 to 19,000 cal BP the amount of sediment appears to have increased and essentially exceeded the carrying capacity of these channels, particularly in the lower reaches of most drainages. As a result, most of the outwash associated with deglaciation filled existing basins and channels prior to spreading out laterally over the surface of adjacent fans and floodplains (Weissmann et al. 2003; Weissmann et al. 2005).

Radiocarbon evidence suggests that the initial depositional pulse was completed in 2,000 years or less, probably between about 18,500 and 16,500 years ago, as indicated by a mean age of 18,525 cal BP from seven well-developed buried soils at separate location in the Study Area (Table 9). A soil buried by the Traver series near the Merced/Madera county line produced the youngest of these dates (15,500 cal BP). The 2,000-year time frame for deposition is consistent with geomorphic models that show the release and reworking of glacially conditioned sediment is usually exhausted within 2,000 years or less (Ballantyne 2002a, 2002b). These dates also confirm that late Pleistocene-age landforms were buried in valleys west of the Sierra crest, with the oldest dating to 20,830 cal BP (OS-70251) at Arroyo Hondo Creek in western Fresno County (Figure 20). From this it appears that



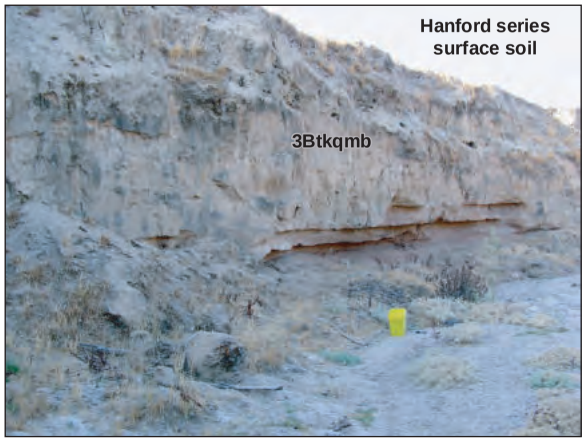
Arroyo Hondo Creek Bank Exposure, Fresno County



Truncated Hardpan (2Btkqmb) in South Bank
of Kings River Near Reedly, Kings County



Buried Soil Exposed in Wall of Detention
Basin, Near Madera/Merced County Line



Truncated Hardpan (3Btkqmb) Exposed in South Bank
of Cottonwood Creek, Madera County



Very Well-Developed Soils at Madera Lake,
View to West, Madera County



Overview Detention Basin to Northwest,
Near Madera/Merced County Line

Figure 19. Selected Views of Older Pleistocene Deposits in the San Joaquin Valley.

Figure 20. Selected Views of Late Pleistocene Deposits in the San Joaquin Valley.

landscape elements relaxed to a state of non-deposition and relative stability by the time the Tioga glacial cycle was completed, which is consistent with the model of paraglacial landscape response proposed by Ballantyne (2002a, 2002b).

It is both telling and significant that late Pleistocene-age landforms are not nearly as well represented on the San Joaquin Valley floor as older Pleistocene landforms, but are instead relatively small and isolated. The largest and most extensive late Pleistocene surface deposits lie north and south of the San Joaquin River, just east of the valley's active depositional center (Figure 21). Other sizable areas occur along the valley's eastern side between the towns of Dinuba and Porterville, where these deposits form moderate-size alluvial fans that originate near the base of older Pleistocene fans (see Figure 17). However, the overall paucity of such surfaces suggests that either the magnitude and extent of late Pleistocene deposition have been greatly overestimated, post-glacial erosion has gone largely unrecognized and underappreciated, or landforms from this period were largely buried by younger sediments, in which case the amount and distribution of post-glacial deposits (i.e., Holocene) have been greatly underestimated and under-reported.

Latest Pleistocene (15,000 to 11,500 cal BP)

The environmental transition from glacial to non-glacial conditions brought with it fundamental transformations in plant and animal communities and substantial alterations in hydrologic and geomorphic systems that promoted landform instability in glaciated and unglaciated areas alike. The transition is marked by a series of relatively rapid climatic fluctuations that resulted in the advance and retreat of Recess Peak glaciers, between about 14,200 and 13,100 cal BP, and an overall reduction in temperature during the Younger Dryas cooling interval, between about 12,900 and 11,500 cal BP. The Recess Peak glaciation was, however, much smaller and short-lived than the previous Tioga glacial cycle, and the environmental influence of the Younger Dryas was also relatively short and subtle overall (Porinchu et al. 2003; Potito et al. 2006). This "transition" does not represent a unidirectional shift in environmental conditions as a whole, but is characterized by greater climatic variability and more heterogeneous responses that mark a period of increased environmental disequilibrium. This likely accelerated the rate of erosion and deposition as landforms and associated vegetation attempted to adjust to rapidly fluctuating conditions. As a result, latest Pleistocene-age landforms are even more prevalent and widely represented at the surface of the San Joaquin Valley floor than late Pleistocene-age landforms.

The largest and most continuous areas of latest Pleistocene surface deposits are found in and around the Tulare Lake Basin, which includes the lower Los Gatos Creek fan (i.e., "Lethent fan") to the northwest, and the lower portions of other east-side fans to the southwest, with Buttonwillow Ridge and Semi Tropic Ridge being part of the latter (Figure 22). Smaller and more discontinuous deposits occur along the valley's western margin, where they form alluvial fans, and just east of the Elk Hills where the lower Kern River fan appears to have blocked ("dammed") the north end of Buena Vista Lake Basin (see Figure 17).

Within the study area, 11 radiocarbon dates from latest Pleistocene-age buried soils range from about 13,835 cal BP (Beta-137204) to 11,625 cal BP (GX-13338), with a mean age of 12,955 cal BP. The majority (~54.5%), however, form a distinct cluster between about 13,900 and 13,000 cal BP (see Table 9). Among this group are buried soils from wide-spread locations including Nichols Meadow in Madera County (Koehler and Anderson 1994), Boggy Meadow in Tulare County (Wood 1975) the Sierra Foothills near Sonora (i.e., the Greenstone site [TUO-4557] in Meyer et al. 2008; Rosenthal 2008) and the Cuyama River in eastern San Luis Obispo County (Delong and Arnold 2007). Also relevant for this period is a date of 13,570 cal BP (Beta-14299) from basal channel deposits in the Stanislaus River Canyon (Peak and Crew 1990), which indicates a net decrease in runoff and waterflow occurred after that time.

Five latest Pleistocene dates were obtained from the western (distal) part of the Los Gatos Creek alluvial fan which lies near the center of the San Joaquin Valley in Fresno and Kings counties (Figure 22), one from a previous study (Milliken and Young 2000) and four specifically for this study. This fan is mapped in the Lethent soil series and extends around the northwestern side of Tulare Lake Basin where it appears to mark the lake's outer limit. To help determine the age of the Lethent fan, dates were obtained from three subsurface strata exposed along Omaha Canal Road, near the lake's former northwestern shore (Figure 23).

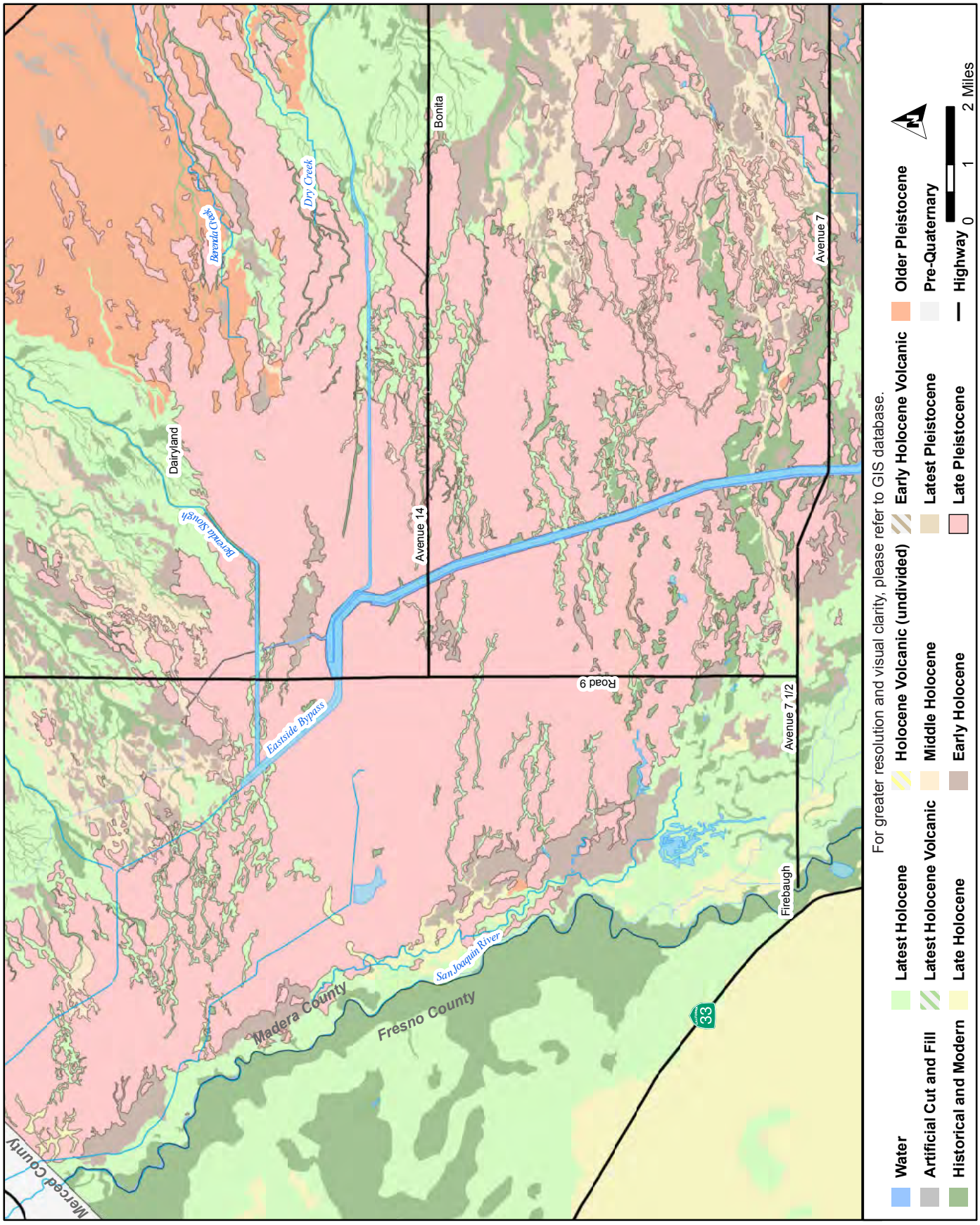


Figure 21. Late Pleistocene Fan and Basin Deposits in the Eastern San Joaquin Valley.

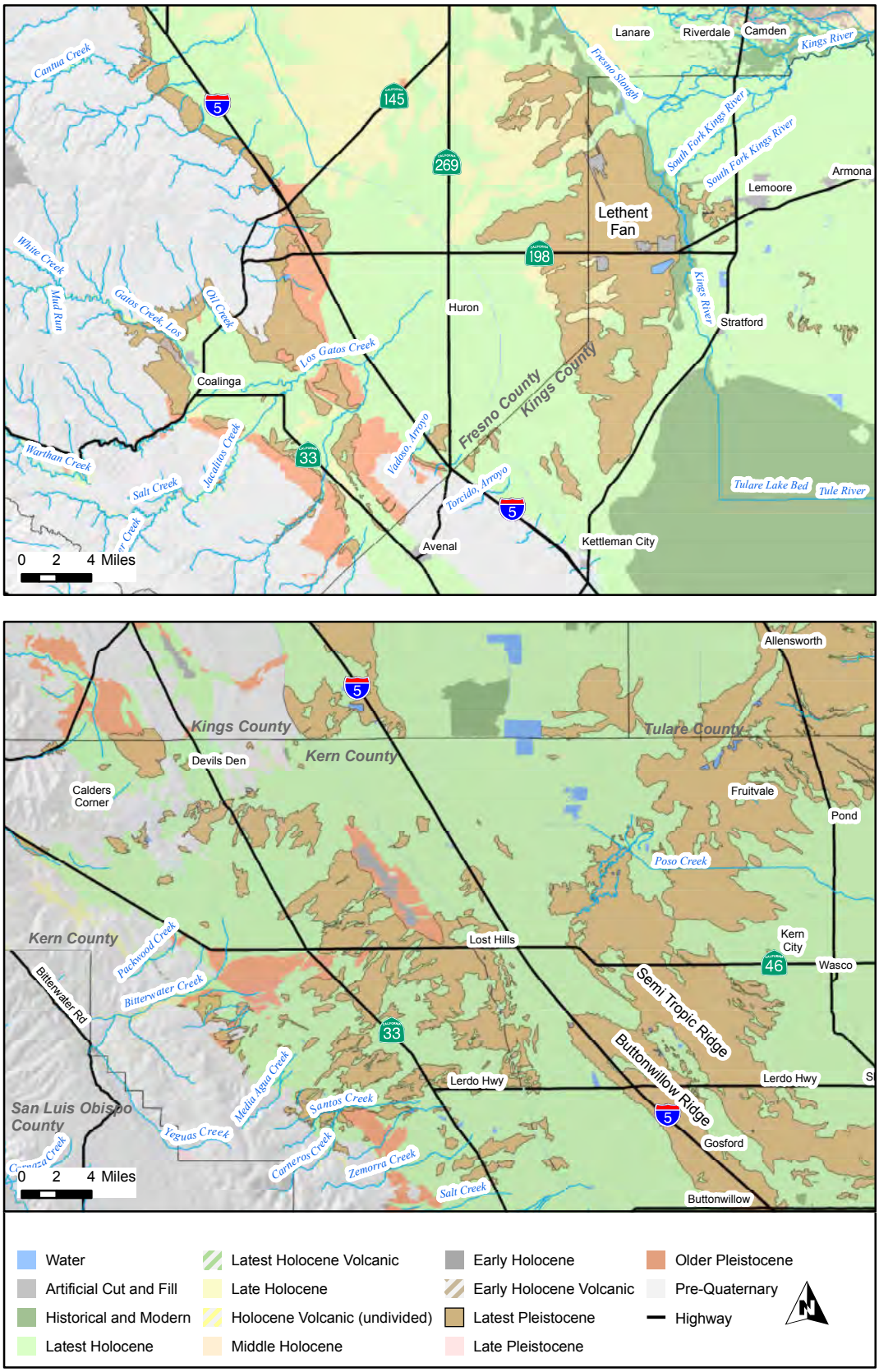
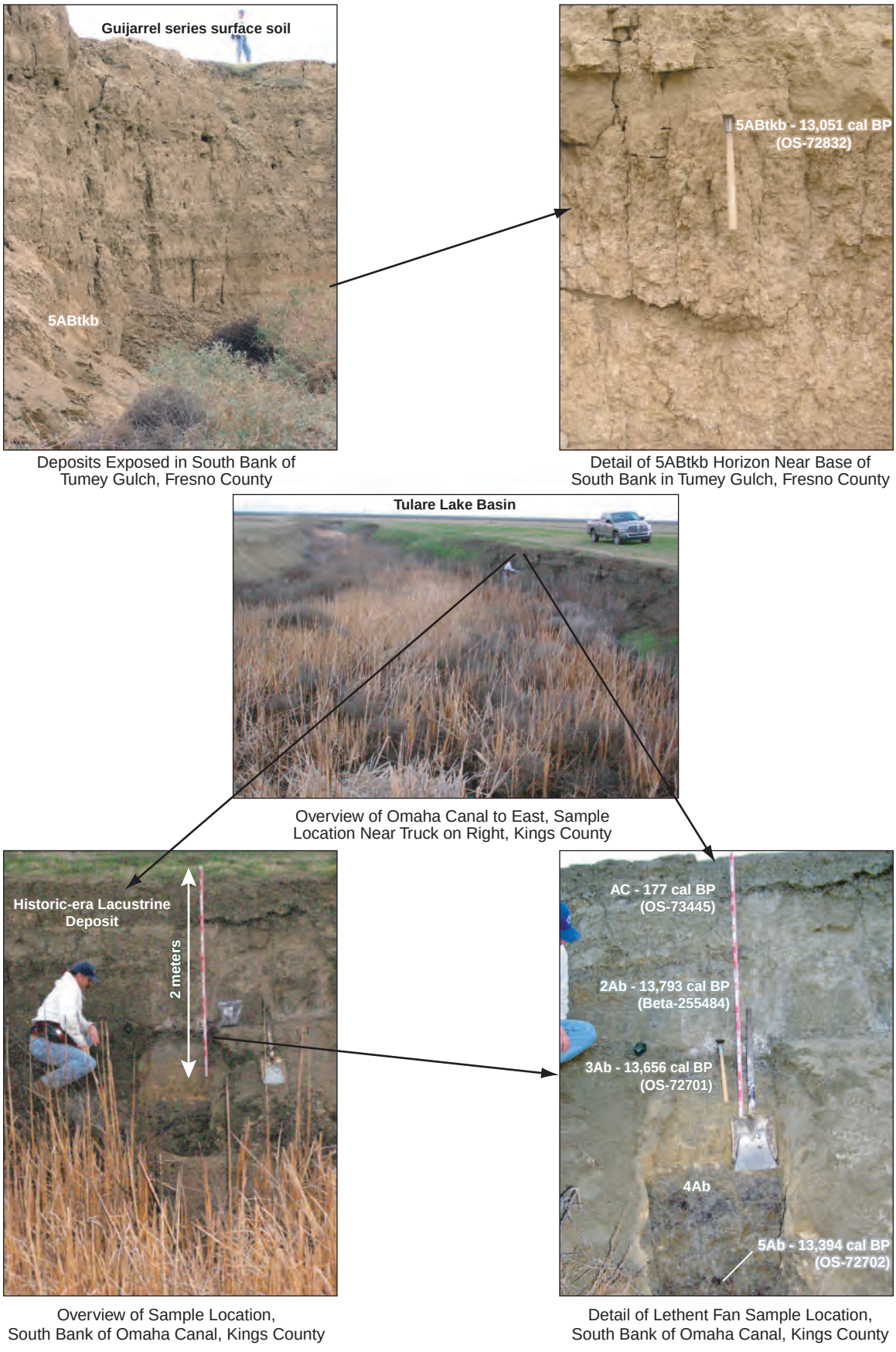


Figure 22. Latest Pleistocene Fan and Basin Deposits in the Western (top) and Eastern (bottom) San Joaquin Valley.



Deposits Exposed in South Bank of Tumey Gulch, Fresno County

Detail of 5ABtkb Horizon Near Base of South Bank in Tumey Gulch, Fresno County

Overview of Omaha Canal to East, Sample Location Near Truck on Right, Kings County

Overview of Sample Location, South Bank of Omaha Canal, Kings County

Detail of Lethent Fan Sample Location, South Bank of Omaha Canal, Kings County

Figure 23. Selected Views of Radiocarbon-Dated Latest Pleistocene Deposits in the San Joaquin Valley.

It was found that the surface of the Lethent fan in this location is buried by a deposit of lacustrine clay that dates about 175 cal BP (OS-73445) based on a freshwater shell date of 200 ± 20 14C BP (no local reservoir correction applied). Soil samples from the buried Lethent fan surface and from two more deeply buried soils (3Ab and 5Ab) produced dates that range from about 13,795 to 13,395 cal BP (Beta-255484 and OS-72702, respectively). Although the samples are in reversed stratigraphic order (see Figure 23), it is evident that multiple episodes of deposition occurred on the distal part of the Lethent fan during the latest Pleistocene, and that the fan subsequently remained stable until the early Historic-era when it was finally capped by lacustrine sediment. The latter finding is important because it suggests that Tulare Lake reached its highest stand(s) during the latest Holocene to Historic-era, and not during the late Pleistocene or early Holocene as suggested by Atwater et al. (1986) and Negrini et al. (2006), respectively.

Notably, a similar date of 13,050 cal BP (OS-72832) was obtained from a well-developed soil (5ABtkb) buried by more than six meters (20 feet) of alluvium below the surface of the Tumey Gulch fan in western Fresno County (see Figure 23). This buried soil and those from the Lethent fan offer compelling proof that large amounts of sediment were delivered to the valley floor in the latest Pleistocene, and that a substantial part of this sediment was derived from the unglaciated western side of the valley.

The age and nature of these deposits suggest that land stability, soil formation, and channel incision generally prevailed during the time of the Recess Peak glacial advance, as landscape elements continued to relax from glacial conditions. By the time of the Recess Peak de-glacial phase, between about 13,600 and 13,100 cal BP, evidence shows that sediments began to accumulate within high elevation meadows, major river canyons, and at low elevations as alluvial fan and basin deposits on the San Joaquin Valley floor (see Figure 23). The stratigraphic sequence derived from the Lethent fan demonstrates that alluvium was being deposited in the Tulare Basin during the time that a purported "gap in sedimentation" or major erosional event is recognized elsewhere in the basin (Atwater et al. 1986; Davis 1999a). Lacustrine deposits that overlie distal parts of the Lethent fan suggest that earlier high lake stands did not attain the elevations reached during the latest Holocene to Historic-era (Negrini et al. 2006), further indicating that the history of Tulare Lake is out of phase with lake basins in eastern California.

It appears that environmental change during the last-half of Pleistocene-Holocene transition (~13,500 to 12,500 cal BP) was sufficiently rapid, intense, and widespread to destabilize landforms and generate a major pulse of deposition. The very presence of buried latest Pleistocene-age landforms indicates that many were subsequently overlain by younger Holocene-age deposits. A comparison of latest Pleistocene radiocarbon dates from buried and surface contexts illustrates that only about one-third (~33%) of dated late Pleistocene-age deposits occur at the present surface (Figure 24).

Early Holocene (11,500 to 7000 cal BP)

As the Pleistocene gave way to the Holocene, the Younger Dryas cooling interval ended and the transition from glacial to non-glacial conditions came to a close. Unlike the variability of the latest Pleistocene, the early Holocene marks a unidirectional shift toward warmer and drier conditions that was more homogeneous overall. As the warming and drying progressed incrementally, it reduced the vegetative cover on the landscape and caused many lakes, marshes, and springs to contract or disappear altogether, which forced associated plant and animal communities to adjust accordingly. As a consequence, the surface of most pre-existing landforms remained relatively stable and subject to soil formation as the rate of landscape change slowed. Reduced amounts of runoff concentrated the flow of water within existing channels, and caused many to become deeply incised and/or to migrate and erode laterally. This likely destabilized landforms adjoining channels, making them vulnerable to bank undercutting, slope bank failures, and head-ward gully erosion. As these processes continued, large amounts of sediment were either transported through the channels, or were made available for later transport. Thus, erosional and depositional processes became more localized during this time as the loci of both were shifted to more discrete segments of the landscape.

The limited distribution of early Holocene-age landforms at the surface of the valley floor (see Figure 17), and the number and extent of early Holocene-age buried landforms reflect this pattern. Surface deposits of

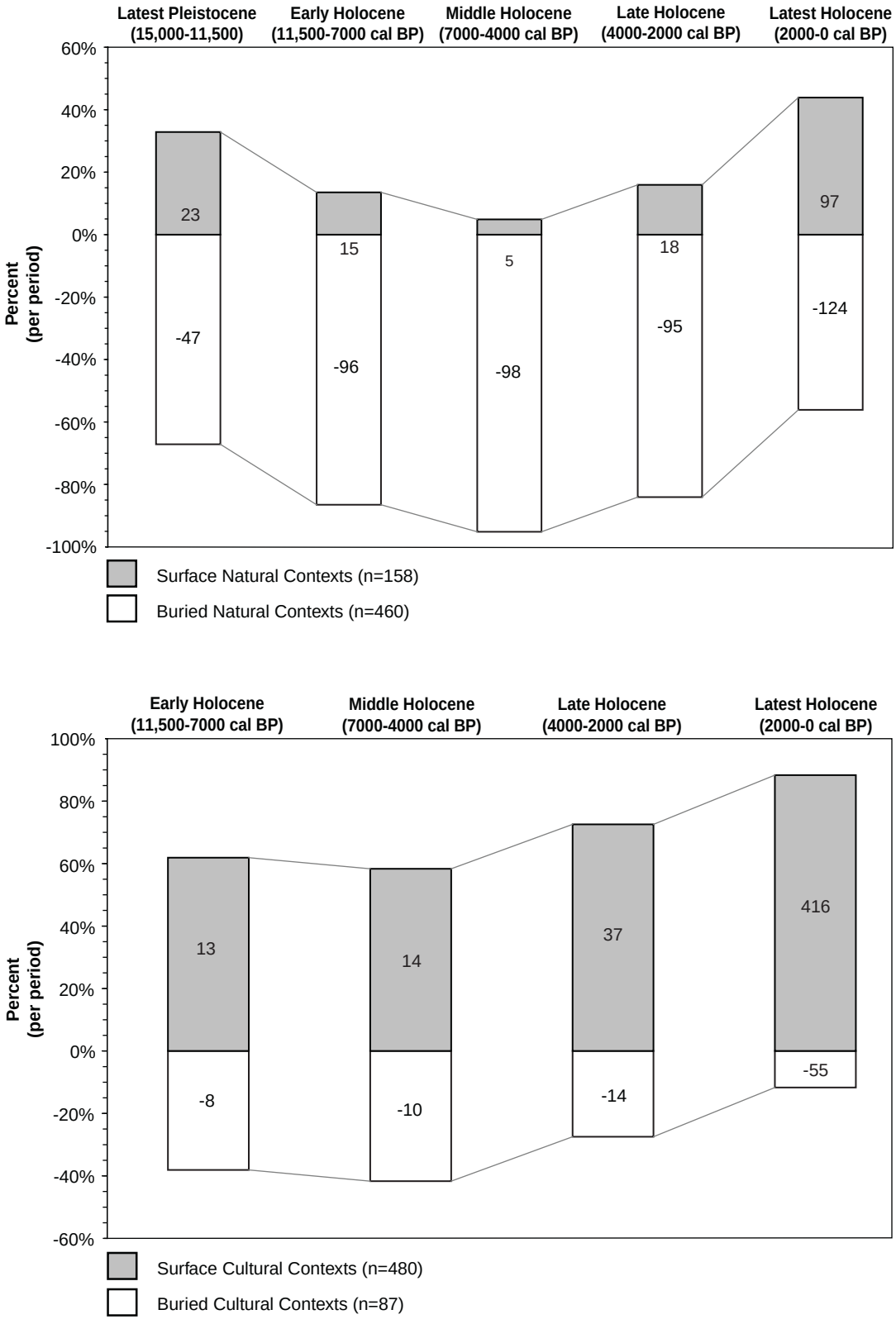


Figure 24. Count and Percent of Buried and Surface Natural (top) and Cultural (bottom) Contexts by Major Time Periods.

this age are most extensive and continuous north and south of the lower San Joaquin River, just east of the valley's central trough (Figure 25) and on the central (medial) part of fans formed along the lower Kaweah and Tulare rivers, just east of Tulare Lake (see Figure 17). Small surface deposits are also found on the central (medial) part of the Kings River fan, and around the margins of the Kern/Buena Vista Lake basin, at the San Joaquin Valley's southern end. This distribution clearly shows that most early Holocene surface deposits occur on the east side of the valley where they tend to form the central or lower parts of alluvial fans, or lie along the margins of basins such as Fresno Slough and Kern/Buena Vista Lake.

At least 30 early Holocene dates have been obtained on buried soils from locations in and near the Study Area. These dates range from about 11,320 cal BP (GX-13339) to 7085 cal BP (Beta-170151), with an overall mean age of about 9080 cal BP (see Table 9). Nearly three-quarters (n=22, 73%) fall between about 9800 and 7500 cal BP, and more than one half (n=17, 56.6%) occupy smaller clusters of about 9800 to 9300 cal BP and about 8300 to 7800 cal BP (Figure 26). These originate from a number of diverse environmental settings, including high elevation meadows in the Sierra Nevada (Koehler and Anderson 1994; Moratto 1984; Peak and Neuenschwander 1991; Wood 1975), alluvial fans and low-angle hillslopes in the Sierra Foothills (Dillon 1992; Meyer and Dalldorf 2004; Meyer et al. 2008), and alluvial fans, floodplains, and basins in the San Joaquin Valley (Davis 1999a; Negrini et al. 2006; Young 2003).

A date from freshwater mussel shell obtained for this study (8070 ± 80 BP, or 8971 cal BP, OS-70224) at archaeological site KIN-80 is associated with a discrete layer of cultural material (i.e., shell, charcoal, burnt bone, and chert flakes) buried at a depth of about 2.45 meters (8.04 feet) below the present ground surface (Figure 27). Apart from being buried, KIN-80 is important as one of the oldest cultural deposits so far identified in the San Joaquin Valley, and the presence of freshwater shell confirms that a lake was present in the basin during the early Holocene. The age of this deposit closely matches the buried cultural stratum identified at KER-116 along the shores of Buena Vista Lake, where the next oldest cultural date (8379 cal BP; LJ-1356) from the valley was obtained on freshwater mussel shell (Fredrickson and Grossman 1977).

An episode of early Holocene deposition is recognized within Tulare Lake Basin, where lacustrine sediments dating to 10,160 cal BP (OS-72700) are unconformably overlain by desiccated lake clay showing soil development, dating to about 8355 cal BP (OS-72699; Figure 27). A buried soil of similar age was also identified on the nearby Tulare River fan, between the towns of Corcoran and Tipton. In this location, two vertically stratified buried soils are overlain by surface soils of the Colpien series (Figure 27). The lower 3ABkb horizon yielded a date of 8379 cal BP (Beta-255483), matching the date from Tulare Basin, while the overlying 2ABkb horizon produced a date of about 7850 cal BP (OS-73065). The latter period of soil development is, in turn, matched along the Fresno River near the base of the Sierra foothills (Figure 27), where a nearly identical date of about 7845 cal BP (OS-70242) was derived from the deepest of five buried soils (5Ab). A date from the overlying soil (4Ab) at that location indicates that the early Holocene surface was buried before about 6920 cal BP (OS-71155). These examples demonstrate that two widespread, early Holocene buried soils are present on the eastern side of the San Joaquin Valley dating to about 8500 and 7800 cal BP, respectively, separated by an intervening period of deposition.

Evidence for early Holocene land stability and subsequent deposition can also be found within many alluvial landforms on the western side of the valley. At Tumey Gulch, for example, deposition is constrained between 13,050 cal BP (OS-72832) and 9815 cal BP (OS-72830) based on dates from a deeply buried soil (5ABtkb) and an overlying moderately developed buried soil (2Abkb); the later buried soil also indicates that deposition in this locality occurred sometime again after 9815 cal BP (Figure 27). A similar period of stability and deposition is also represented along Little Panoche Creek, where a well developed buried soil (4ABtb) was dated to about 9440 cal BP (OS-71213; Figure 27).

Further down Little Panoche Creek, a weakly developed soil near the base of the alluvial terrace dates to 8235 cal BP (OS-71197), while the overlying buried soil (2Ab) dates to about 6100 cal BP (OS-71158), indicating that deposition resumed and ceased within that time span (Figure 27). This matches a depositional episode along the Fresno River on the eastern side of the valley. Another example of substantial early Holocene deposition is found along Panoche Creek, where a date of about 7540 cal BP (OS-70249) was obtained from a burn layer exposed near the base of an alluvial terrace, now more than ten meters (33 feet) below the surface (Figure 27).

Figure 25. Early Holocene Fan and Basin Deposits in the Eastern San Joaquin Valley.

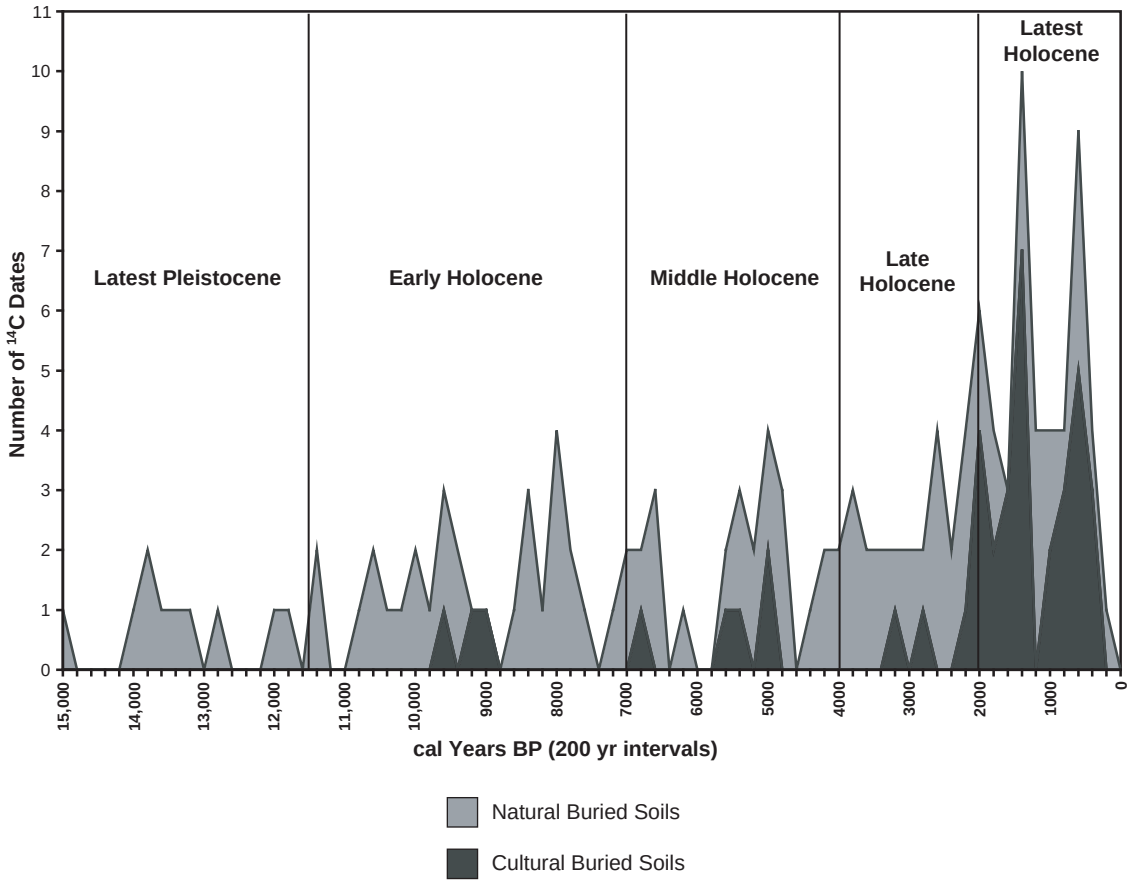
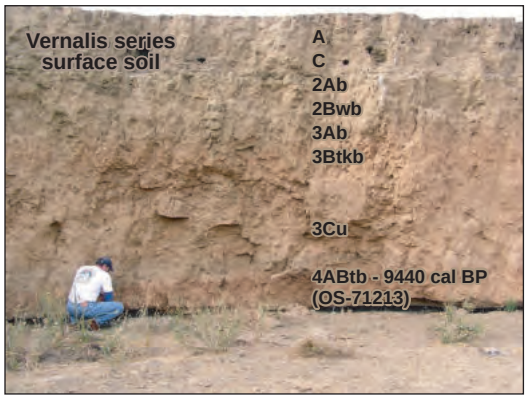
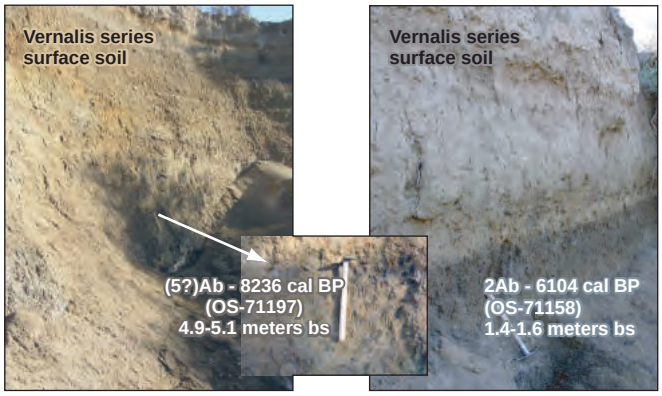


Figure 26. Age and Frequency of Radiocarbon Dates from Buried Soils Associated with Natural and Cultural Contexts in District 6/9.



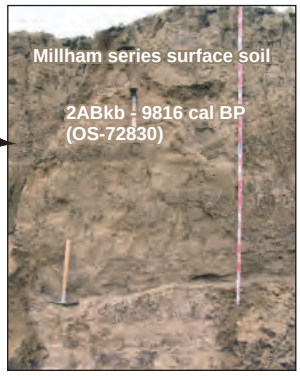
West Bank of Upper Little Panoche Creek, Western Fresno County



Sample Locations in South Bank of Lower Little Panoche Creek, Western Fresno County



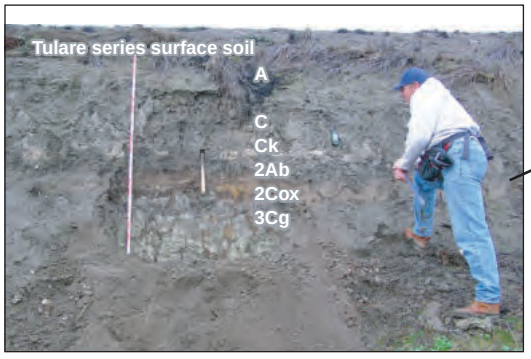
North Bank of Tumey Gulch in Western Fresno County to Southwest



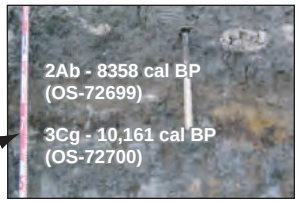
2ABkb Horizon at 80-100 cm in Tumey Gulch, Fresno County



Burn Layer in South Bank of Panoche Creek Terrace, Fresno County



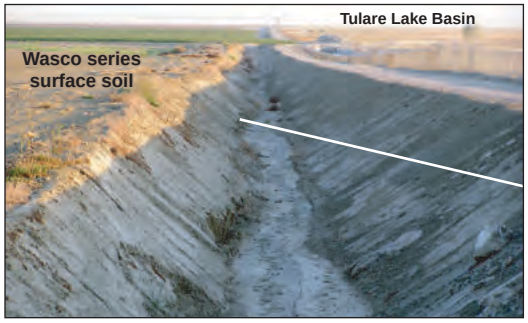
Buried Soil (2Ab) and Lacustrine Deposits (3Cg) in West Bank of 10th Street Canal, Kings County



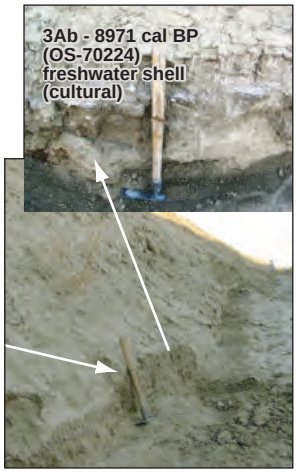
Detail of 10th Street Canal Deposits, Kings County



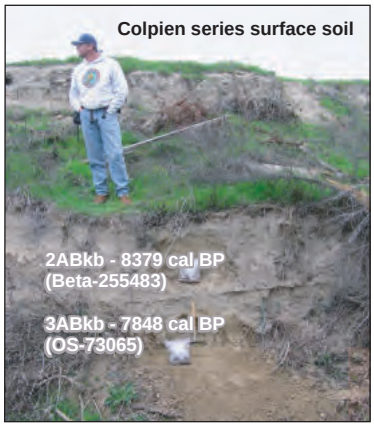
Burn Layer 10.4-10.5 Meters Below Panoche Creek Terrace



Drainage Canal Intersecting Former Shoreline of Tulare Lake at KIN-80 to North, Kings County



Early Holocene Cultural Deposits at KIN-80, 2.4-2.5 Meters Depth



Buried Soils in Northwest Bank of Tulare River, Tulare County

Figure 27. Selected Views of Radiocarbon-Dated Early Holocene Deposits in the San Joaquin Valley.

These examples show that land stability and soil formation was the dominate process on both side of the San Joaquin Valley during the early Holocene, with widespread buried soils dating about 9800 to 9400 cal BP, 8500 to 8200 cal BP, and 7800 to 7500 cal BP. Substantial depositional episodes occurred between these stable periods burying many early Holocene land surfaces. Sediment deposition occurred mainly around the margins of large basins and on the lower portions of alluvial fans and floodplains on both sides of the valley. Because the region was clearly occupied by people during this time, it is also likely that early Holocene-age archaeological sites in these settings were buried as well.

Middle Holocene (7000 to 4000 cal BP)

The climatic conditions of the middle Holocene have long been characterized as distinctly warmer and drier than today, based on studies from the Great Basin and Desert Southwest (Antevs 1955; Baumhoff and Heizer 1965). While some Sierra records support this view (e.g., dendrochronologic, paleohydrologic), pollen and macrofossil evidence indicates that conditions were cooler and wetter between about 7000 and 4000 cal BP (Anderson 1990; Anderson and Smith 1994; Davis et al. 1985; Davis and Moratto 1988; Davis et al. 1976; Koehler and Anderson 1994; Wood 1975; Woolfenden 1996). The nature and extent of landscape changes during this interval are further complicated as middle Holocene-age landforms only rarely occur at the surface. Despite a lack of consensus, the combined evidence suggests environmental conditions of the middle Holocene were variable and complex. The presence of submerged tree stumps beneath the waters of Lake Tahoe, dated between about 5,700 and 5,400 cal BP (Lindström 1990), however, provides proof of aridity and the extreme climatic variability of the middle Holocene.

As noted in a previous chapter, the middle Holocene represents a conspicuous "gap" in the stratigraphic record of Central California as no deposits of this age have been identified by previous geological studies in this region, either buried or at the surface (see Table 3, e.g., Hall 1984; Harden and Marchand 1980; Marchand and Allwardt 1981). However, middle Holocene radiocarbon dates from buried stratigraphic contexts are relatively common in this region (see Table 8). Included among these are 25 dates from buried soils identified in floodplains and meadows of the Sierra Nevada (Goldberg and Skinner 1990; Koehler and Anderson 1994; Peak and Neuenschwander 1991); alluvial fans and low-angle hillslopes in the Sierra foothills (Meyer and Dalldorf 2004; Meyer et al. 2008); alluvial fans, floodplains, and basins in the San Joaquin Valley (Atwater et al. 1990; Culleton et al. 2001; Gardner et al. 2005; Negrini et al. 2006; with most from this study); and a fault-related sag pond near the Tejon Pass (Madden and Dolan 2008). Most of these dates (n=17, 68%) range between about 6400 and 4500 cal BP (see Figure 26), with a mean age of about 5455 cal BP overall (see Table 9).

A period of widespread deposition at the beginning of the middle Holocene is evinced by the burial of early Holocene surfaces at several locations within the Study Area. A buried soil (2Ab) exposed below the surface of an alluvial terrace along Little Panoche Creek yielded a date of about 6100 cal BP (OS-71158). A slightly older date of 6920 cal BP (OS-71155) was obtained from a buried soil (4Ab) exposed in an alluvial terrace along the Fresno River in eastern Fresno County (Figure 28). These two buried soils were found above early Holocene surfaces dated to 8235 and 7845 cal BP, respectively, suggesting that a period of deposition occurred in this region after about 7800 years ago, but before 6900 years ago. Along the Fresno River, a second middle Holocene buried soil (3Ab), dated about 5590 cal BP (OS-71154), was also identified, matching the age of a buried land surface near Firebaugh in the San Joaquin Valley proper (Figure 28). In this locality, a buried soil (4Ab) exposed near water level in an alluvial terrace on the eastern side of the San Joaquin River produced a date of about 5285 cal BP (OS-70228). Likewise, a nearly identical date of 5235 cal BP (Beta-255479) was obtained from a truncated buried soil (3Btb) exposed along Berenda Creek near Chowchilla (Figure 28), also in the San Joaquin Valley. These localities on the eastern side of the valley suggest that a period of widespread middle Holocene land stability prevailed, following an initial period of deposition.

In western Fresno County, the channels of Panoche and Los Gatos creeks have become deeply incised, creating a series of extensive natural exposures that provide evidence for the rate and timing of middle Holocene deposition on the western side of the Valley (see Figure 28). Dates obtained from a large cut-bank near the confluence of Silver Creek with Panoche Creek indicate that more than five meters (16 feet) of sediment were

Figure 28. Selected Views of Radiocarbon-Dated Middle Holocene Deposits in the San Joaquin Valley.

deposited there between about 4870 cal BP (OS-71160) and 4685 cal BP (OS-70250) over an interval of less than 200 years. A similar pattern was found at Los Gatos Creek where more than seven meters (23 feet) of sediment were deposited between about 4650 cal BP (OS-70215) and 4330 cal BP (OS-71157) over an interval of no more than 320 years. The date of 4650 cal BP and another of 4365 cal BP (OS-71156) were obtained on wood from buried tree stumps rooted in formerly stable land surfaces (see Figure 28). Notably, the latter date is almost the same as 4330 cal BP (OS-71157) from a gray pine cone embedded in unweathered alluvium along the same creek (see Figure 28).

In addition, a thin mat of carbonized organic materials, buried more than ten meters (33 feet) below the surface of the Los Gatos Creek terrace (see Figure 28), appears to mark a very brief episode of plant growth at around 4550 cal BP (OS-70221). Further, one of the few middle Holocene-age archaeological sites identified in the study area was found along this same stretch of Los Gatos Creek (Atwater et al. 1990), buried at a depth of about seven meters (23 feet) below surface. It dates to about 5270 cal BP (C-1424).

Radiocarbon dates from buried land-surfaces along both Panoche and Los Gatos creeks, clearly demonstrate that extensive deposition occurred on the western side of the San Joaquin Valley between about 4800 and 4300 cal BP, delivering as much as five to ten meters (16 to 33 feet) of sediment in a period of just 200 to 300 years. As the depositional landform map developed for this study shows (see Figure 17), there are very few areas in the San Joaquin Valley where middle Holocene-age landforms are represented at the present surface. However, a moderate-size area is found in the lower drainage of Little Panoche Creek (western Fresno County), where soils of the Chateau, Deldota, and Paver series are mapped at the surface. A date of about 4755 cal BP (Beta-255481) from the Bk horizon of the Deldota soil confirms the middle Holocene age of these soils. Other middle Holocene-age surfaces occur along the lower drainages of the Kaweah and Tule rivers on the eastern side of the valley (Tulare County), mapped as having surface soils of the Akers and Tagus series (Figure 29). The age of these soil series was inferred based on geomorphic position and the type and degree of soil development compared to neighboring soil units.

In each of these areas, middle Holocene deposits form the central (medial) portions of alluvial fans generally occupy an intermediate position between older and younger deposits (i.e., early Holocene or more, late Holocene or less). Smaller and more isolated middle Holocene surfaces also occur along the eastern side of the valley in Fresno and Madera counties (mainly Pachappa Series at surface), where they form small alluvial fans, and stream terraces, and appear to fill small abandoned stream channels.

Overall, middle Holocene surface landforms are the least represented and the most spatially restricted of all those exposed at the surface of the San Joaquin Valley. In combination with evidence for extensive deposition toward the end of this period, the narrow distribution of these surfaces explains why no specific middle Holocene deposits or correlative stratigraphic units have previously been identified in the region (see Table 3; Hall 1984; Harden and Marchand 1980; and Marchand and Allwardt 1981).

These examples clearly show that the nature, pace, and magnitude of middle Holocene landscape changes varied greatly from one area to another. The assembled radiocarbon and stratigraphic data suggest that this interval is bracketed by at least two major depositional pulses: the earliest was between about 7000 and 6800 cal BP, and the latest centered between about 4500 and 4300 cal BP. During the intervening 2,200-year period (~6800 to 4500 cal BP) most or all landforms were essentially stable and passively undergoing soil development.

This paints an emerging picture of the middle Holocene as a time of environmental transition in which climates grew more variable and shifted more abruptly than during the early Holocene. While the overall trends may have been toward warmer and drier conditions and landscape stability, the substantial depositional episodes that bracket this interval require greatly increased and/or sustained levels of precipitation for sediment transport to occur at such a large scale. It also appears that most middle Holocene landforms have been buried. These surfaces tend to occur in relatively low landscape positions (e.g., incised arroyos and channels, inset terraces, distal fans, and basin rims) and have since became depositional loci for younger sediments (Meyer and Dalldorf 2004; Meyer et al. 2008; Meyer and Rosenthal 2008). Because of this, we expect that many middle Holocene archaeological sites are also buried in the same geomorphic settings where these buried soils tend to be preserved. The upper stratum at site KIN-80 is one such example, dated to about 4955 cal BP (Beta-167852). It lies buried along the

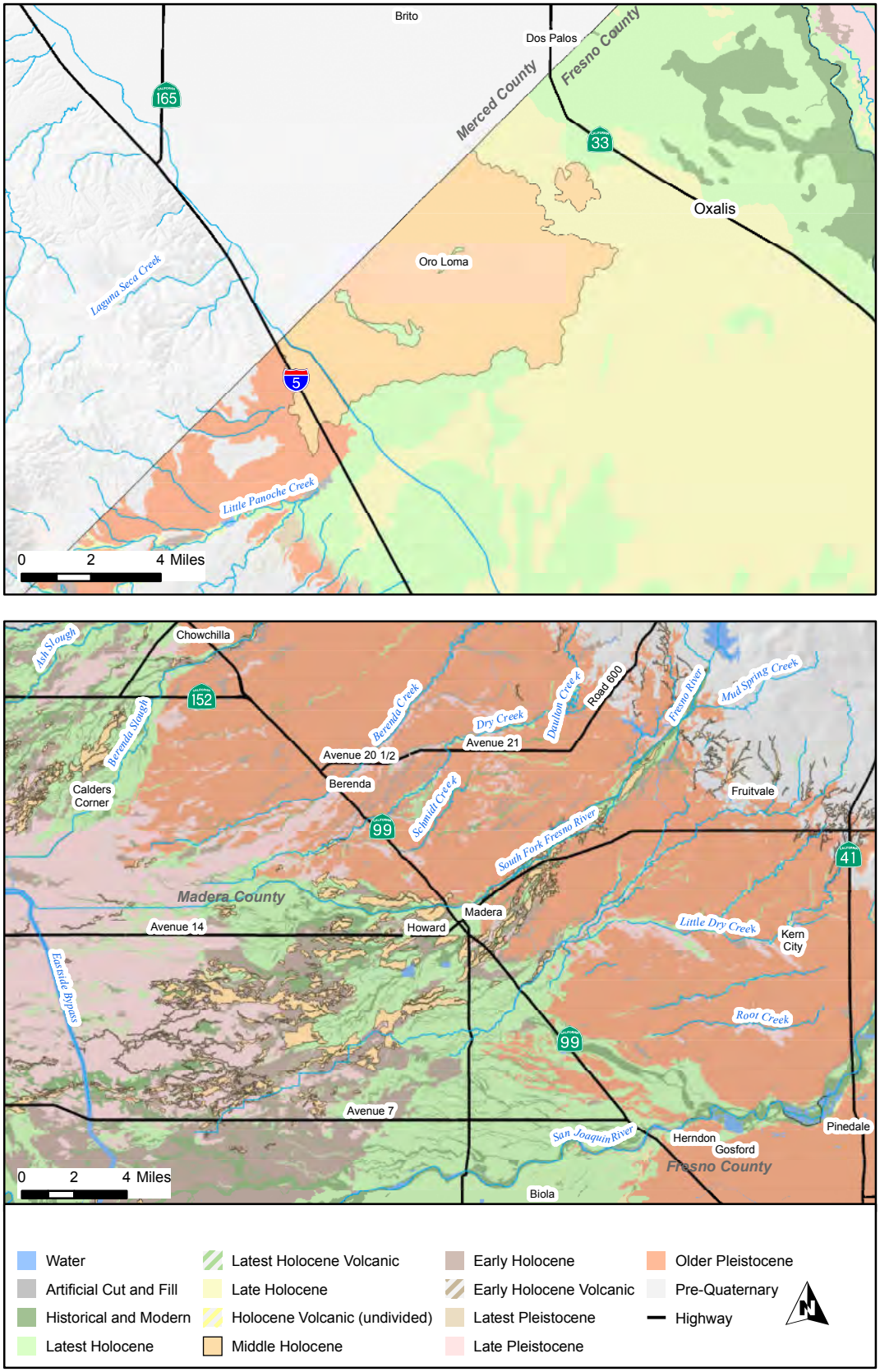


Figure 29. Middle Holocene Fan and Basin Deposits in the Western (top) and Eastern (bottom) San Joaquin Valley.

western rim of Tulare Lake Basin beneath more than 1.5 meters (4.9 feet) of alluvium (Gardner 2003; Gardner et al. 2005). Together, the Los Gatos Creek site and KIN-80 are the only middle Holocene sites so far identified in the lower San Joaquin Valley.

Late Holocene (4000 to 2000 cal BP)

Unlike the two previous intervals of the Holocene, climate during the late Holocene was generally cooler and wetter, thus heralding a transition to the mesic conditions that prevail today (West 2000). This overall trend is widely reflected in pollen records from high and low elevations on both sides of the Sierra Nevada (Anderson 1990; Anderson and Smith 1994; Benson et al. 2002; Davis 1999a, 1999b; Davis and Moratto 1988; Davis et al. 1985; Edlund 1991; Goman and Wells 2000; Jones and Waugh 1997; Koehler and Anderson 1994; Malamud-Roam et al. 2006; Smith 1979; Smith and Anderson 1992; Stine 1990; Wells and Goman 1995; West 1993, 2005; Wood 1975), in tree-ring and plant macrofossil records of the southern Sierra Nevada (Anderson 1990, 1994; Anderson and Smith 1997; Scuderi 1987), and Bristlecone Pine records from the White Mountains (Berkelhammer and Stott 2008; Ferguson 1970; LaMarche 1974).

Evidence of increased precipitation and runoff during this interval is recorded by high lake stands throughout the otherwise arid Great Basin and Mojave Desert regions, such as Mono and Owens lakes (Benson et al. 2002; Stine 1990), Searles Lake (Smith 1979), Silver Lake (Enzel et al. 1989, 1992), Walker Lake (Benson et al. 2002), Lower Pahranagat Lake and Diamond Pond (Wigand and Rhode 2002), as well as other lakes throughout the American West (Harrison and Metcalfe 1985). Together these records indicate that significant and widespread flooding occurred in the region between about 4000 and 3600 cal BP. Sediments within the Tulare Lake Basin also record a high stand during the first part of the late Holocene, but a low stand occurred around 2200 cal BP, marking a period of drought toward the end of this interval (Davis 1999a; Negrini et al. 2006).

These changes are also reflected in the depositional history of many alluvial fans and floodplains in central California, where multiple episodes of late Holocene deposition are recognized (Rosenthal and Meyer 2004a, 2004b). Roughly synchronous periods of fan and floodplain deposition are also documented on the western slope of the Sierra (Meyer and Dalldorf 2004) and in the Sacramento Valley (Meyer and Rosenthal 2008; White 2003b). Buried soils dating to the late Holocene are most commonly centered at about 2900 cal BP based on 25 radiocarbon dates from locations throughout the region (see Table 9). These records and others from around central California show that landform changes accelerated during the late Holocene as cooler/wetter conditions initially increased the amount of available sediment through erosion, and elevated the capacity of rivers and streams to carry these sediments downstream. The net result was widespread sediment deposition and the formation of new alluvial landforms. The continuation of cooler/wetter conditions eventually led to greater plant growth and vegetative cover which allowed landforms to become more stable, thus slowing the rate of landscape changes well before 2000 cal BP.

Based on the soil-age assignments of this study, late Holocene surface deposits are present on the east and west sides of the San Joaquin Valley, mainly in Fresno County, and at the valley's southern end in Kern County (see Figure 17). The largest and most continuous surface deposits occur along the western side of the valley where they form distal alluvial fans and basin deposits near the valley's main trough (Figure 30). Soils at the surface of these landforms are mapped as Calflax, Ciervo, Lillis, Tranquility, and Wekoda and consist mainly of clay, with Calflax clay loam being the only exception. The maximum age of the Calflax series is constrained by a date of about 4685 cal BP (OS-70250) from a buried soil (2Ab) immediately beneath the Calflax soil, and a second date of about 4870 cal BP (OS-71160) from the 2Cu-horizon in which the buried soil had formed, both from an alluvial terrace near the confluence of Panoche and Silver creeks in Fresno County (Figure 31). Other soil-ages were inferred based on their geomorphic position and the type and degree of soil development compared to neighboring soils radiocarbon-dated to the latest Holocene (i.e., Cerini, Excelsior, Panoche, and Posochanet series). Because these fan and basin deposits consist of sediments derived from western hill slopes, where the modern climate is normally arid, the large size and extent of these landforms suggest they formed at a time when rainfall and runoff levels were much higher than today, and possibly higher than the early and middle Holocene.

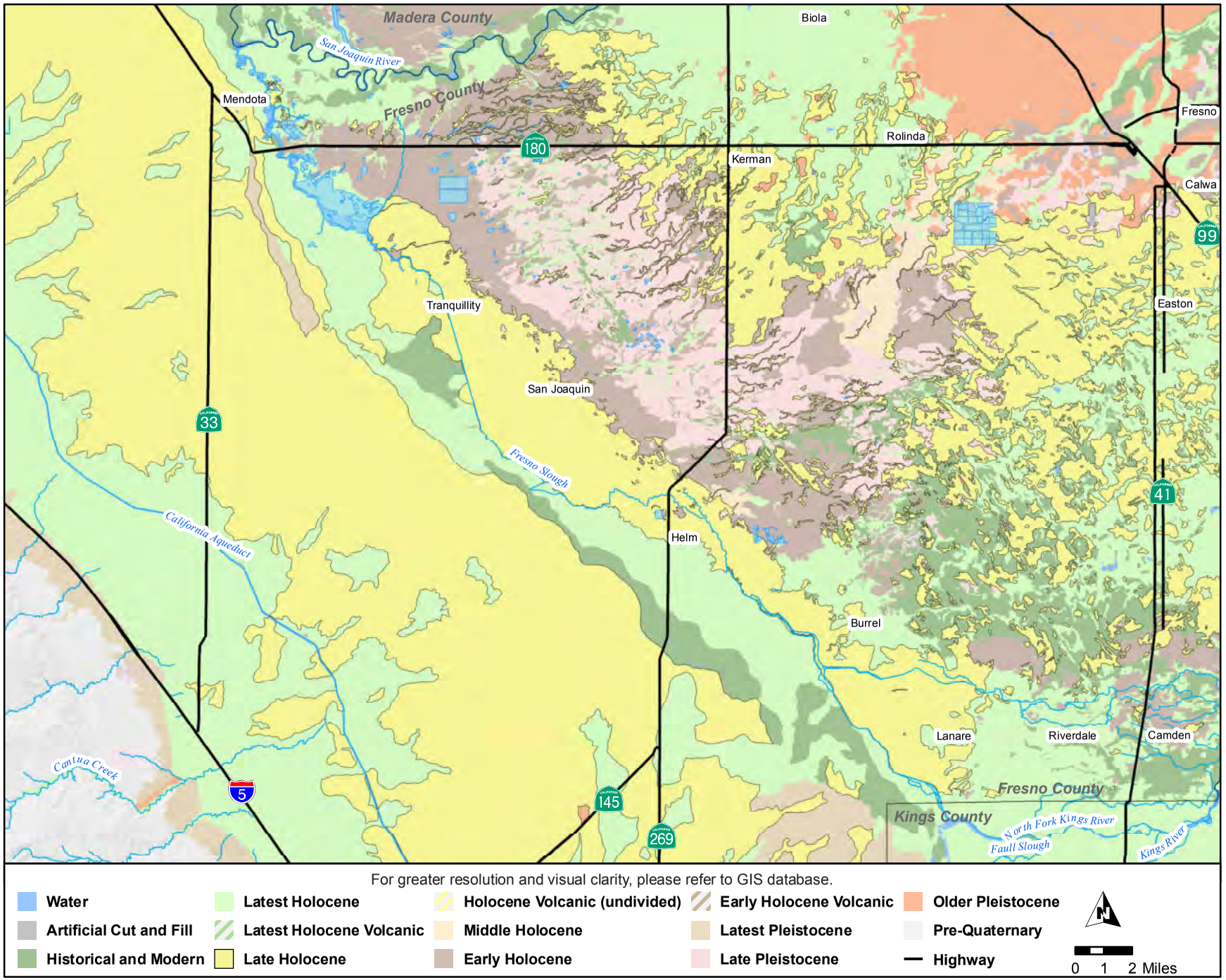
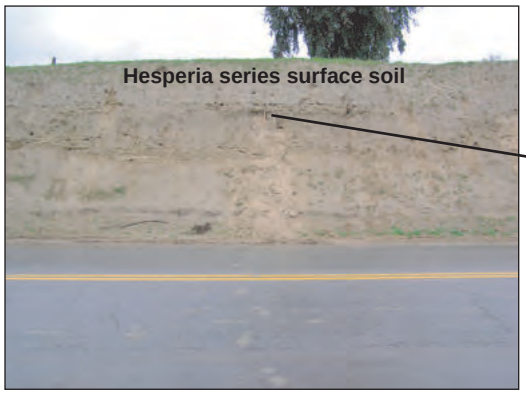
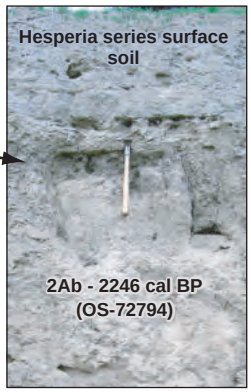
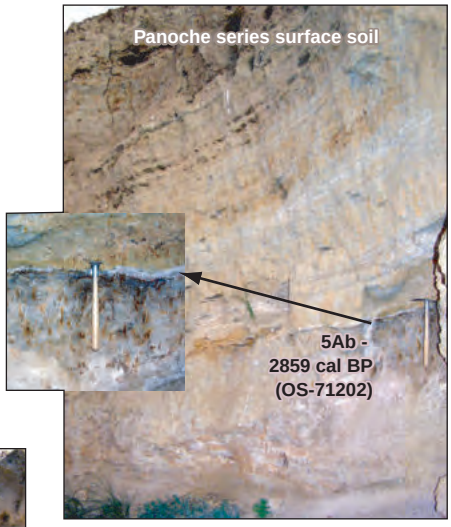


Figure 30. Late Holocene Fan and Basin Deposits in the Western San Joaquin Valley.



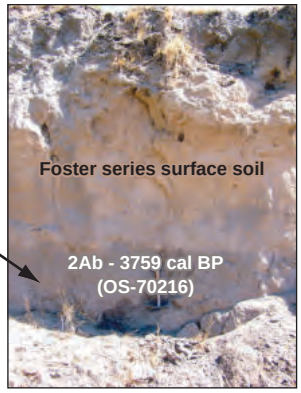


Sample Location in Fan/Terrace North of Kern River, Kern County

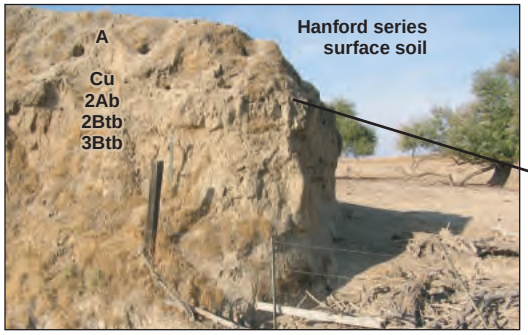


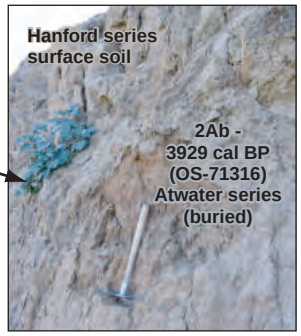
Sample Location at ~6.5 Meters Below South Bank of Panoche Creek Terrace, San Benito County, Near Fresno County Line (above)





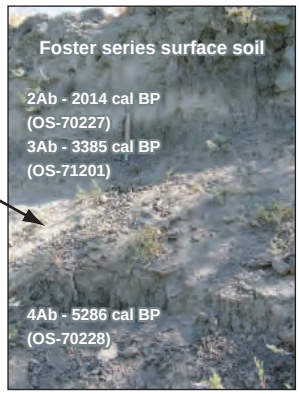
Sample Location in South Bank of Wahtoke Creek at FRE-61, Fresno County (above)





Deposits Exposed in South/East Bank of Cottonwood Creek, Madera County





Sample Location Near Firebaugh in East Bank of San Joaquin River, Fresno County

Visalia series surface soil



Sample Location (above and below) in Fan/Terrace North of Fresno River, Fresno County

Visalia series surface soil

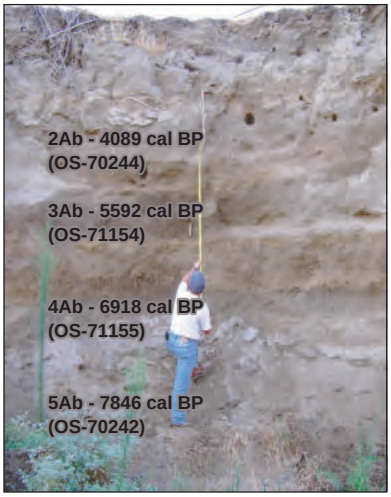


Figure 31. Selected Views of Radiocarbon-Dated Late Holocene Deposits in the San Joaquin Valley.

Along the eastern side of the valley trough, late Holocene deposits occur at the surface in an elongated area, where they occupy basin and floodplain positions (see Figure 30). Here the surface soils are mapped as the Altaslough, Merced, and Temple Series which are composed of fine-grained alluvium (mainly clay or clay loam). The minimum age of the Merced series is constrained by a date of about 970 cal BP (Beta-255482) from the A-horizon of this soil where it was buried (i.e., 2Ab) by younger deposits within Fresno Slough (see Figure 31). The ages of the Altaslough and Temple series were inferred based on their geomorphic position and degree of soil development, which is similar to the Merced series, and on comparisons with neighboring soils radiocarbon-dated to the latest Holocene (e.g., Chino and Grangeville series). While previous researchers have associated the Merced and Temple soils with both latest Pleistocene and Holocene landforms (see Table 6), we conclude that they are most likely late Holocene in age.

Because late Holocene deposits on the eastern side of the valley consist of sediments derived mainly from the Sierra Nevada, the size of these landforms again suggests they were deposited under conditions of greater rainfall and runoff. The extent and position of these landforms further suggest they were formed mainly by outwash from the Kings River fan, and were deposited within a basin created in part by blockage (damming) of the normal drainage outlet by sediments deposited near the town of Mendota (see Figure 30).

Late Holocene deposits also occur at the surface along the San Joaquin River west of Fresno, where they form small and segmented alluvial fans, floodplains, and stream terraces with soils of the Hesperia series. The age of the Hesperia Series is based on 15 radiocarbon dates obtained almost exclusively from cultural surface deposits at sites outside the San Joaquin Valley. These dates range from a maximum of about 3290 cal BP (Beta-158024) at INY-5275/H, to a minimum of only 130 cal BP (Beta-112083) at INY-3769 (Appendix B). Two dates below Hesperia soils, however, are from natural buried contexts, including one of about 5265 cal BP (USGS-0607) from Antelope Valley (Kern County), and one of about 2245 cal BP (OS-72794) from a buried soil (2AB) exposed in a terrace along the Kern River near Bakersfield (see Figure 31). Although the maximum surface date and minimum buried date from this soil series overlap by about 1,000 years, the best fit of all dates indicate that landforms with Hesperia soils date to the late Holocene in most areas, but may be latest Holocene in age (<2245 cal BP) in some regions (i.e., Kern River terrace). Like other soils, the Hesperia series has also been associated with both latest Pleistocene and Holocene landforms by previous studies (see Table 6).

Late Holocene deposits are found in portions of the Kern and Buena Vista Lake basins at the southern end of the San Joaquin Valley, where they form smaller and less continuous alluvial fan, floodplain, and basin deposits. These landforms have soils of the Calflax, Hesperia, Tupman, and Zalvidea series mapped at their surfaces. The age of the Tupman and Zalvidea soils was inferred based on their relative geomorphic position and the type and degree of soil development compared to the Calflax and Hesperia series, and on neighboring soil bodies (i.e., Cerini, Excelsior, Kimberlina, and Posochanet series) that date to the latest Holocene. The distribution of these landforms in or near the margins of Kern and Buena Vista basins suggests they were deposited when water levels were higher within these lakes, which raised the hydrologic baseline for sediment deposition.

This evidence reinforces the view that a significant increase in rainfall initially occurred during the late Holocene that altered existing hydrologic systems, destabilized landscapes, and prompted widespread sediment deposition between about 4000 and 3600 cal BP. As conditions remained cooler and wetter, plant growth and greater vegetative cover allowed old and new landforms to stabilize and soil formation to prevail by about 2900 cal BP. It also appears that late Holocene deposition was more pronounced and/or extensive in the western and southern parts of the valley, where there is generally less rainfall and vegetation cover. While late Holocene landforms are also recognized along the east side of the valley and within the valley trough, the distribution of these landforms appears to be restricted to the alluvial fans of the Kings and San Joaquin rivers, and a corresponding portion of the lower valley trough. This suggests that deposition was not as pronounced or extensive at the base of the Sierra Nevada, perhaps due to the greater rainfall and vegetation cover normally associated with this region. At the same time, the large number of buried soils less than 2000 cal BP in age, provides strong evidence that a substantial part of the late Holocene landscape was buried during the latest Holocene (see Table 6; see Figure 26). The number of dated late Holocene-age cultural contexts in the region reflects this, with about 72.5 percent from surface contexts, and just over one-quarter (~27.5%) from buried contexts (see Figure 24).

Latest Holocene (2000 to 150 cal BP)

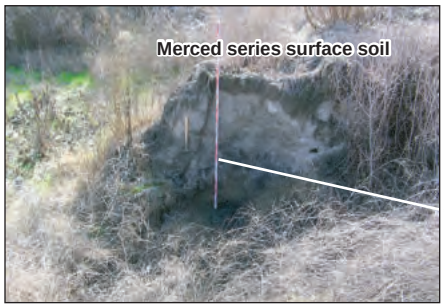
"More variable" best describes the contrast between the late and the latest Holocene climate. While it remained relatively cool and wet overall, there were also abrupt temperature swings and extreme precipitation shifts that were as dramatic as any in the Holocene. These changes include one or more episodes of increased rainfall between about 2000 and 1670 cal BP (Davis 1999a; Ingram et al. 1996; Negrini et al. 2006), two intense droughts within the Medieval Climatic Anomaly between about 1100 and 650 cal BP (Jones et al. 1999; Stine 1994), the rapid onset of the Little Ice Age (i.e., Matthes glacial) and return to cooler and wetter conditions after about 650 cal BP, and another severe drought between 482 and 370 cal BP (Hughes and Brown 1992; Meko et al. 2001). From these records, as many as four major droughts and precipitation cycles are apparent between about 2200 and 600 cal BP. Because of the rapid, repeated, and widespread nature of these changes, the present landscape still bears the lasting signature of latest Holocene climate variability.

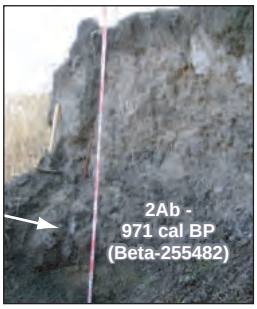
Not surprisingly, evidence of large-scale flooding and deposition during the latest Holocene is found throughout much of central California. For example, the age of surface alluvial and colluvial deposits in the Sierra Nevada foothills is constrained between about 1400 and 150 cal BP by nearly one-dozen radiocarbon dates (see upper Keystone deposits of Meyer and Dalldorf 2004). Radiocarbon-dated sediments along the South Fork American River indicate that large floods occurred during the latest Holocene (1125-650 cal BP) and buried many older land surfaces and associated archaeological sites (Bureau of Reclamation 2002:34). In the northern Diablo Ranges of Contra Costa County, alluvial and colluvial surface deposits have been dated between about 660 and 250 cal BP (see Brentwood unit of Meyer and Rosenthal 1997:34-35).

Within the past 2,000 years, a sizable body of alluvium was also deposited across the central part of the lower San Joaquin Valley and in the narrow valleys along most rivers and streams draining the Coast Ranges and Sierra Nevada (Rosenthal and Meyer 2004b). These deposits form a nearly continuous belt of alluvium on either side of the San Joaquin River channel, broad basins and floodplains in the lower San Joaquin Valley, and marshes in the Delta region. Dozens of radiocarbon dates from the associated surface deposits indicate that these landforms are generally less than 1000 cal BP in age (Meyer and Rosenthal 2008). The soil-age based mapping used by this study shows that the majority of the San Joaquin Valley is covered by latest Holocene-age surface deposits (see Figure 17). These form an almost continuous series of alluvial fans, floodplains, and basins along both sides of the valley, as well as a uniform ribbon through the valley's central trough. The various soil series mapped at the surface of these landforms are far too numerous to mention individually but are listed in Appendix C. Nearly 700 latest Holocene-age radiocarbon dates are available from the Study Area, including several new dates obtained from soils of the Foster, Hanford, Kimberlina, and Wasco series (discussed below). Included among these are 49 dates from buried soils, ranging in age from about 1985 to 130 cal BP, with a mean age of about 1075 cal BP (see Table 6).

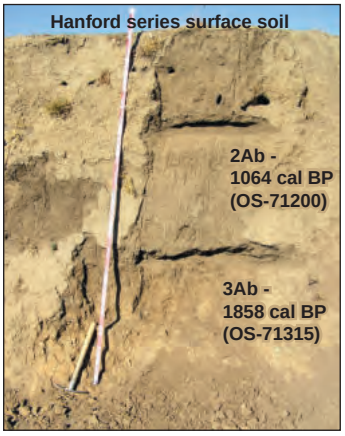
On the east side of the valley, along the San Joaquin River near Firebaugh, the age of the Foster-series is constrained by a date of about 2015 cal BP (OS-70227) from a buried soil (2Ab; Figure 32). The first buried soil (2Ab) below the Hanford series along Cottonwood Creek, also on the valley's eastern side, gave a limiting age of about 1130 cal BP (OS-71200), while a more deeply buried soil (3Ab) near the base of the same alluvial terrace (T2) yielded a maximum age of about 1880 cal BP (OS-71200). On the highest terrace (T3), a date of about 3635 cal BP was obtained from the eroded surface of an exposure of Atwater series soils capped by Hanford soils (see Figure 31). Thus, along Cottonwood Creek, it appears that Hanford-series soils are associated with more than one depositional episode, and possibly three. Along the San Joaquin River in Fresno County, a buried soil (2Ab) below Wunjey-series soils produced a much younger date of about 130 cal BP (OS-72582). This is interpreted as a minimum age for the Wunjey, as this particular exposure appears to be overlain by historic-era alluvium (Figure 32).

On the valley's western side, a maximum age of about 1605 cal BP (OS-67051) was obtained for the Kimberlina series from a cultural hearth feature exposed about 4.4 meters (14.4 feet) below surface in the side wall of Arroyo Hondo Creek (FRE-257) located near Interstate 5 in Fresno County (Figure 32). The minimum age of the Kimberlina series is constrained by a slightly younger date of about 1265 cal BP (Beta-188993) from buried cultural deposits at KER-3085 in the Elk Hills (Culleton 2006, Culleton et al. 2005). The latest Holocene-age

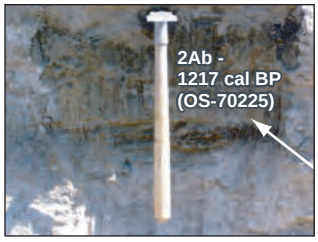




Deposits Exposed East of Fresno Slough, Fresno County (2 meter tape)



Two Latest Holocene-age Buried Soils Exposed Below Hanford Series, Cottonwood Creek, Madera County



South Bank of Chowchilla River



Deposits Exposed in South Bank of Chowchilla River, Madera County

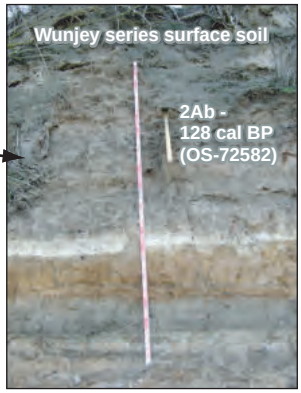


Deposits Exposed in Alluvial Terrace (T2) along West Side of Cottonwood Creek, Madera County



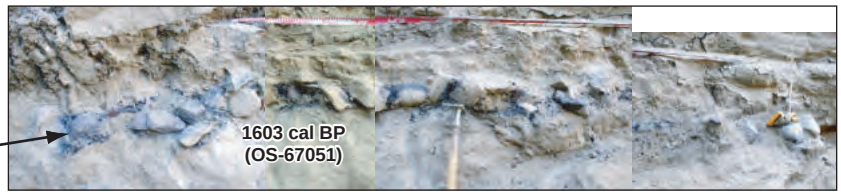
Modern Elk Bone (~1955 cal AD, OS-70223) Buried in South Arroyo Hondo Creek Bank, Fresno County





Sample Location in South Bank of San Joaquin River, Fresno County (red and white tape is 2 meters long)





Deeply Buried Hearth Feature in North Bank of Arroyo Hondo Creek (FRE-257), 4.3 to 4.5 Meters Below Surface, Fresno County

Figure 32. Selected Views of Radiocarbon-Dated Latest Holocene and Historic to Modern Deposits in the San Joaquin Valley.

alluvial fans on the valley's western side in Fresno County are not as extensive as their late Holocene predecessors, suggesting that rainfall and runoff were not as high and/or sustained in the latest Holocene as in the late Holocene, again pointing to more variable conditions overall (see Figure 17).

One of the single largest alluvial deposits formed in the valley during this time was the lower portion of the Kings River fan (Figure 33), which probably began blocking the northern Tulare Lake outlet between about 2000 and 600 cal BP. This suggests that the highest stands of Tulare Lake could only have occurred once the fan was deposited and the "dam" fully formed in the latest Holocene, instead of the latest Pleistocene as argued by Atwater et al. (1986). As noted above, and in the previous chapter, the lake does not appear to have reached its highest stand until about 175 cal BP (OS-73445) based on evidence from the Lethent fan. It is also possible that the northern side of the Kern and Buena basins was blocked by deposition on the lower Kern River fan in the latest Holocene (Figure 33) which could have raised lake levels and/or increased the lake's overall extent.

Given the widespread nature of these deposits, the latest Holocene emerges as one of the most influential periods of landscape change since humans first arrived in the San Joaquin Valley more than 11,500 years ago. Characterized by highly variable climatic conditions that alternated rapidly and repeatedly between intensely dry and extremely wet, these fluctuations destabilized many upland portions of the landscape and overloaded many rivers and streams with far more sediment than they could adequately transport. This caused widespread deposition on the San Joaquin Valley floor, and in other valleys, at a scale as aerially extensive as any depositional interval. Many hydrologic systems were also altered during this time, as once active channels were abandoned in favor of new ones, and major drainage basins (i.e., Tulare Lake) were impounded and/or enlarged.

Historical to Modern (150 to 0 cal BP)

The last major phase of landscape development occurred during the historical and modern eras in response to agriculture, irrigation, land reclamation, livestock grazing, timber logging, dredging, mining, quarrying, and the replacement of some native plants by nonnative species (Figure 34). Most of the San Joaquin Valley floor has been cultivated for crops or reclaimed for agricultural purposes, such as the area once occupied by Tulare Lake (Figure 34). Evidence of dredging or quarrying is found within river bottoms on the valley floor (e.g., San Joaquin River, Kaweah River), extensive deposits of mine-tailing also occur along many of the major stream and river channels. During the height of the gold rush in the late 1800s, hydraulic mining in the northern Sierra Nevada generated nearly one billion cubic meters of sediment that were released into channels draining the western slope (Gilbert 1917; Figure 11). Not surprisingly, this caused extensive flooding, channel migration, and widespread sediment deposition throughout the lower portions of the Sacramento and San Joaquin Valley (Thompson 1961: Figure 11).

During the 1880s, protective vegetation cover was greatly reduced by intense drought and livestock grazing, which made the land susceptible to erosion (Burcham 1982:171). This erosive period caused deep gullies and channels (i.e., arroyos) to form in many locations across the American West (Bryan 1925; Schumm and Hadley 1957), including some alluvial fans in western Fresno County (Bull 1964a, 1964b) and meadows in the southern Sierra (Dull 1995, 1999). Together these human-made changes have caused widespread erosion of the uplands and rapid sediment deposition in the lowlands, and fundamentally altered the drainage system, and the transport, deposition, and storage of sediment within the valley (Mount 1995).

More than 50 historic-era radiocarbon dates were identified from the study area, including four obtained for this study (see Table 8). These dates range in age from about 145 to 20 cal BP, with a mean age of around 100 cal BP (AD 1850), which puts most near the height of the gold rush period. Based on our mapping of the valley floor, deposits assigned to the historical and modern group are largely restricted to the active channels of modern fans and floodplains along perennial streams and rivers, such as the lower Kern and San Joaquin rivers (Figure 35), the lower Kings River, and within former lake basins that contained water during recent times (i.e., Buena Vista, Kern, and Tulare lakes).

The historical to modern map group also includes areas that were artificially cut and/or filled as a result of mining, construction, or urban development, which includes earthen dams, landfills, dredging piles, some highway and railroad embankments, and backdirt from quarries. While there is considerable variation in the

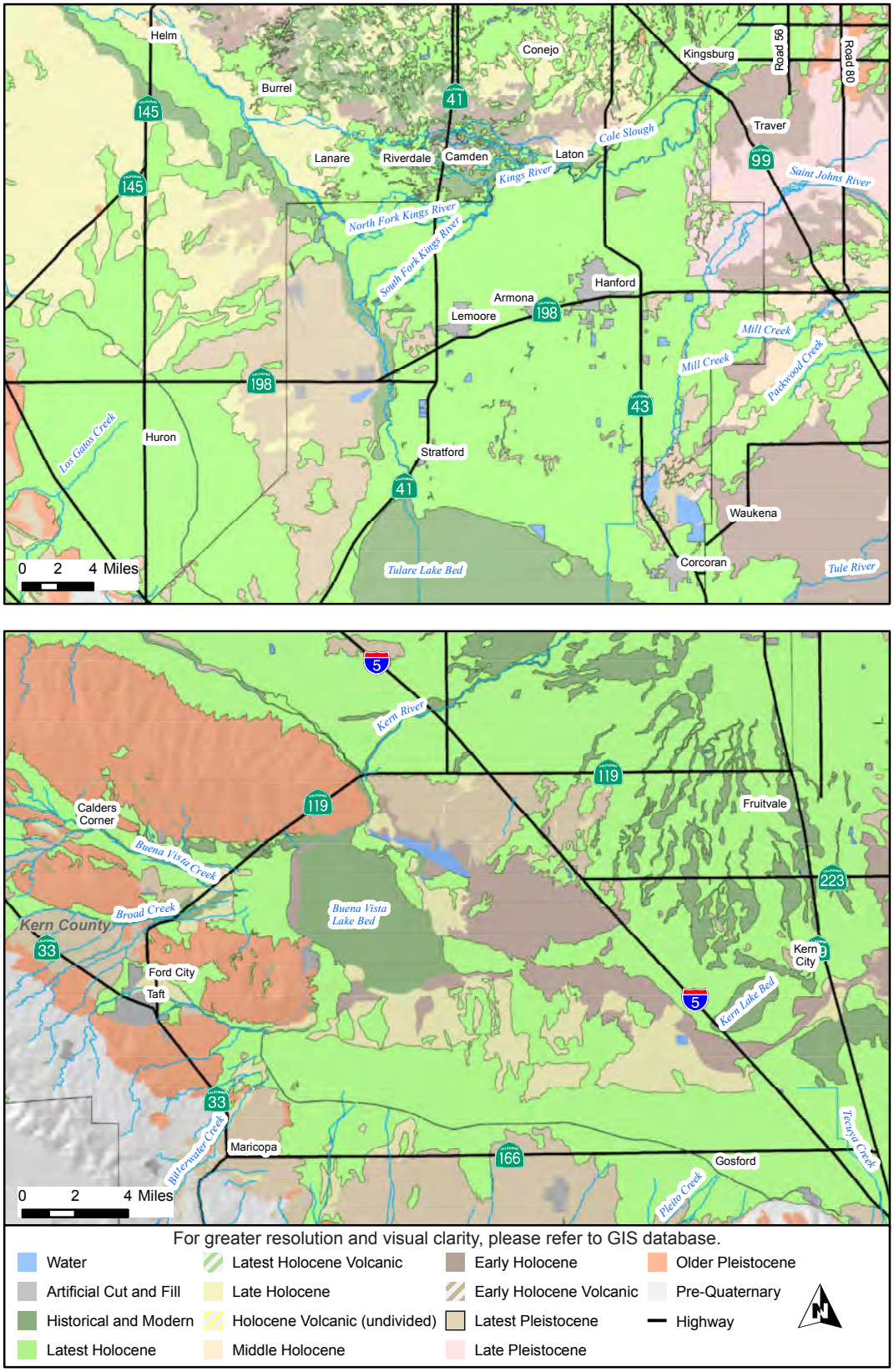


Figure 33. Latest Holocene Fan and Basin Deposits in the San Joaquin Valley.

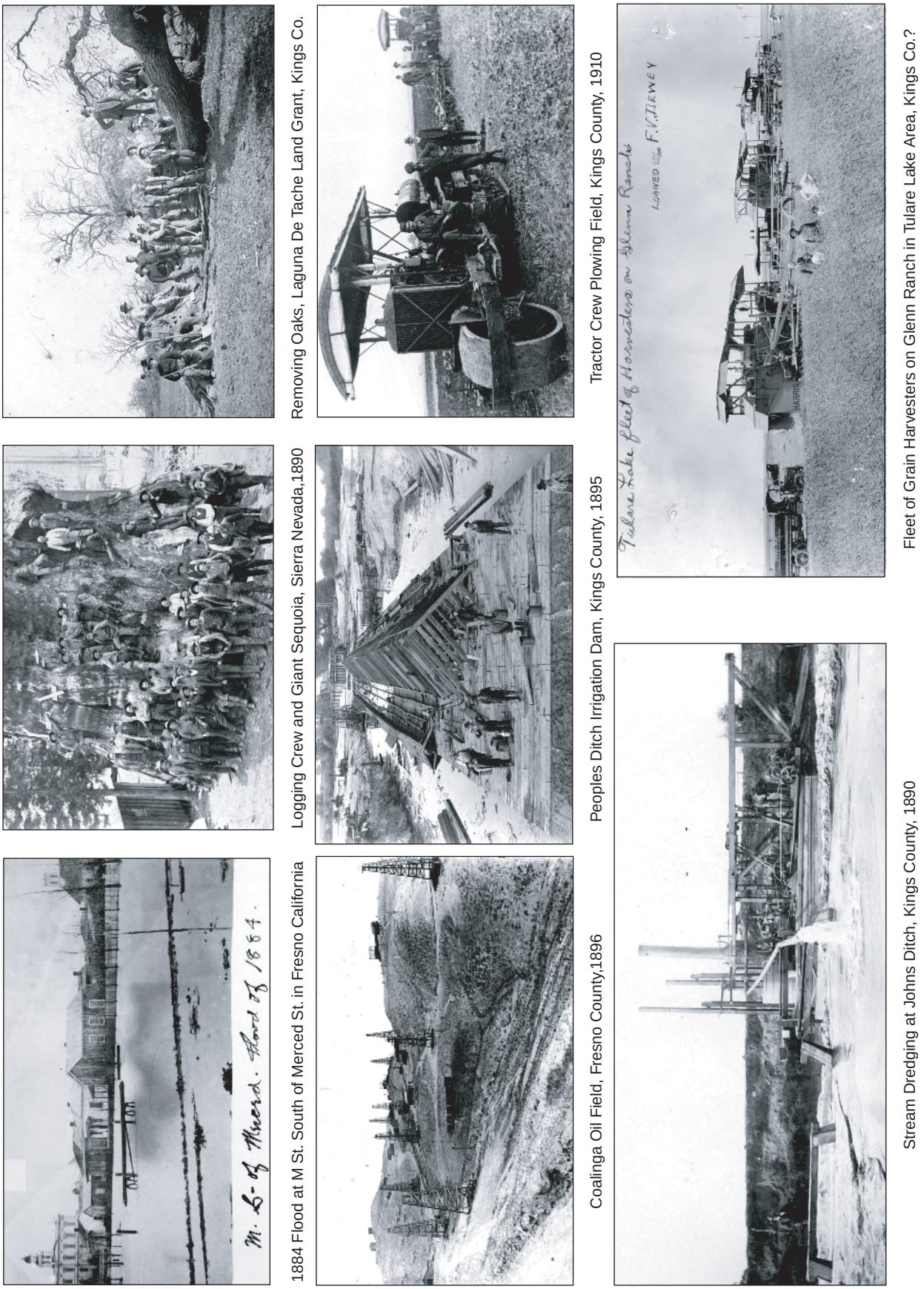


Figure 34. Examples of Historic-era Land Use and Landscape Changes in the San Joaquin Valley and Adjoining Portions of District 6/9.

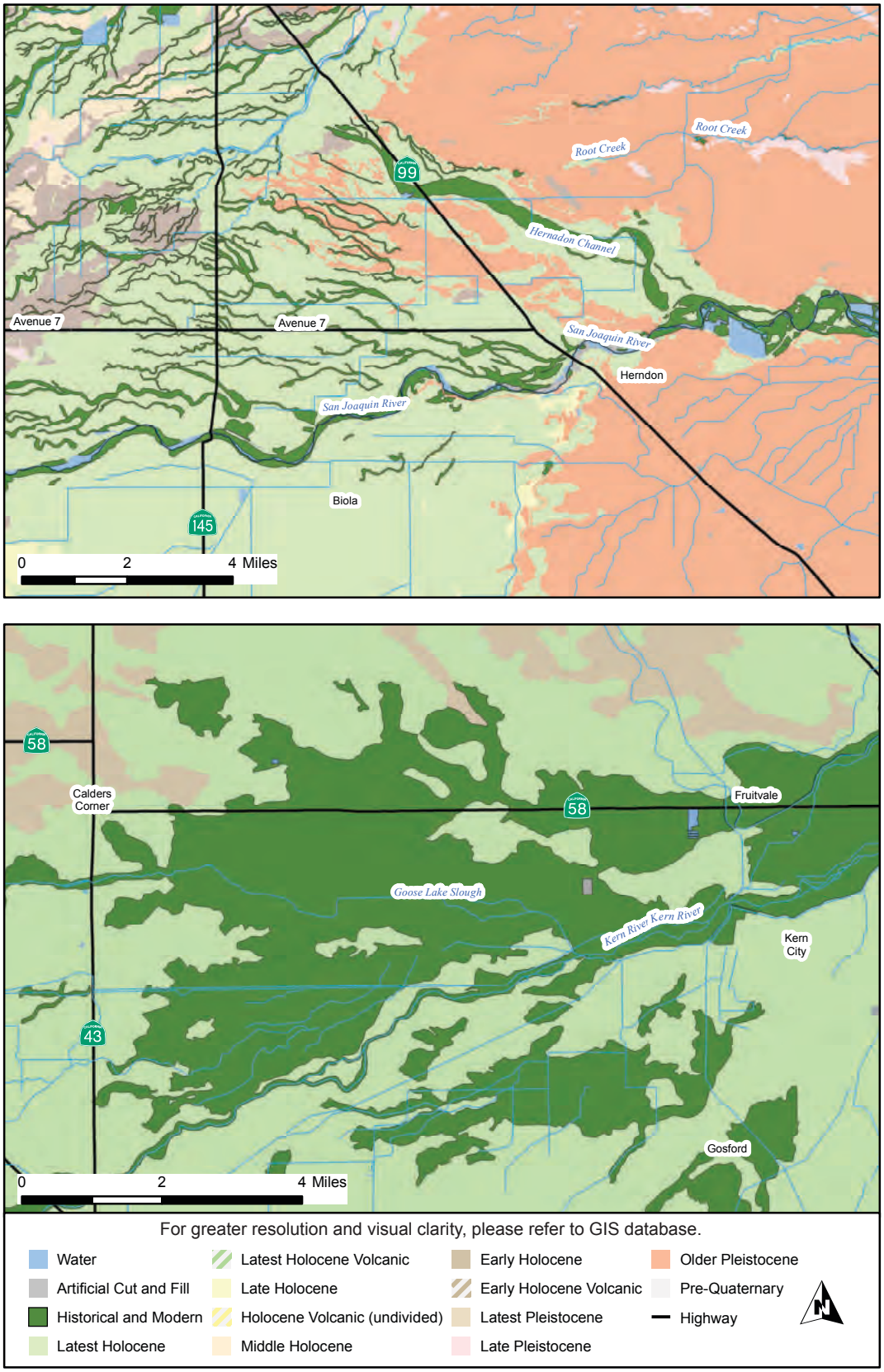


Figure 35. Historical to Modern Deposits in the San Joaquin Valley.

nature and texture of these deposits from location to location, they generally have undeveloped soil profiles, either because they have not been stable long enough, or because they were designed to resist weathering (e.g., dams, engineered fill). Modern artificial cut-and-fill deposits are still forming in the region.

GREAT BASIN AND MOJAVE DESERT

Geologic mapping in the Great Basin and Mojave Desert has focused on lithologic formations and structures of the prominent mountain ranges, with little attention to the "recent" valley fills (neotectonics and lake studies being prominent exceptions). The depositional units of the region lack cohesive naming conventions. Mojave and Great Basin fan systems have often been mapped in detail (see studies in Enzel et al. 2003; geoarchaeological contexts by Young 2007; 2009) but these tend to rely on idiosyncratic spatio-stratigraphic labels (for example, Qf1-Qf7, oldest to youngest) through which only cursory correlations are possible. Solving the riddles of basin-to-basin fan, stream terrace, dune, and lake correlations is well beyond the scope of this study; however, general chronological and processual relationships can be extrapolated across the Study Area. The degree of soil development provides an organizing principal for initiating a regional study of buried site potential.

Late Pleistocene and Older (>15,000 cal BP)

Glacial cycles that pre-date the Tioga glaciation (i.e., Tahoe and older) and tectonic uplift (mountainward) and downdrop (basinward) have resulted in relic outwash fans forming a broad alluvial bajada west of the Owens River at the foot of the steep mountain-fronts (Figure 36). Older Pleistocene surfaces are typically boulder-strewn, steeply to gently sloping fans and coalesced fans extending from the mountain-front to the level terraces of the Owens River. As observed on the western side of the range, the alpine valleys of the eastern Sierra appear to have experienced significant scouring during older Pleistocene glacial cycles; Tahoe-age (or post-Tahoe interstadial) scouring and outwash must have been especially competent. As a result, the later Tioga cycles, with some local exceptions, had less material to work with and less energy to deliver significant amounts of material to the valley margins.

In desert regions, older Pleistocene fans show intensive pavement development and are often uplifted relative to younger inset fans and valley margin deposits. Even in the arid environments of the eastern basins, these surfaces retain well-developed soil profiles with moderate to strong, calcium-, clay-, or oxide-rich B horizons. These landforms provide the foundation of the valley-bottom archaeological record.

Latest Pleistocene (15,000 to 11,500 cal BP)

Waning glaciation and high-amplitude fluctuations in larger lake basins were significant drivers of regional latest Pleistocene environmental change. As mentioned above, the Tioga glaciation may not have contributed large amounts of sediment to the eastern mountain front, and yet the hydrological cycling of wet-dry regimes resulted in active erosional and depositional cycles within eastside drainage systems. While smaller lakes in desert valleys, such as Searles and Eureka, returned but may not have reached earlier highstands, larger drainage systems experienced cyclical transgressions close to or reaching highstand levels. Lake Owens may have cycled between near-desiccation and sill-level overflow one or more times in several thousand years between glacial retreat and the close of the Pleistocene. Regional hydrological fluctuations, caused by atmospheric and oceanic perturbations as global systems responded to the termination of "ice-age" conditions (Benson et al. 1996; Benson et al. 1997; Phillips et al. 1996), produced concurrent erosion and deposition in valley-bottom environments. Large-scale geomorphic change became focused in riverine systems and lacustrine basins (valley floors), where prominent terraces formed along major drainages, deltas prograded into receding lakes, and littoral features (beaches and strands) were cut and occasionally reinterred. The strong Pleistocene linkage between global oceanic dynamics and regional atmospheric conditions (jet stream position/moisture content) was coming undone, so that geomorphic and environmental systems of the Great Basin, including areas immediately east of the Sierra Nevada, began to respond to much more local conditions than to global drivers. This de-coupling marked the Pleistocene to Holocene transition; approaching that temporal boundary, the latest Pleistocene was a period of dramatic though attenuated fluctuations as new equilibriums were established.

Figure 36. Older Pleistocene Fans Emanating from Glaciated and Unglaciated Drainages in the Owens Valley.

In the valleys east of the Owens River, large lake stands became rare but the cyclical character of wet-dry episodes supported small lakes and broad wetlands in valley-bottom settings, many of which were maintained into the early Holocene (Quade et al. 1998; Wigand and Rhode 2002). Relatively rapid changes in regional hydrology within each wet-dry cycle produced active cycles of erosion and deposition. Well into the southern Great Basin and northern Mojave, fan surfaces eroded to leave truncated paleosols near or at the modern surface. In Fremont Valley, south of Ridgecrest, the bajada of Pine Tree Wash preserves an eroded paleosol buried by relatively recent alluvium. Following a period of regional landform stability (i.e., the period of soil development), portions of the bajada surface were stripped by erosion, removing (truncating) the upper A-horizons and leaving the more resistant Bt and Btk horizons. Deposition shifted to the distal fan resulting in broad fan progradation. Radiocarbon dating on organics within the B horizon shows that the paleosol was well-developed at 15,030 cal BP (Beta-254726). This date provides a maximum for bajada erosion. A later paleosol dated at 10,760 cal BP (Beta-255187) on another area of the fan provides a minimum date for this phase of fan progradation at Pine Tree Wash and Fremont Valley.

Evidence of a similar landform sequence is found at Dove Springs Wash in Red Rocks State Park to the north. Although also buried by younger deposits, an eroded paleosol found throughout the Dove Springs and Red Rock area has been dated to 12,750 cal BP (Beta-18449; Whistler et al. 1990, 1994). The date comes from depositional organics (conifer fragments), and the paleosol formed soon after.

The Gunsight soil series formed on latest Pleistocene landforms in the northern Mojave (Figure 37). A series of radiocarbon dates on *Anadonta* shell in beach and bar features, now capped by the Gunsight soil, shows that these landforms were mostly deposited in the latest Pleistocene (Ore and Warren 1971; Wells et al. 1989). A period of highstands at Silver Lake corresponds with increased runoff and fan progradation throughout the Mojave River system at this time (Wells et al. 1989). Along the eastern front of the Sierra, latest Pleistocene deposits and corresponding soil series (e.g., Yermo and Timosea) are confined to upper fan segments and post-glacial features near the mountain front and in steep-sided canyons. The latest Pleistocene-age Polenta series near Bishop formed on remnant alluvial terraces abandoned by the Owens River (Figure 37 and Figure 38). A surface date of 7,245 cal BP (Beta-53846; Pinter et al. 1994) provides a minimum age for underlying deposits that form large, segmented river terraces on the western side of the Owens River. Hydrological cycling characteristic of the latest Pleistocene flushed out large amounts of sediment from the Owens Valley, setting the stage for a complex terrace system along much of the river reach. During this period deposition was focused along lower reaches of the river and in the delta and littoral area of Owens Lake. This material has been worked more recently into an extensive aeolian-deposited berm and dune system north and east of Owens Lake.

Early Holocene (11,500 to 7000 cal BP)

Hydrologic cycling continued into the early Holocene, though the amplitude of high and low streamflows and the transgression and regression of regional lake levels began to lessen. In general, Great Basin landforms of the early Holocene were relatively stable. Prominent, well-developed soils dating to this period are relatively common, though most are buried beneath younger fan surfaces. The downcutting of previous intervals may have allowed fan surfaces to stabilize by confining fluctuating streamflows to relatively incised channels. Fans continued to prograde and may have engulfed axial valleys with sediment. In fact, early Holocene age landforms make up a significant percentage of mapped deposits in the eastern side of the Study Area. This, combined with the prevalent occurrence of early Holocene paleosols, suggests a generally stable period, with longer-term effective moisture (Bacon et al. 2003) and more equitable seasonality in the form of increased summer rainfall (Wigand and Rhode 2002).

Although the early Holocene is often considered the initial phase of general Holocene drying, precipitation and overall capacity of stream systems may have been relatively high compared to later periods. Quade et al. (2003) have shown dramatic productivity in spring environments of the southern Great Basin. Black mats and lake deposits dated to this interval (10,640-9070 cal BP) at the Lava End Locality in Rose Valley, south of Owens Lake, provide evidence that the lower Owens system may have experienced mesic conditions. Based on dated lake deposits in Rose Valley, and evidence for a relatively deep lake in Searles Basin (Smith and Street-

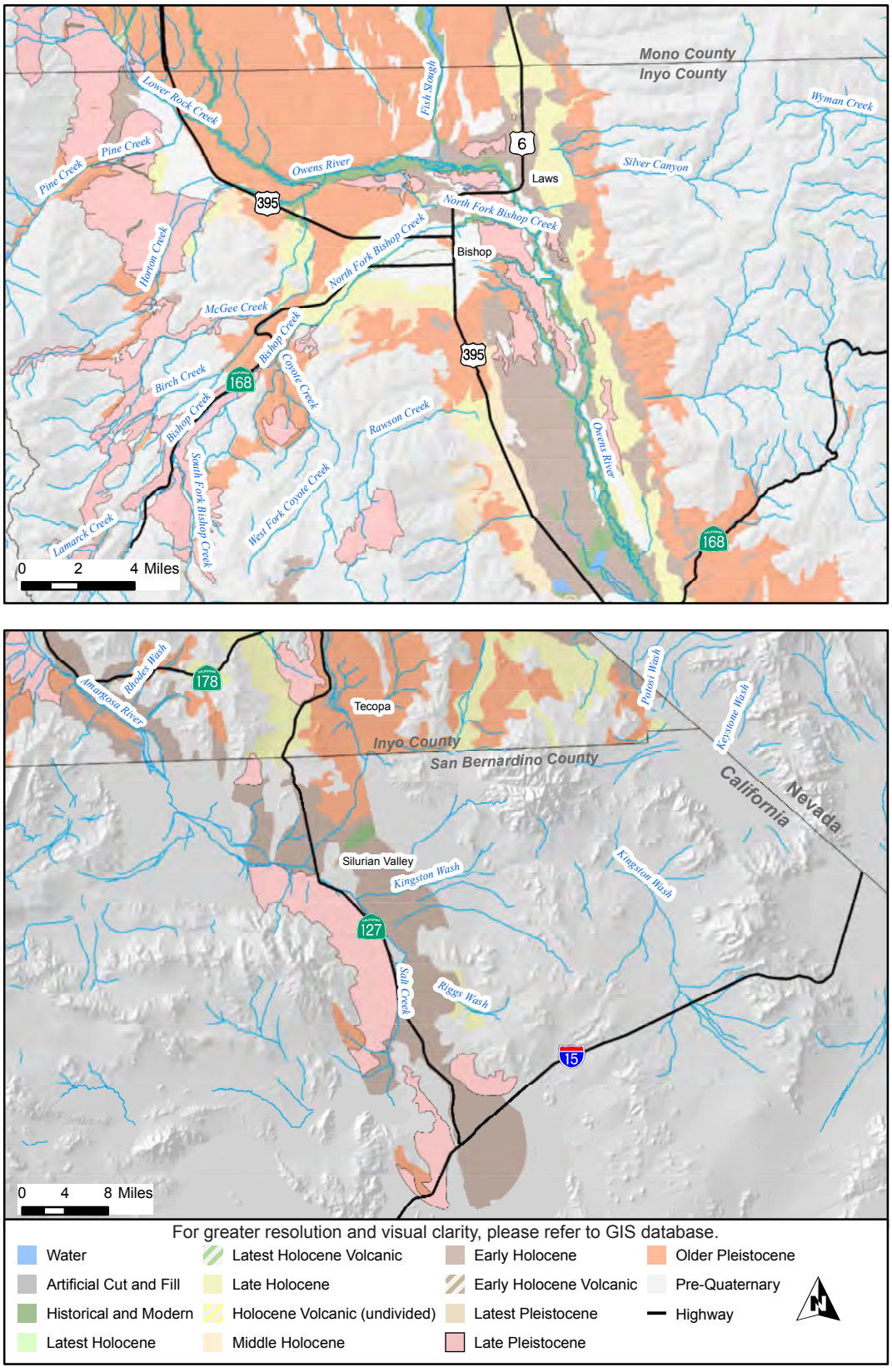
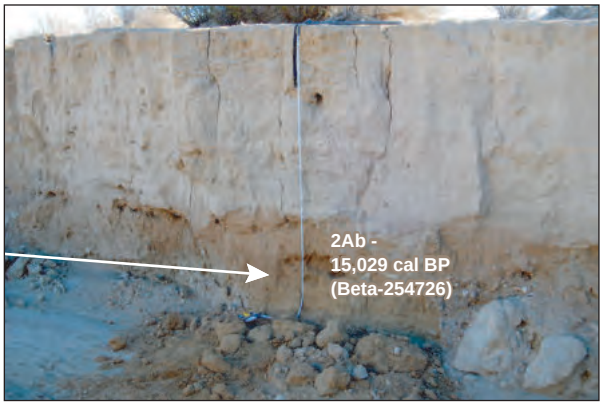


Figure 37. Late Pleistocene Deposits in the Owens Valley (top) and Mojave Desert (bottom).





Deposits Exposed in Bank of Pine Tree Wash (left) and Sample Location (right), Fremont Valley, Kern County



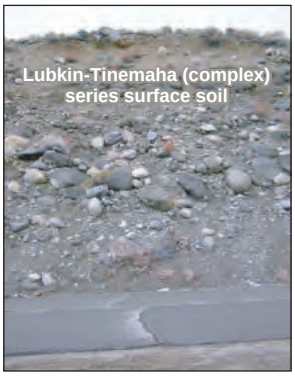


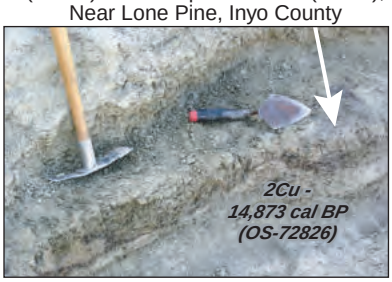
Terrace (T3) South of Owens River near Horton Creek, Inyo County



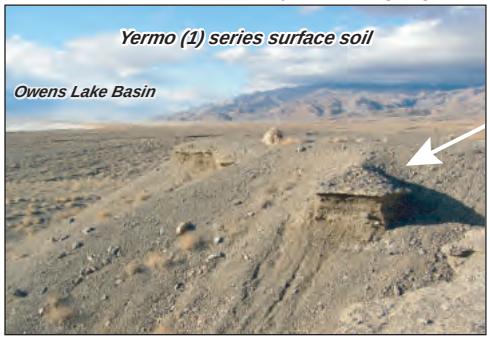
South Bank of Owens River Terrace (above) and Sample Location (below), Near Lone Pine, Inyo County







Glacial Till and Outwash Deposits along Big Pine Creek, West of Big Pine, Inyo County







Well Developed Soils Exposed in Dissected Alluvial Fans East of Owens Lake Near Keeler, Inyo County

Figure 38. Selected Views of Latest Pleistocene Deposits in the Mojave Desert (top) and Owens Valley (bottom).

Perrott 1983), it seems likely that Owens Lake reached its overflow sill at least once in the early Holocene (Phillips 2008; Orme and Orme 2008). Alternatively, groundwater connections and local surface flow (e.g., in Rose and Indian Wells valleys) may have been enough to supply water to the lower reaches of the Owens River. Springs may have been especially productive during the early Holocene, providing habitat refuges and predictable water sources during cyclical downturns.

In the Mojave River system, streamflows remained relatively high. The record of dated freshwater shell in the southern Great Basin and Mojave River (Figure 39) is particularly illustrative of the change in hydrologic conditions. Dated shell is common in latest Pleistocene deposits along the Owens and Mojave rivers. There is enough moisture in the river systems to maintain populations of freshwater shell through the early Holocene, but these shells disappear from the record in later periods; there are no dates on freshwater shells in the region from 8000 cal BP until very recent times. A highstand of Lake Thompson is also recognized at about 7660 cal BP (Beta-166446) in the Rosamond and Rogers lake basins in the western Mojave Desert (Orme 2008). This seems a significant proxy for continuation of healthy riparian environments throughout the Study Area during the early Holocene.

Early Holocene deposits are common along the Owens River. These are often positioned as abandoned terraces, with younger inset terraces between early Holocene landforms and the modern river course. The Division soil series, broken by the Lone Pine fault scarp north of Lone Pine, formed on a surface that stabilized in the early Holocene (Figure 40). Bacon et al. (2003) provided a series of well-dated profiles with stratigraphically organized dates between 14,820 and 10,330 cal BP from landforms with Division soils mapped at the surface. Deposition of many of the early Holocene Owens River terraces may have begun with latest Pleistocene scouring upstream, but final deposition and stability was established in the early Holocene. Because sediment originating from young fan surfaces to the west has not yet reached the Owens River, early Holocene terraces form a prominent level landscape between the valley-margin fans and incised river channel.

Early Holocene landform stability is also evidenced beneath the relatively young fan surfaces on the western margin of Owens Lake and beneath the pumice-capped fans near Mono Lake. Buried soils that formed during the early Holocene are common in the bajadas emanating from the eastern Sierra mountain front. Archaeological excavations at INY-4554 (Gilreath and Holanda 2000) revealed an early Holocene cultural assemblage resting on a prominent buried paleosol. The paleosol was also exposed in the arroyo of Ash Creek on the southern margin of the fan (1-1/4 miles south of the site [Figure 40]). Dates from the paleosol, derived from soil organics at both locations, ranged from 9390 to 7600 cal BP (Figure 41); this shows long-term soil development and general stability across broad stretches of the Ash Creek alluvial fan. Although fan stability and peaks in soil organics suggest relatively moist environmental conditions, Owens Lake may have been approaching desiccation, as evidenced by soil development on an exposed lakebed with dates of 9220 and 9240 cal BP (Benson et al. 1997; Benson et al. 2002); fish remains from a buried beach deposit on the lake's southeastern shore have been dated to 8265 cal BP (OS-72752), marking a prominent die-off and likely lake desiccation (Figure 41). Soils were also developing on stable alluvial fans and terraces in Indian Wells Valley in the early Holocene; now buried, these paleosols have been dated to between 10,250 and 9810 cal BP (Figure 41). This is key evidence for cyclical environmental conditions of the early Holocene.

Fan systems between Owens and Rose valleys are capped by the Ulymeyer soil series which displays a strong soil profile. These alluvial fans, which lie above the overflow-point of Owens Lake (beneath modern Haiwee Reservoir), have been long-stable, though periods of lateral surface erosion (i.e., planation) have resulted in periodic pauses in soil development. Nonetheless, these soils are probably correlates of the now-buried paleosols found in alluvial fans on either side of this relatively high landscape.

In the desert basins east of the Owens River, alluvial fans continued to prograde with significant extension into valley bottom areas during the early Holocene. In fact, most of the fan surfaces and near-surface deposits in Death, Panamint, and Silurian valleys are early Holocene in age as indicated by the Carrizo soil series. However, fans in each valley are complicated landforms with time-transgressive surface ages (i.e., youngest to oldest as one moves up-fan) and significant local variability. This is likely due to valley-to-valley variations in intense summer storms that tend to drive Holocene fan progradation in an idiosyncratic way.

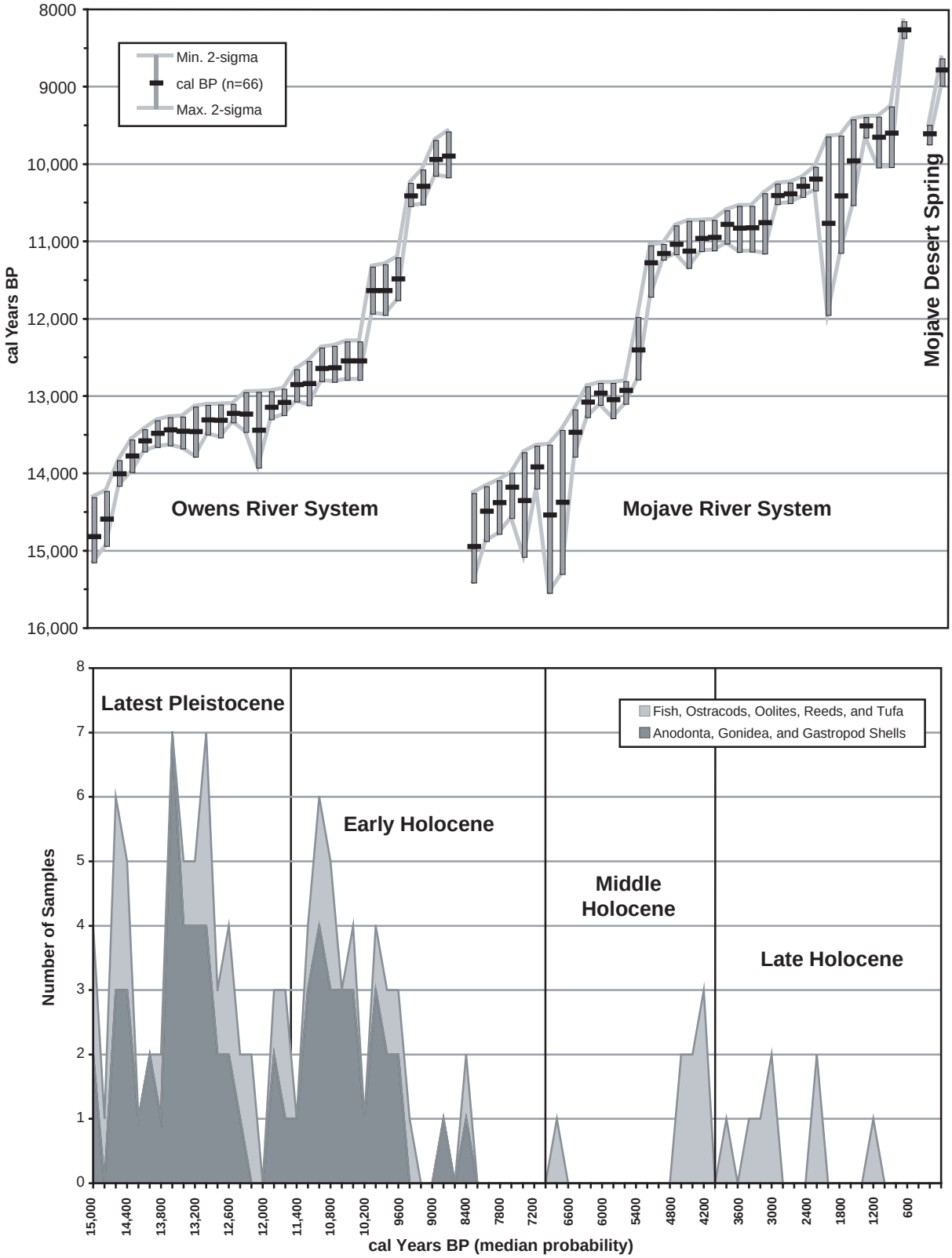
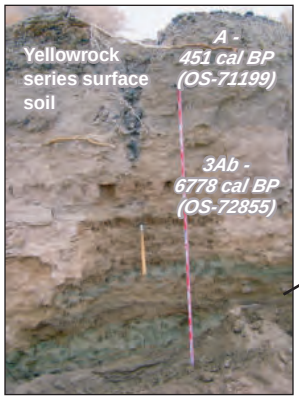
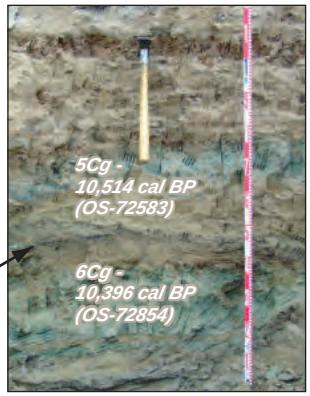


Figure 39. Freshwater Shell from Owens and Mojave River Systems (top) and Comparison of Dates from Shell and Other Lacustrine Sources (bottom).

Figure 40. Early Holocene Deposits in the Owens Valley.

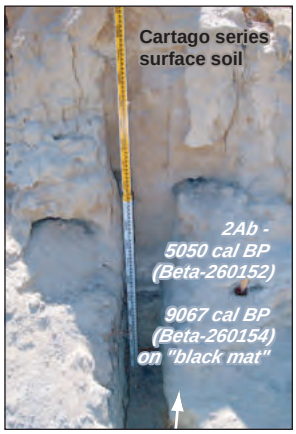




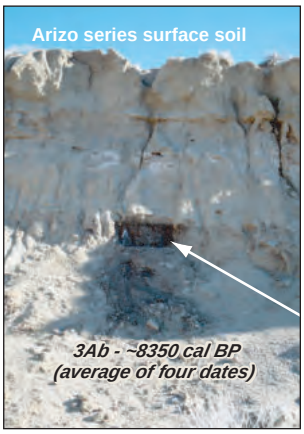
Lacustrine and Terrrestrial Deposits Exposed in East Bank of Gully North of State Route 190, South of Owens Lake, Inyo County



Freshwater Shell Bed Exposed in East Bank of Gully North of State Route 190, South of Owens Lake, Inyo County



Lava End Sample Location, Rose Valley, Inyo County



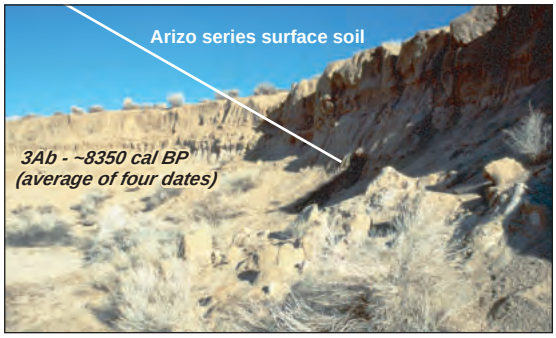
Buried Soil Sample Location in Bank of Ash Creek, Inyo County



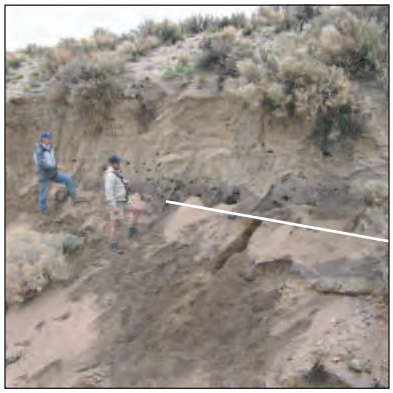
Buried Soil Exposed in Bank of Ash Creek, Near State Route 395, West of Owens Lake, Inyo County

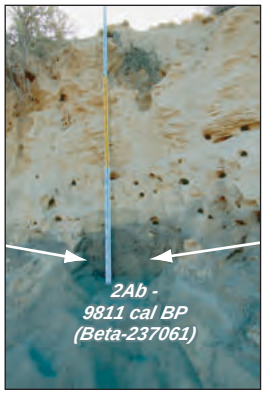


Lava End Sample Location Rose Valley, Inyo County, View to South



Buried Soil Exposed in Bank of Ash Creek, Near State Route 395, West of Owens Lake, Inyo County







Deposits Exposed at Indian Wells Canyon Sample Location to Northeast (left), East (center), and Southeast (right), Inyo County

Figure 41. Selected Views of Radiocarbon-Dated Early Holocene Deposits in Owens and Indian Wells Valleys.

Rearrangement of the landscape marked the close of the early Holocene as significant drying, likely accompanied by fewer but more intense summer storms, took hold of the region. It is difficult to split this episode of significant erosion and deposition between the early and middle Holocene periods. Geomorphic process influenced the preservation and modern distribution of the landforms of the former period, while environmental conditions characteristic of the latter period were beginning to take hold. There is a dearth of radiocarbon dates from buried paleosols at this boundary suggesting that landforms were being eroded and/or capped by new deposits; a regional absence of soil dates may be a good proxy for regional geomorphic activity. In the northern Great Basin, tephra from the eruption of Mount Mazama filled erosional gullies, choked narrow drainages, and was incorporated into new fan deposits (Davis 1978; Nials 1999.; Young in McGuire 2002:4). The Mazama ashfall occurred at about 7700 cal BP (Hallett et al. 1997) and, based on its depositional context, followed closely geomorphic rearrangement marking the early/middle Holocene boundary. Although not well-documented in the study area, deposits of Mazama tephra occur in the northern portions of Mono County (Sarna-Wojcicki et al. 1991; and see Chapter 5). Nevertheless, it provides a minimum date for the transitional period of punctuated landform rearrangement.

Middle Holocene (7000 to 4000 cal BP)

With the opening of the middle Holocene, relatively high aridity and prolonged droughts are evident in the valleys east of the Sierra Nevada (Grayson 1993; Wigand and Rhode 2002). Following the intensive down-cutting of the early/middle Holocene transition, points of alluvial erosion shifted toward mountain fronts and valley margins resulting in broad fan progradation and sheet deposition. Early Holocene paleosols near Owens Valley and along the Owens River terraces were buried by renewed fan deposition in mid-fan locations. Fans expanded in Fish Lake Valley and the northern reaches of Death Valley. Fan progradation was also influenced by major tectonic shifts in locations as disparate as Fish Lake Valley (Reheis 1994) and Fremont Valley (Gardner et al. 2002). Lower in the valleys, landforms either became stabilized (Rose Valley) or underwent pulses of aeolian re-working. Owens Lake desiccated completely (Bacon et al. 2003; Benson et al. 2002), and groundwater-charged Little Lake was limited to a tule and scirpus wetland (Mehringer and Sheppard 1978). With regional desiccation, aeolian transport of sand from drying streams, deltas, and lakes allowed the development of new dune fields (northeast and south of Owens Lake) and rejuvenation and reconfiguration of large dunes in many other locations (Mehringer and Warren 1976).

Radiocarbon dates on charcoal from distal fan deposits in Fremont Valley provide evidence of distal fan progradation beginning sometime after 8125 cal BP and continuing in repetitive pulses until almost 3690 cal BP (Young 2009). This broad fan progradation, originating near valley margins, resulted in deep burial of archaeological sites situated in incised drainages along the Garlock Fault on the western side of Fremont Valley. At Clark Wash (KER-3939), hearths and cultural burn zones formed in the early/middle Holocene (dates range from 8000 to 6300 cal BP) occupy a drainage where tectonic offset provided protection from subsequent erosion (Gardner et al. 2002); the site rests in an abandoned channel that was tectonically shifted away from local streamflow (i.e., canyon floods). Cultural materials were subsequently buried by sheet floods from the adjoining fan, filling the abandoned drainage and capping the archaeological site after 6300 cal BP.

The Cartago soil series marks landscapes formed during the middle Holocene. Early Holocene spring and lake deposits in Rose Valley are capped by fan and sand sheet deposits with well-developed soil profiles of the Cartago series (Figure 42). Radiocarbon dates on soil organics in a Cartago profile at the Lava End Locality in Rose Valley range from 7625 cal BP (Beta-260155) to 5050 cal BP (Beta-260152; Figure 43). At this locality the soil was capped by a thin sand sheet and is no longer developing; elsewhere in the valley the soil is at the modern surface. Along the Owens River terraces north of Owens Lake, the Cartago soil series formed on small fans that drape onto early Holocene terraces adjacent to the river (see Figure 42).

Archaeological sites are common on middle Holocene fans of the Cartago series. Almost always late or latest Holocene assemblages, with radiocarbon dates less than 2000 cal BP, the sites are typically surface or shallow manifestations in well-drained sediments of relatively young fans. Site INY-3826 at Little Lake was buried by artificial fill but rested directly on a Cartago soil profile. This site has a series of radiocarbon dates from near-

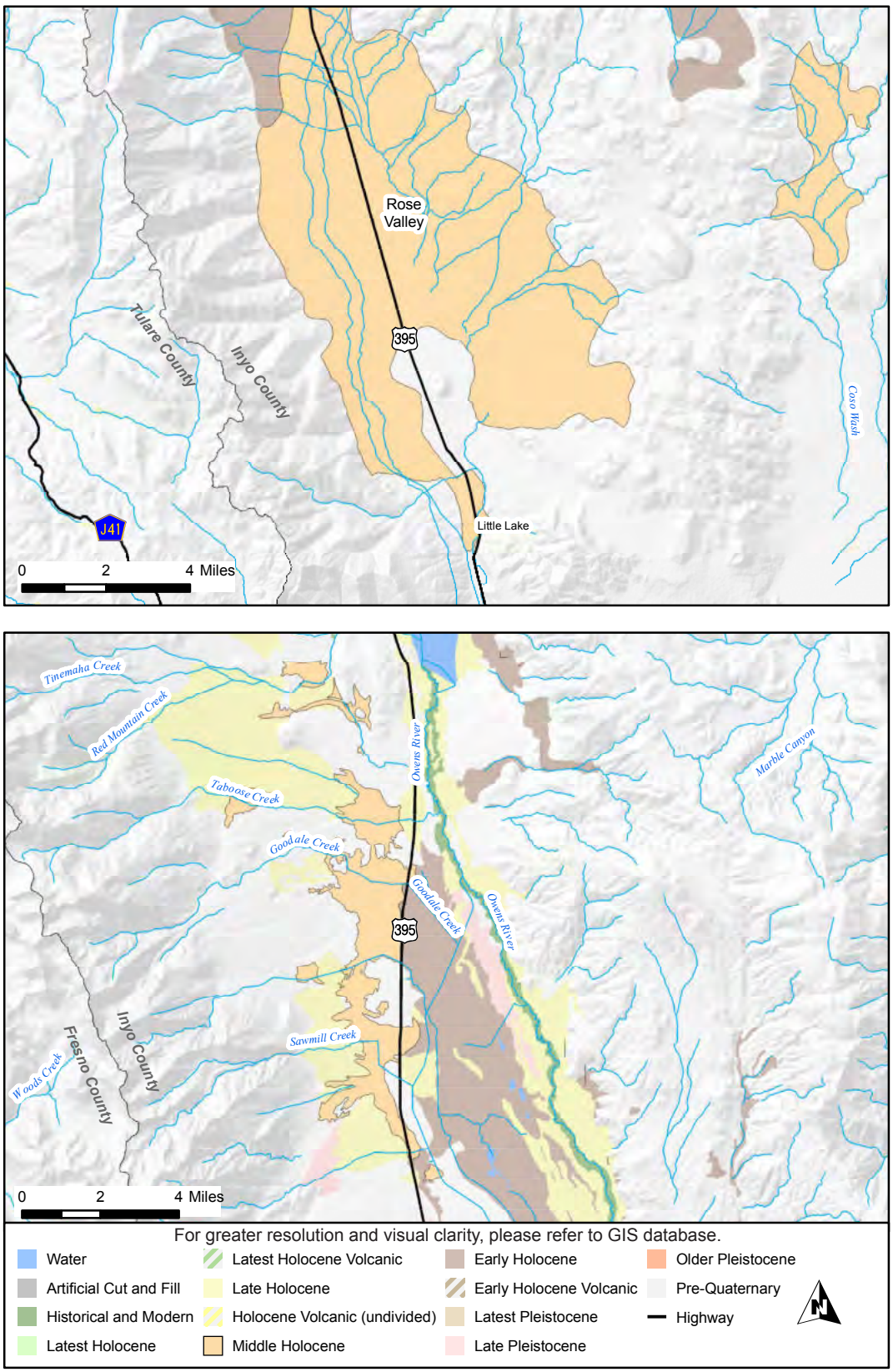
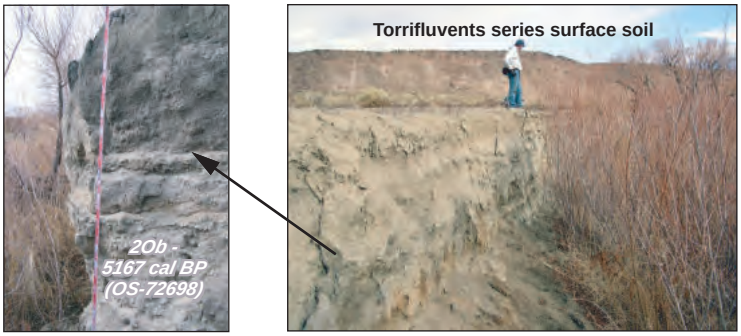


Figure 42. Middle Holocene Fan and Basin Deposits in Rose Valley (top) and Owens Valley (bottom).



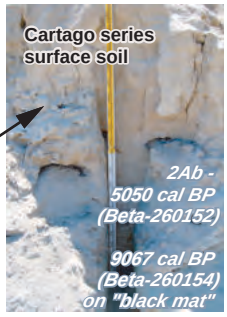
Buried Cultural Deposit Exposed in Trench at MNO-891 Along Walker Creek, Mono County



Deposits Exposed in Terrace (T2) Along North Bank of Horton Creek, South of Owens River, Inyo County (above)



Lava End Sample Location Rose Valley, Inyo County, View to South



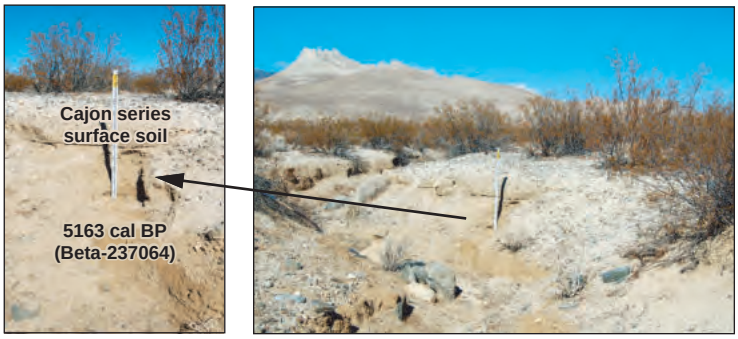
Lava End Sample Location, Rose Valley, Inyo County



Middle Holocene Alluvial Fan West of Little Lake, Rose Valley, Inyo County



Middle Holocene Alluvial Fan West of Little Lake, Rose Valley, Inyo County



Buried Soil Exposed in Alluvial Fan Gully in Indian Wells Valley, Inyo County

Figure 43. Selected Views of Middle Holocene Fan and Basin Deposits in Indian Wells, Rose, and Mono Valleys.

surface contexts that cluster between 1290 and 1045 cal BP (Byrd and Reddy 2004), providing a limiting age for the landform. A maximum age for the distal portion of the Little Lake Canyon fan is provided by buried early Holocene cultural deposits at the Stahl site (INY-182; Schroth 1994). Other assemblages with late Holocene dates resting on middle Holocene landforms marked by Cartago soils include INY-2284 (Faull 2006), INY-5281, and INY-5876 (Zeanah and Leigh 2002).

The Cartago soil and associated landforms may be the best temporally constrained landscape features in the eastern project area. In addition to examples from Little Lake and the Owens River, historic-era arroyos in the vicinity of Centennial shore on the southeastern side of Owens Lake have exposed a complex fan/lacustrine interface. Although overlain by late Holocene fan deposits, the Cartago soil generally outcrops near the top of local profiles and grades upward to form the modern surface of higher fans around the lake margin. As elsewhere, the Cartago soil is bracketed by a date of 6780 cal years BP (OS-72855) from a buried soil beneath this deposit and a date of 490 cal years BP (OS-71199) from a cultural hearth that directly overlies the buried Cartago profile (see Figure 42). These well-dated assemblages provide clear constraints for middle Holocene fan deposition and subsequent development of the Cartago soil.

The Great Basin notion of expansive and prevalent heat and aridity during the middle Holocene "Altithermal," as originally proposed by Antevs (1948), has been superseded by a nuanced view of local variability (Grayson 1993:216; Sutton et al. 2007). However, archaeologists continue to struggle with a relatively sparse archaeological record. In fact, the general outcome of middle Holocene drying seems to be relatively low population densities throughout large areas of the Great Basin and Mojave Desert (Grayson 1993:255). Pinto Series projectile points occur in widespread contexts throughout the region (Sutton et al. 2007:238), but dated sites are relatively rare. Most radiocarbon dates from sites with Pinto assemblages (e.g., Stahl, Clark Wash, [those of Pinto Basin, further afield]) fall within the early Holocene or occupy the early years of the middle Holocene. Sites with well-dated middle Holocene components tend to be in relatively well-watered positions that may have been resource refugia. Site MNO-891 is adjacent to Walker Creek (Carpenter 2001) in close proximity to remnants of glacial lakes where resources may have been somewhat buffered by orographically induced precipitation (see Figure 43). Although the Rose Spring site (INY-372) is famous for its late Holocene projectile point assemblage, the site may also provide a classic example of a spring-side refugia. The site appears to have been first occupied about 6,000 years ago and contains a well-dated middle Holocene component with multiple features and dense midden (Yohe 1992).

Late Holocene (4000 to 2000 cal BP)

The late Holocene period is marked by a general amelioration of the harsh aridity of the preceding interval, and a rebound toward more favorable environmental conditions. As a whole, the region experienced an increase in seasonality resulting in an overall increase in precipitation and concomitant reduction in evaporation. Unlike the punctuated erosional and depositional events that marked the opening of the middle Holocene, the regional transition from the middle to late Holocene was spatially and temporally transgressive. Pollen evidence and lake-inundated trees from the northern Great Basin suggest that increased precipitation may have arrived as early as 6,000 years ago (Wigand and Rhode 2002). Peat deposits in Ash Meadows near Las Vegas also show spring regeneration at about 6,000 years ago (Mehringer and Warren 1976; Wigand and Rhode 2002). Although this spring record is enticing, the shifting dune environments may have forced changes in deposition of spring organics. In any case, both Mono Lake and Owens Lake reached relative high stands around 4,000 years ago, (Bacon et al. 2006; Benson 2004; Stine 1990, 1994) pointing to a general increase in regional precipitation and runoff, a keystone of the late Holocene.

Concurrent with the regional increase in lake levels, some rising from near desiccation, regional landforms underwent a significant rearrangement. Although not as pronounced as the down-cutting and fan progradation episodes of the early to middle Holocene transition, there is a similar erosional and depositional period between about 4000 and 3500 years cal BP. After this transition, there are no dates on soil organics from late Holocene period landforms in the Great Basin or Mojave Desert. This may be a result of general sampling error, but it does suggest that geomorphic change and landform rearrangement was dominant through the period. Furthermore, late Holocene dates on non-cultural and cultural material buried within landforms are relatively

common. This is especially true in distal fan areas where fan progradation extended toward valley bottoms. Late Holocene deposition produced thick deposits in Fremont Valley (Figure 44) where movement on the Cantil/Garlock fault and increased run-off led to several meters of sediment (Young 2009). In the Mojave section of the Sierra front, these late Holocene deposits are capped by even younger (latest Holocene) sediment packages (i.e., latest Holocene or historic)

Further north, late Holocene fans are common adjacent to the Owens River terrace and are inset between older fans, typically middle Holocene and latest Pleistocene. Many of the modern fans emanating from the Sierra mountain front along the Owens River began development in the late Holocene (see Figure 17); similar progradation occurred at the foot of the White Mountains.

Soils on late Holocene landforms typically show weakly to moderately developed profiles because sediment deposition occurred relatively recently. While late Holocene landforms are often buried, late Holocene soils form the modern surface throughout much of the Owens River terrace system and, as mentioned, on alluvial fans adjacent to mountain fronts. The Yermo and Yellowrock soil series have formed on inset alluvial fans emanating from the western side of White and Inyo mountains, east of the Owens River terraces and floodplain (Figure 45). West of the river, contemporaneous landforms with Goodale soils and small areas of Yermo soils emanate from the bajada of the eastern Sierra Nevada.

Although these soil series have not been directly dated, archaeological sites on their surfaces have produced dates reflecting latest Holocene occupation. Site INY-2750 rests on a small fan with the Yermo series; Delacorte (1999) obtained a radiocarbon date of 1250 cal BP on an archaeological feature deposited on this soil. These young fan deposits are relatively thin, often resting on lacustrine or riverine deposits of Pleistocene vintage (Bacon et al. 2006).

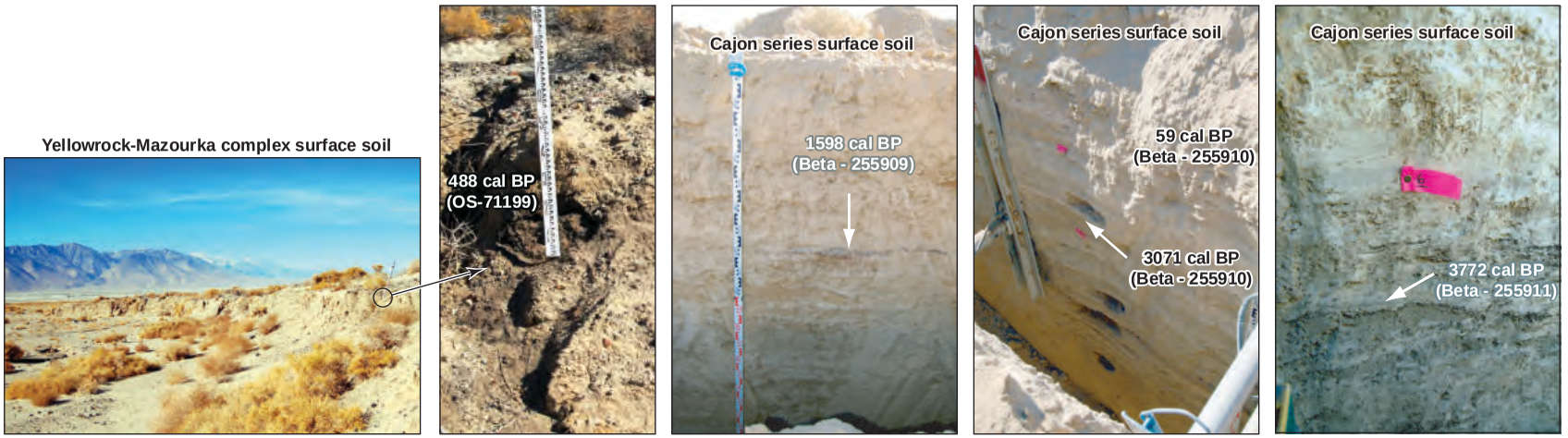
Terraces on the Owens River, between Bishop and Owens Lake, form a complex system of erosional and depositional surfaces. Archaeological sites are relatively rare on the terraces in close proximity to the modern river channel, and the few sites that have been dated, such as INY-328 (Delacorte 1999), contain relatively shallow surface deposits resting on much older landforms. Sites are often found where late or latest Holocene fans and small dune sets extend onto late terraces. The dunes are reworked alluvial sediments derived from the terraces. These young terraces and late distal fans are marked by Mazourka soils (see Figure 38). Hesperia soils cap the distal fans and late Holocene dunes.

Radiocarbon dates derived from archaeological sites on and cut into Mazourka soils range from 1200 to 375 cal BP (Delacorte 1999). Sites on adjacent fans and dunes capping the terraces, marked by the Hesperia series, including INY-3769, INY-4646, and INY-5775, have radiocarbon suites falling within the same range (Delacorte 1999; Faull 2006; Zeanah and Leigh 2002).

Latest Holocene (2000 to 150 cal BP)

In general, latest Holocene landforms expanded in valley bottom settings throughout the Great Basin and Mojave Desert as fan progradation continued. There are, however, clear proxies and many seminal studies indicating that during the last 2,000 years environmental shifts increased in frequency and amplitude congruent with variations in the impacts of regional climatic drivers (e.g., El Nino). At about 2000 cal BP, drought conditions forced regression of lakes that had returned in the late Holocene. Well-developed beach berms associated with late Holocene high stands at Mono and Owens lakes (Stine 1990), were abandoned as lakes retreated and then fluctuated, to form a complex series of concentric low-elevation beaches and berms.

Variation in regional environmental conditions, across an interval of almost 600 years, culminated in closely spaced droughts at about 850 and 600 cal years BP, i.e., the Medieval Climate Anomaly (Stine 1994). These intense dry events were punctuated by periods of relatively abundant precipitation; submerged tree stumps provide direct evidence of a significant medieval drought. The droughts were of such duration that large trees expanded to elevations below modern lake level in the Mono Lake Basin and Walker River. When moisture returned, the trees were rapidly inundated and preserved in growth position (Stine 1994). Though the evidence for drought was clear, Stine and others subsequently realized that the medieval period was characterized more by fluctuations than simply one extensive drought and lake regression.



Buried Prehistoric Hearth Exposed in East Wall of Gully near Southern End of Owens Lake, Inyo County

Stratified Late and Latest Holocene Alluvial Deposits Exposed in Exploratory Trenches Near Cantil, Fremont Valley, Kern County



Buried Soil and Archaeological Material Exposed in Alluvial Fan/Borrow Pit East of State Route 395 Near Little Lake, Inyo County

Buried hearth Deep Springs Valley, Inyo County (Lustig 1965)

Figure 44. Selected Views of Late and Latest Holocene Deposits in Deep Springs, Fremont, Little Lake, and Owens Valleys.

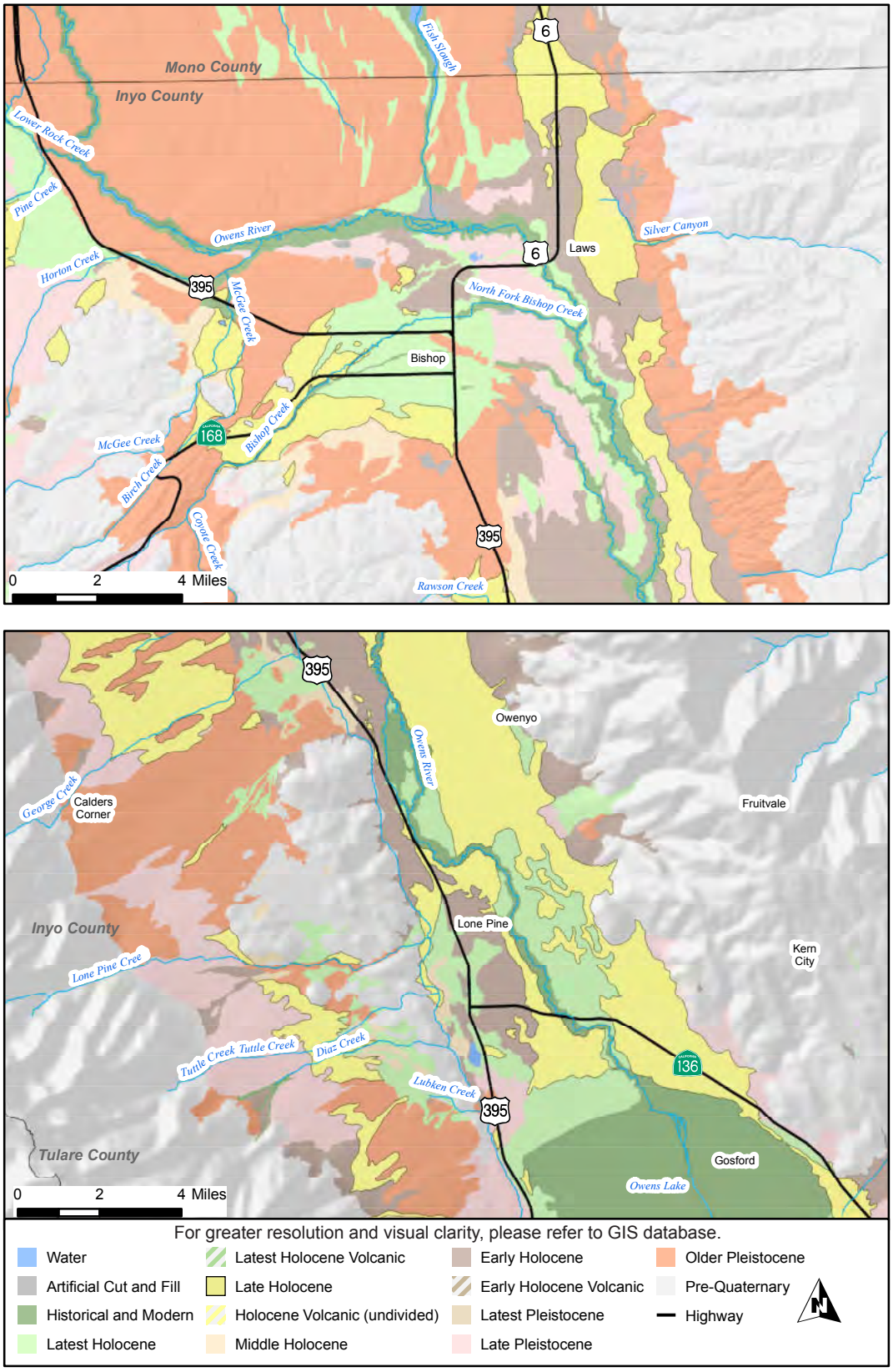


Figure 45. Late Holocene Deposits in the Upper Owens Valley (top) and Lower Owens Valley (bottom).

Fan progradation and fluctuating (though generally low) lakes and streams contributed large amounts of sediment toward valley bottoms. Stream flow in the Owens River appears to have cyclically flushed the fluvial system, delivering sediment to its drainage terminus at Owens Lake. Rearrangement of beaches and deltaic sediments resulted in the development of complex dunes and sand sheets on the basin margins. Radiocarbon dates from buried late and latest Holocene archaeological sites are relatively common, reflecting latest Holocene dune and lake-margin deposition (i.e., fans prograding to lake basins) in the basins of Mono Lake and Owens Lake. Landforms may have remained very unstable during fluctuations of the Medieval Climate Anomaly because equilibria between precipitation, surface cover, and runoff could not be maintained. Thus, environmental changes would have encouraged fan expansion and dune reworking, burying older landforms and associated archaeological sites. Fires may have also been common due to drying and wetting cycles and volcanism (see Chapter 5), allowing the incorporation of non-cultural charcoal commonly observed in latest Holocene deposits.

On the Owens floodplain, site MNO-584 contained surface archaeological features post-dating 500 cal BP (Garfinkel and Cook 1979). In Milner and Jeffrey Mine canyons in Mono County, non-cultural charcoal buried by active fans, including debris-flow facies, date to the beginning of the Medieval Climate Anomaly (Hubert and Filipov 1989). Incipient soil series, such as Brantel, Benemes, and Millner, have formed on these young fan and dune deposits.

The pattern continues further south. At site INY-1991, very recent archaeological features, most post-dating 500 cal BP (Byrd and Hale 2003; Markos et al. 1998) rest on young fans burying much older cultural deposits. Nearby, surface features at site INY-5967 are slightly older but still post-date the dramatic cycling of the Medieval Climate Anomaly (Byrd and Hale 2003). Lakeside fan segments expanded from late Holocene and earlier medial fan segments. A hearth buried by a small inset fan at the margin of Owens Lake (see Figure 44) returned a date of 490 cal BP (OS-71199). While this date provides age control for the late Holocene fan and soil series the feature was cut into, it also provides a maximum age for the youngest fans at the southeastern side of the lake. These fan deposits are marked by the widespread Cajon soil series.

In basins without significant river-lake systems, fan expansion and aeolian reworking filled valley-bottoms. The Cajon soil series has been described on expansive alluvial fills throughout much of the Mojave Desert segment of the Study Area, including on fans of southern Owens Valley, western Indian Wells Valley, Fremont Valley, and well into Antelope Valley (Figure 46). These broad basins, which are moderately sloping to almost level, often retain a very young surface veneer of distal fan and valley fills. Arcuate sand and silt dunes resting on very young distal fans are common at the margins of playas, such as Rosamond and Rogers lakes. Although pluvial histories of these shallow lakes are poorly understood, during much of the Holocene they functioned as catchment basins for fan runoff. Fluctuations encouraged dune development as the basins were repeatedly flooded, turbated, and then scoured.

At Rogers Lake, the Cajon and related Leuhman soil series formed on the distal fan segments and basin-side dunes (Figure 46). Radiocarbon dates on cultural material from buried and surface contexts in these soil series are consistently less than 2,000 years old (Byrd 1996; Byrd et al. 1994). The Cajon series extends northward into Fremont Valley on fans and valley fills. The latest Holocene fans form a thin alluvial veneer, and thicken near basin centers or along faulted troughs (Young 2009). Near Cantil, Sutton (1991) dated several deeply buried sites, including KER-2211, which provided three radiocarbon dates of less than 1210 cal BP. Nearby, Apple et al. (2008) and Young (2009) have dated numerous buried archaeological sites and other depositional contexts showing that the Cajon soil series formed on very young fan deposits (< 700 years old) and valley fill. Similar alluvial fan veneers extend from the mountain fronts on the western side of Indian Wells Valley. These shallow deposits, mapped as Cajon series soils, rest on abrupt contacts that pre-date 2000 cal BP. Young (2007) obtained a series of radiocarbon dates from underlying fan deposits which provides a maximum age of 2900 cal BP for these recent fans and the associated Cajon series (see Figure 44)

Contemporaneous fan progradation and dune activity occurred in Great Basin valleys east of the Owens Valley. In Deep Springs Valley, east of Bishop, archaeological charcoal buried by young fans mapped in the Veet soil series have been dated to 1290 cal BP (Ives et al. 1964; Lustig 1965; see Figure 44). Elsewhere in Deep Springs Valley, similarly young fans and dunes provided radiocarbon dates ranging from 1910 cal BP (buried) to 490 cal BP (surface; Lee et al. 2001); these dates succinctly bracket Medieval Climate Anomaly cycling.

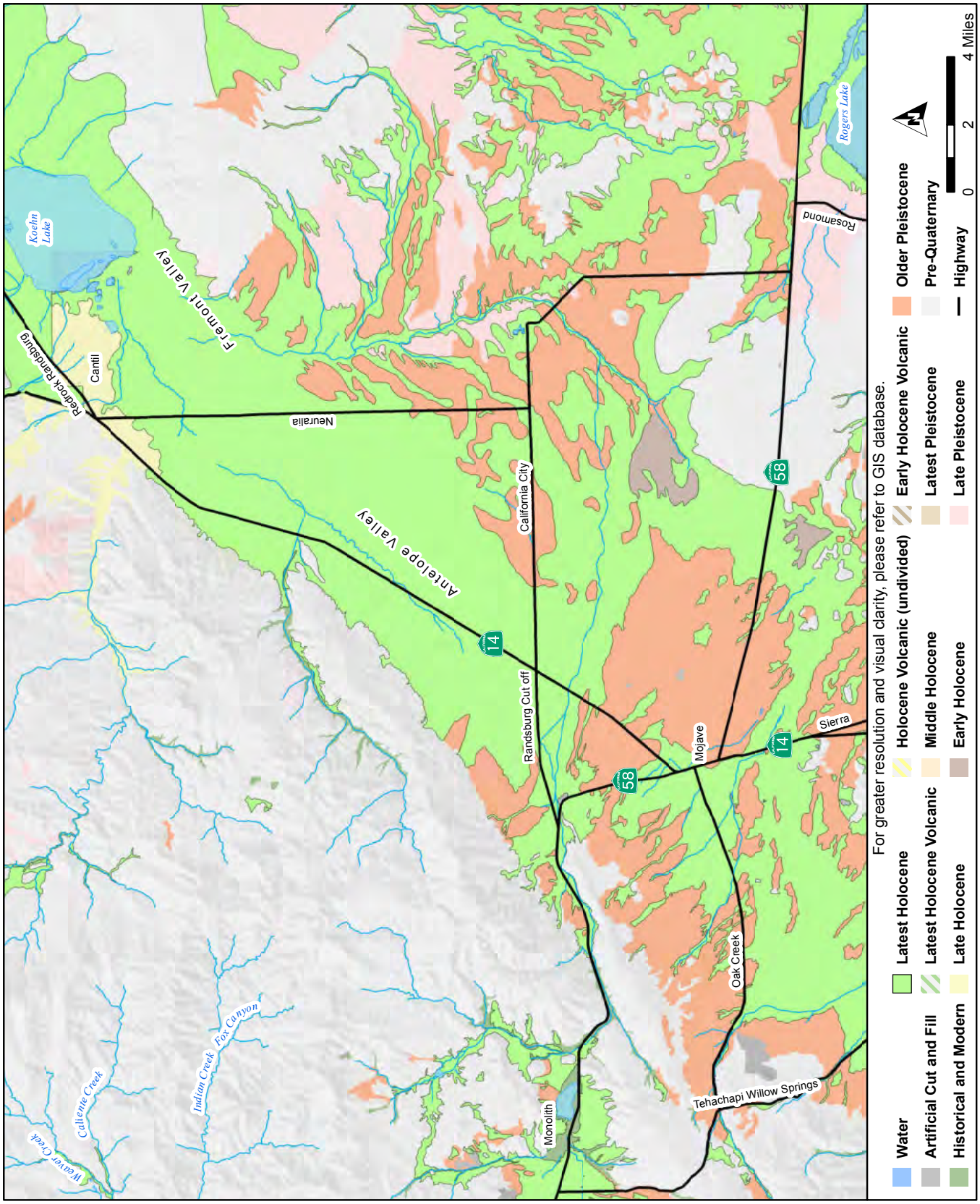


Figure 46. Latest Holocene Deposits in Antelope and Fremont Valleys.

In Panamint Valley and Death Valley, alluvial bajadas continued extensive progradation during the latest Holocene as alluvial fans encroached on valley centers. In dry periods, distal fan deposits and lacustrine relict landforms (e.g., beaches and berms) were reworked into the existing dune systems. Aeolian landforms throughout the Great Basin and Mojave Desert portion of the Study Area continued cycles of reworking initiated in the late Pleistocene and early Holocene. Radiocarbon dates from the active dunes are often very young, typically due to the highly idiosyncratic nature of dune preservation. Deflating cultural features in the Panamint Dunes are latest Holocene in age (Breschini et al. 1996). A burial at INY-2546, for example, was capped and then subsequently exposed by aeolian reworking over the past 750 years.

Because latest Holocene archaeological deposits occupy, and are readily visible on or very near the modern surface of all landforms, radiocarbon information and archaeological sites are well represented for this period. Understanding the extent and geometry of the latest Holocene landforms provides useful information on the potential for buried archaeological sites, primarily because the underlying surfaces may have been available for occupation for a very long period of time. A special case of this occurs in the Inyo/Mono region where volcanic deposits of very recent origin cap almost all landforms (see Chapter 5). This relatively unique situation makes surface archaeological inventory very limiting, as only those materials and sites post-dating latest Holocene eruptions will be visible.

Historic-Era to Modern (150 to 0 cal BP)

Of the small group of landforms dating to the Historic-era and modern period, most consist of playa surfaces, with all others relatively limited in size. The playas east of the Sierra Nevada are typically lakebed remnants of pluvial lakes (Benson 2004). Many of these basins experienced periodic inundations during the Holocene, reaching various high-stand elevations (Benson 2004; Benson et al. 1997; Stine 1990). Owens Lake, for example, may have reached its overflow sill in the earliest portion of the early Holocene and formed multiple shorelines and beach berms during lake transgressions, and brief stillstands in more recent times. In fact, a relatively large, though not too deep, lake might occupy the modern playa if upstream alterations (i.e., water diversions) had not occurred. So the Owens playa is a modern feature subject to aeolian deflation, not to mention human-engineered alteration. The playa and desiccated salt badlands of Death Valley, though encroached upon by valley margin alluvial fans, are also subject to deflation and other modern processes.

The playas of Rogers Lake and Rosamond Lake lack deep water deposits of the basins that once held vast pluvial lakes (Orme 2008), but the formation processes of playa development are similar. These basins were repeatedly inundated and occasionally held significant lake stands during the Holocene. Lake stands likely were short-lived, yet the basins may have supported wetland communities of plants and animals for periods of time. The surfaces, however, were mostly dry landscapes where deflation and nearby surface re-working were commonplace. Like the larger playa landforms in the Great Basin and northern Mojave Desert, these deflationary, occasionally flooded, features are grouped in the modern period.

In addition to these non-cultural deposits, a number of artificial landforms and engineered landscapes were created by human land-use changes in the Historic-era, with mining, agriculture, and the construction of transportation corridors (e.g., railroads, highways) and water impoundment and conveyance systems (e.g., dams and irrigation canals) being a few of the most obvious examples (Figure 48). By the early 1860s, valuable deposits of metallic minerals (i.e., silver, lead, gold, tungsten, and copper) and non-metals (e.g., borax, dolomite) were discovered and mined from several key areas known as the Bodie-Aurora, Late Mountain, Montgomery, Lone Pine, White Mountain, Keyes, Inyo, Russ, Coso, and Death Valley mining districts (Beddie 1864); listed roughly from north to south.

As mining activities reached a zenith between the 1870s and 1890s, food and forage demands of the miners and their livestock sparked a boom in local agriculture. By the 1870s, approximately 3,000 acres of the Owens River floodplain were already under cultivation and being systematically irrigated in the area between Alabama Hills and Poverty Hills (Lee 1912). As the population of people and mules reached into the thousands, a series of boom towns sprang up throughout the region (Figure 48). In the developed and populated town of Lone Pine, at least 27 (~10 %) of its residents were killed when a massive magnitude-8 earthquake struck the

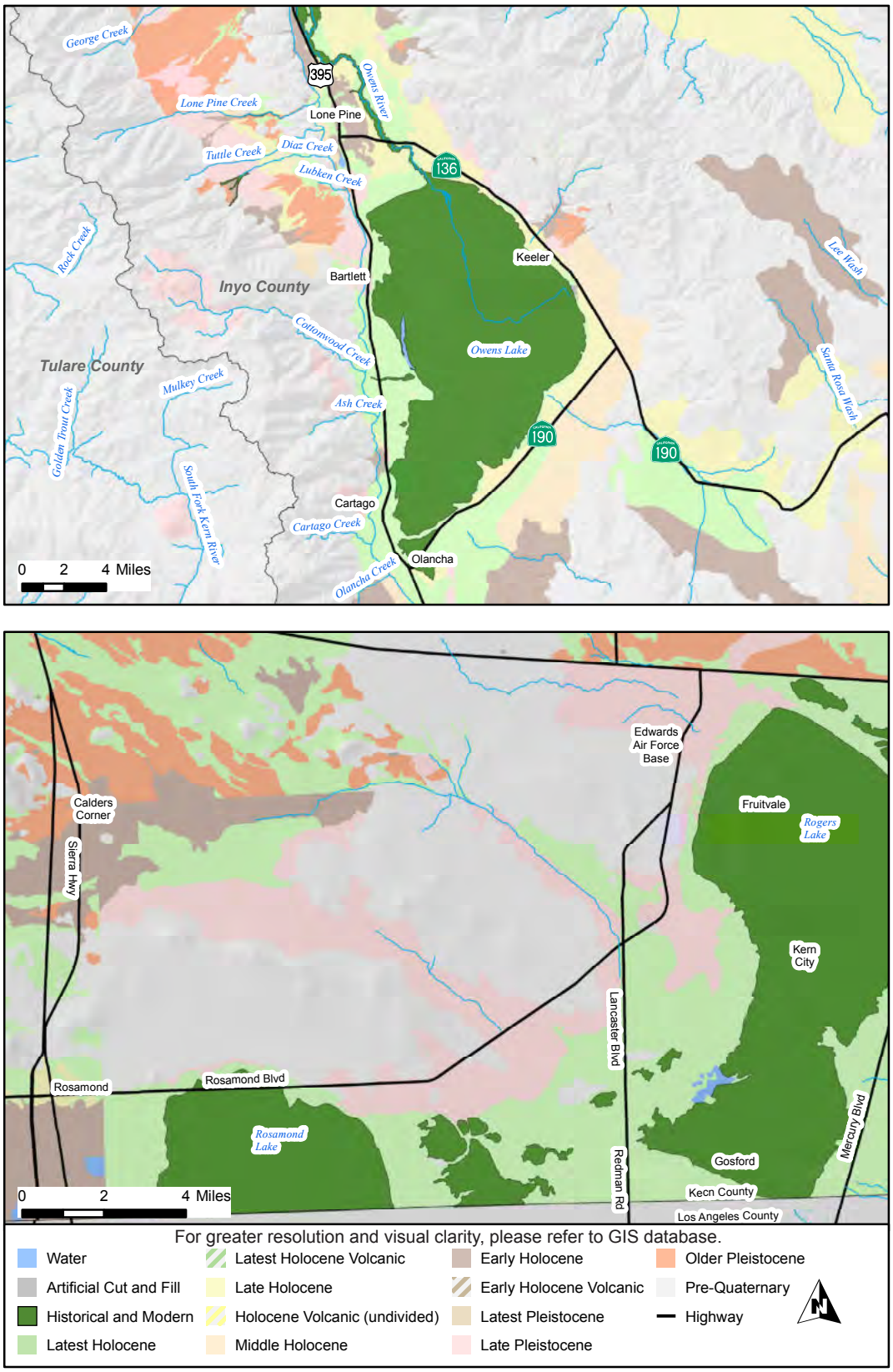


Figure 47. Historical to Modern Deposits in the Owens Valley (above) and Antelope Valley (below).



Modern Photo of Bodie HIlls Mining Town, Mono County



Upper Owens River in 1906, Crowley Lake Today



Crowley Lake Dam Across Owen River Gorge Today



Dredging L.A. Aqueduct Canal, Owens Valley, 1908



Dredging Main L.A. Aqueduct Canal, Owens Valley, 1909



Building Dam for Main Canal, Owens Valley, 1912



Building Road for L.A. Aqueduct, Owens Valley, 1907



Dirt Road (State Route 395) to Bishop, Owens Valley, 1927



Opening Paved Highway, Red Rocks Canyon, Kern Co., 1931

Figure 48. Historic-era Land Use and Landscape Changes in the Great Basin and Northern Mojave Desert in Portions of District 6/9.

Owens Valley in March of 1872 (Beanland and Clark 1994). That quake produced a large surface rupture that can be traced across much of the valley floor, creating a fault scarp with vertical displacement of as much as 4.4 meters (~14.4 feet) in some areas (Bacon et al. 2003; Beanland and Clark 1994; Lee et al. 2001).

By the early twentieth century, the growing demand for water prompted the city and county of Los Angeles to purchase land and the water rights to properties that stretched from the Mono Basin through all of Owens Valley, and parts of Rose and Antelope valleys. As a result, human activity and related ground disturbances (i.e., canals, dams, roads, and pipelines) increased dramatically as the first Los Angeles Aqueduct was constructed between about 1907 and 1912 (see Figure 48). As part of a second aqueduct project, a dam was constructed near the natural outlet of Long Valley, located in the upper Owens River drainage, and the lower part of the valley was flooded to create present day Lake Crowley (see Figure 48). Other dams were constructed along the Owens River north and south of Owens Lake, and portions of the valley flooded to create Tinemaha and Haiwee reservoirs. By the 1920s and 30s, many of the state rural highway routes were established and constructed, including much of State Route 395, with most segments located within the valleys of the region (see Figure 48).

Most of these artificial modifications to the landscape involved some amount of cutting or filling, which produced irregular surface contours that generally do not conform with the surrounding natural topography (i.e., abruptly steep or level), allowing many to be distinguished in the field. While not as extensive as deposits produced by natural processes, historical activities have undoubtedly disturbed or destroyed some archaeological sites, and buried or preserved others. Consequently, the role of Historic-era activities on the nature and completeness of the archaeological record is an important consideration for portions of the Great Basin and Mojave Desert regions.

SUMMARY AND DISCUSSION

Over the past 14,000 years, the stratigraphic and radiocarbon evidence amassed from the Study Area and surrounding region indicates that pervasive periods of land stability and soil formation, were interrupted by at least four major episodes of rapid sediment deposition that were equally widespread. The timing and extent of these geologic changes are, therefore, responsible for creating notable structural biases in the nature and completeness (e.g., visibility) of the region's archaeological record, as discussed below from the earliest to most recent.

Latest Pleistocene

Buried soils at several different locations record a period of latest Pleistocene land stability centered between about 13,900 and 12,900 cal BP (Figure 49). While these soils are best represented in the San Joaquin Valley, examples have also been documented at a handful of locations west of the Sierra crest, and at least two locations in the Mojave Desert. Dates from these soils and from some overlying deposits suggest they were buried by sediment deposited between about 12,900 and 11,500 cal BP, corresponding with the Younger Dryas cool interval and Pleistocene-Holocene climatic transition. Landforms of this age seem poorly represented at the present ground surface, with the only clear examples found in the San Joaquin Valley. These amount to only a little more than 4.5 percent of all depositional landforms exposed at the surface (see Figure 17). Consequently, the earliest evidence of human occupation in the region, such as Clovis and other components dating to the Paleo-Indian period, may be buried in association with these landforms.

Early Holocene

With the arrival of the Holocene came a renewed period of relative landform stability (soil formation) that extended through most of the early Holocene. As shown in Figure 49, buried soils dating to the early Holocene have been identified at dozens of locations in the upper Sierra Nevada, Great Basin, Mojave Desert, and San Joaquin Valley; none have yet been documented in the Temblor or Transverse ranges however. Though dates from these soils place the main period of stability between about 9800 and 7500 cal BP, the clustering of dates at 9800-9300 cal BP and at 8300-7800 cal BP suggests this period was interrupted, in

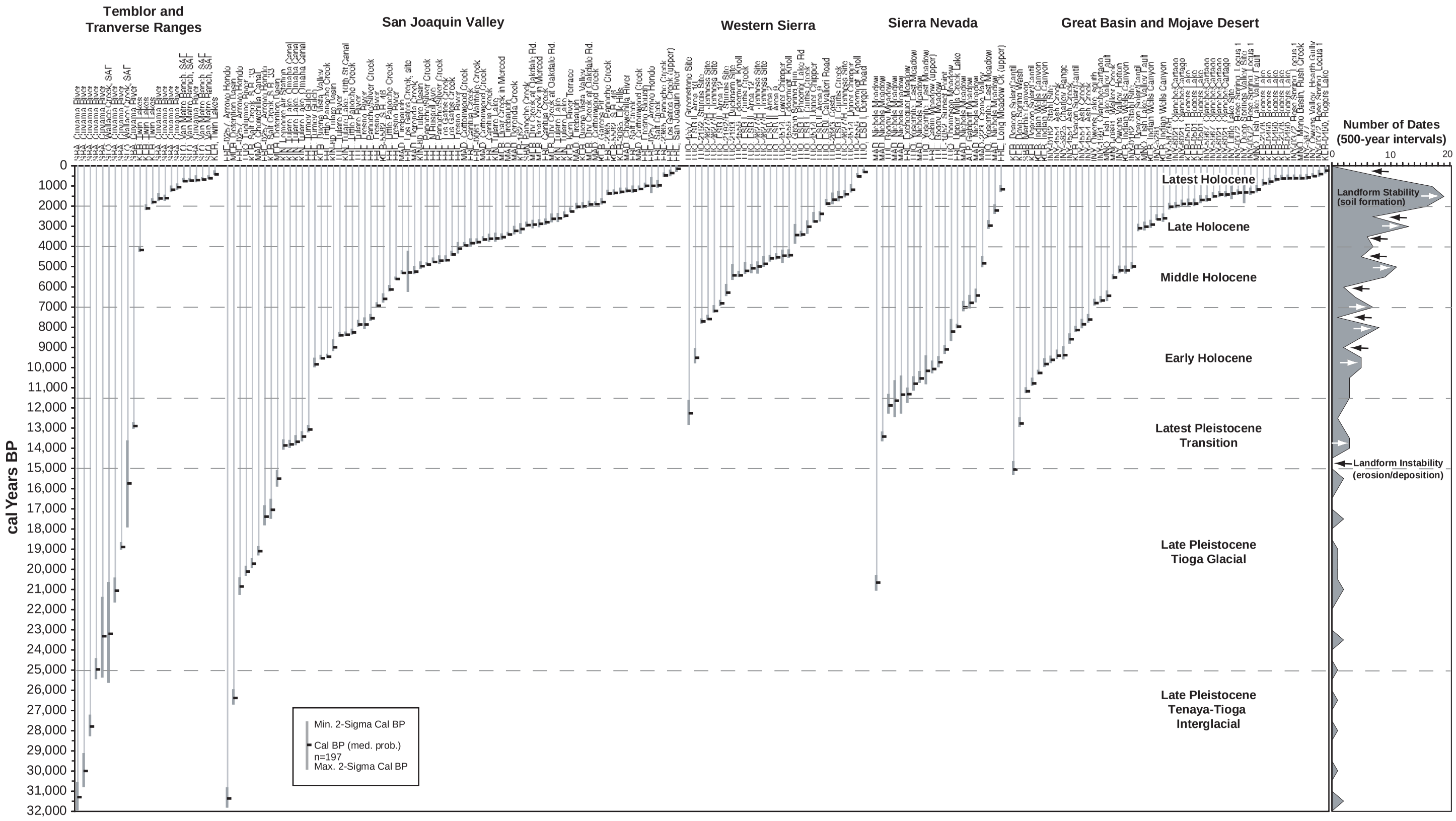


Figure 49. Comparison of Radiocarbon Dates from Buried Soils by Physiographic Region In and near District 6/9.

some areas, by deposition on one or more occasions. Land stability appears to have occurred earlier in the upper Sierra, Great Basin, and Mojave Desert regions than in the San Joaquin Valley, as no buried soils dating between about 13,000 and 9500 cal BP have yet been identified in the valley (see Figure 49).

During this stable period, the channels of many rivers and streams became deeply incised by down-cutting and/or widened by lateral migration. While relatively large bodies of early Holocene-age landforms occur at the surface in the eastern San Joaquin Valley, and in parts of Owens and Death valleys (see Figure 17), they account for 10.8 percent of all depositional landforms and 15.7 percent of all Holocene-age landforms exposed at the surface, including early Holocene volcanic deposits. Since landforms of this age are better represented in buried contexts than in surface contexts, it is likely that a substantial part of the early Holocene archaeological record is also buried (e.g., KER-116 and KIN-80).

Middle Holocene

Early Holocene soil formation and channel cutting were interrupted by a major depositional pulse between about 7000 and 6800 cal BP, widely evidenced in the Study Area and other parts of California (Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2004b). This likely resulted from increased precipitation and runoff that repeatedly met or exceeded the geomorphic threshold level, as explained at the beginning of this chapter. While most of these sediments were deposited in low-lying settings (i.e., basins, channels, and meander belts), they sometimes spilled onto the surface of surrounding floodplains as low-lying areas were overwhelmed. This pulse of instability was soon followed by another sustained period of soil development between about 6800 to 4500 cal BP, as indicated by more than two-dozen radiocarbon dates; most centering around 5400 cal BP (see Figure 49).

Middle Holocene-age surface landforms are very poorly represented in the Study Area, accounting for only 3.2 percent of all depositional landforms and 4.6 percent of all Holocene-age landforms exposed at the surface. Most are found in the arid valleys of the Great Basin/Mojave Desert (e.g., Rose Valley), and a few occur in portions of the San Joaquin Valley where they form relatively small and isolated bodies. Deposits of this age are most often found in buried contexts, and only rarely exposed at the present ground surface. Though middle Holocene sites can and do occur at or near the surface of landforms that are early Holocene or older, this pattern suggests that sites in certain locations (i.e., low-lying areas or near water) are under-represented because they were buried. This may explain why there is an apparent gap in the region's archaeological record during the middle Holocene as compared to earlier and later cultural periods.

Late Holocene

Landforms were once again destabilized between 4,400 and 3,600 years ago as arid conditions of the middle Holocene shifted toward wetter conditions of the late Holocene. This led to another major pulse of deposition around 4000 cal BP that is recognized throughout the region (Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2004b). These sediments were deposited mainly as alluvial fans, which are exposed at the surface in arid valleys of the Great Basin/Mojave Desert (e.g., Antelope, Fremont, Owens, and Saline valleys), and along part of the western San Joaquin Valley. Deposition was again followed by soil formation, as there are dozens of buried soils that date between about 3600 and 2200 cal BP, most centered at 2900 cal BP (see Figure 49). Though many occur in buried contexts, landforms of this age are more widely represented at the surface. They make up 11.4 percent of depositional landforms and 16.6 percent of all Holocene-age landforms. Since late Holocene landforms are more commonly exposed at the present ground surface, sites of this age should be better represented at the surface than those of earlier cultural periods.

Latest Holocene

As the climate became more variable after about 2200 cal BP, landforms again became unstable and a torrent of sediment was unleashed around 2000 cal BP (Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2004b). These sediments were deposited as extensive alluvial fans and floodplains that now form much of the present ground surface in valleys on both sides of the Sierra crest. A pronounced period of soil formation followed that may have been sustained and extended by drought conditions of the Medieval

Climatic Anomaly, as dates from latest Holocene-age buried soils center around 1100 cal BP (see Figure 49). While a second depositional pulse is recognized around 650 cal BP in some areas (Meyer 2008a; Meyer and Dalldorf 2004; Meyer and Rosenthal 1997, 2008; Rosenthal and Meyer 2004a, 2004b), it was not as intense or widespread as the 2000 cal BP episode.

While late Holocene deposits are often found in buried contexts, one-third (33.3%) of all depositional landforms and nearly one-half (47.7%) of all Holocene-age landforms have surface deposits that date to the latest Holocene. Latest Holocene landforms, therefore, make up more of the present ground surface than all Pleistocene-age surface deposits combined, which equal 31.5 percent overall). Thus, the current spatial extent of these landforms is greater than any deposit thought to have been formed by glacial outwash (i.e., Riverbank and Modesto formations). Since a large part of the present surface consist of latest Holocene landforms, sites of 2,000 years or less should be the best represented of any other cultural period.

CONCLUSION

Unlike previous models that relate landscape change to glacial cycles, this study shows that landscape evolution was driven by large-scale climatic shifts and associated environmental changes in the post-glacial era (i.e., Holocene). These changes are expressed in depositional sequences throughout the region as alternating cycles of landform stability and instability that occurred repeatedly during the Holocene, and often synchronously throughout the region (Figure 50). Though portions of the landscape have remained relatively stable since the last glacial maximum, others changed dramatically, long after prehistoric people had arrived and settled in the Study Area. While most sites in District 6/9 were buried by alluvial landscape changes, some sites were also buried by Holocene volcanic activity in portions of Inyo and Mono counties, as explored in the following chapter.

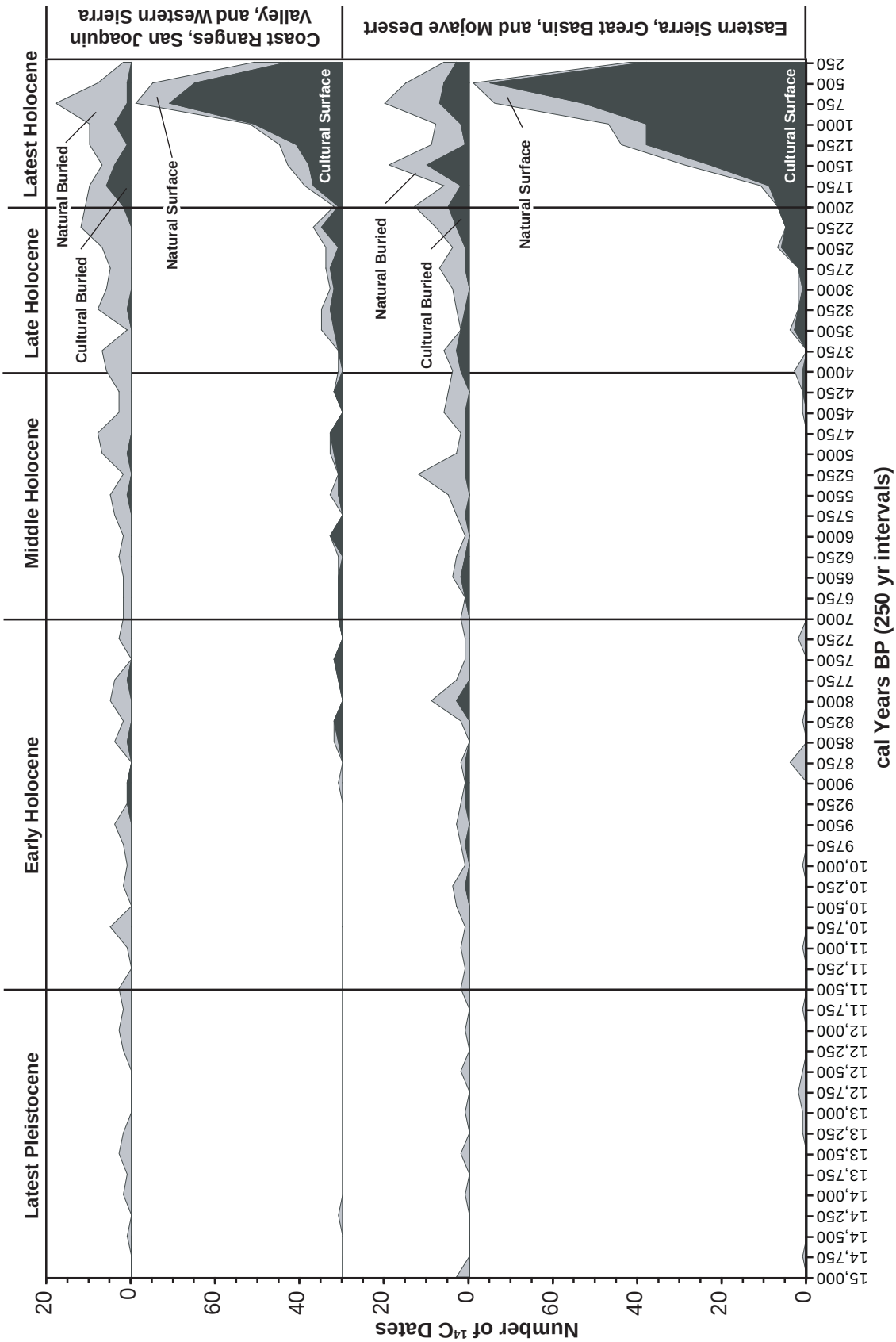


Figure 50. Comparison of Radiocarbon-Dated Surface and Buried Contexts from Eastern and Western Regions of District 6/9.

CHAPTER 5. ARCHAEOLOGY IN AN ACTIVE VOLCANIC REGION

The District 6/9 Study Area contains several major volcanic centers including the Kern, Kings, and San Joaquin volcanic fields west of the Sierra crest; the Big Pine, and Mono-Long Valley volcanic fields east of the Sierra crest; and the Aurora-Bodie, Darwin, Coso, Ricardo-El Paso Mountains, and Ubehebe volcanic fields further south and east in the Great Basin and Mojave Desert (Jessey 2009; Klinger 2001; Moore and Dodge 1980). These fields contain a variety of volcanic landforms such as ash (tephra) beds, coulees (sheets of solidified lava), cones, craters, domes, tuff rings, and flows, created by a combination of explosive (Plinian) eruptions, hydrothermal (phreatic) blasts, and the intrusion and extrusion of molten rock (magma) from craters and vents. Rocks produced by these processes typically include andesite, ash/tephra, basalt, dacite, rhyodacite, rhyolite, obsidian, pumice, and related rocks that are found in most but not all of the fields.

Volcanic landforms in the Study Area usually developed in a sequence that started with an explosive eruption, creating a tephra-rimmed crater, followed by pyroclastic flows and surges (Sieh and Bursik 1986). The sequence usually ended with the extrusion of viscous flows and the formation of a block-encrusted lava dome which sometimes grew until lava spilled over the tephra-rimmed crater to create a coulee (Wood 1977). Occasionally, the dome may have subsequently collapsed or exploded to produce a double crater.

Though south-central California has been volcanically active for several million years, only three of the volcanic fields, Coso, Mono-Long Valley, and Ubehebe, were active during the Holocene. While most of the Coso field, located in southern Inyo County, was formed more than 40,000 years ago (Moore and Dodge 1980), the field also contains a few cones, domes, and flows that are latest Pleistocene and Holocene in age (Monastero 2002; Monastero et al. 2005). To the north in Mono County, the Mono-Inyo volcanic chain contains dozens of Holocene-age magmatic and eruptive centers that extend more than 55 kilometers (34 miles) from near the south shore of Mono Lake to the southern end of the Long Valley caldera, along a north-south trending alignment (Miller 1985; Sieh and Bursik 1986).

Mono Craters contains at least 30 individual volcanic domes that are sequentially numbered from north to south in rough order (Bursik 1989; Bursik and Sieh 1989; Sieh and Bursik 1986). The Ubehebe volcanic field covers only about three square kilometers (1.2 square miles) at the northeastern end of the Cottonwood Mountains, near the intersection of the northern Death Valley and Tin Mountain fault zones, where it is blanketed mostly by basaltic cinders (Klinger 2001). The volcanic history of these fields is discussed below from the oldest to youngest examples.

VOLCANISM IN SOUTH-CENTRAL CALIFORNIA

> A cloud . . . was ascending, the appearance of which I cannot give you a more exact description of than by likening it to that of a pine tree, for it shot up to a great height in the form of a very tall trunk, which spread itself out at the top into a sort of branches; . . . it appeared sometimes bright and sometimes dark and spotted, according as it was either more or less impregnated with earth and cinders . . . ashes began to fall again, this time in heavy showers. We rose from time to time and shook them off; otherwise we should have been buried and crushed beneath their weight.
>
> ~ Gaius Plinius Caecilius Secundus, "Pliny the Younger"
> (Extracts from "Letters of Pliny" translated by William Melmoth, revised by F. C. T. Bosanquet 1905)

As a witness to the 79 AD (1871 cal BP) eruption of Mount Vesuvius, Pliny the Younger provides a vivid account of a single "Plinian eruption" like those that occurred repeatedly along the Inyo-Mono volcanic chain. The chain has generated no less than 20 such eruptions over the past 11,000 years—most in the late Holocene (<4000 cal BP), with at least ten occurring after the Italian cities of Pompeii and Herculaneum were

buried by Vesuvian eruption. Though there are no oral or written records of eruptions in the Long Valley-Mono Basin region, the stratigraphic record unequivocally shows they were at least as frequent and of a comparable magnitude as those that buried or destroyed large areas in the Mediterranean region during the Holocene.

Together these eruptive events spread hundreds of thousands of cubic meters of material across large portions of the Study Area (Sieh and Bursik 1986), depositing multiple layers of volcanic ash (tephra), pumice, and other pyroclastics that form important stratigraphic and chronologic markers across the region. These deposits covered the pre-existing landscape, burying many plants and animals on which resident human groups relied, along with previous camps and village sites. While the buried sites may not compare with Pompeii or Herculaneum, the rapidly deposited volcanic material should have similarly preserved their contents and systemic relationships in an almost "time-capsule" fashion. Thus, the volcanic activity of the Study Area has important implications for the nature and completeness of the archaeological record, for archaeological research (Hall 1983), and for implementing appropriate archaeological survey and excavation methods, particularly in Long Valley and Mono Basin. To this end, the following section examines the timing and extent of latest Pleistocene and Holocene volcanism in eastern California.

Latest Pleistocene (15,000-11,500 BP)

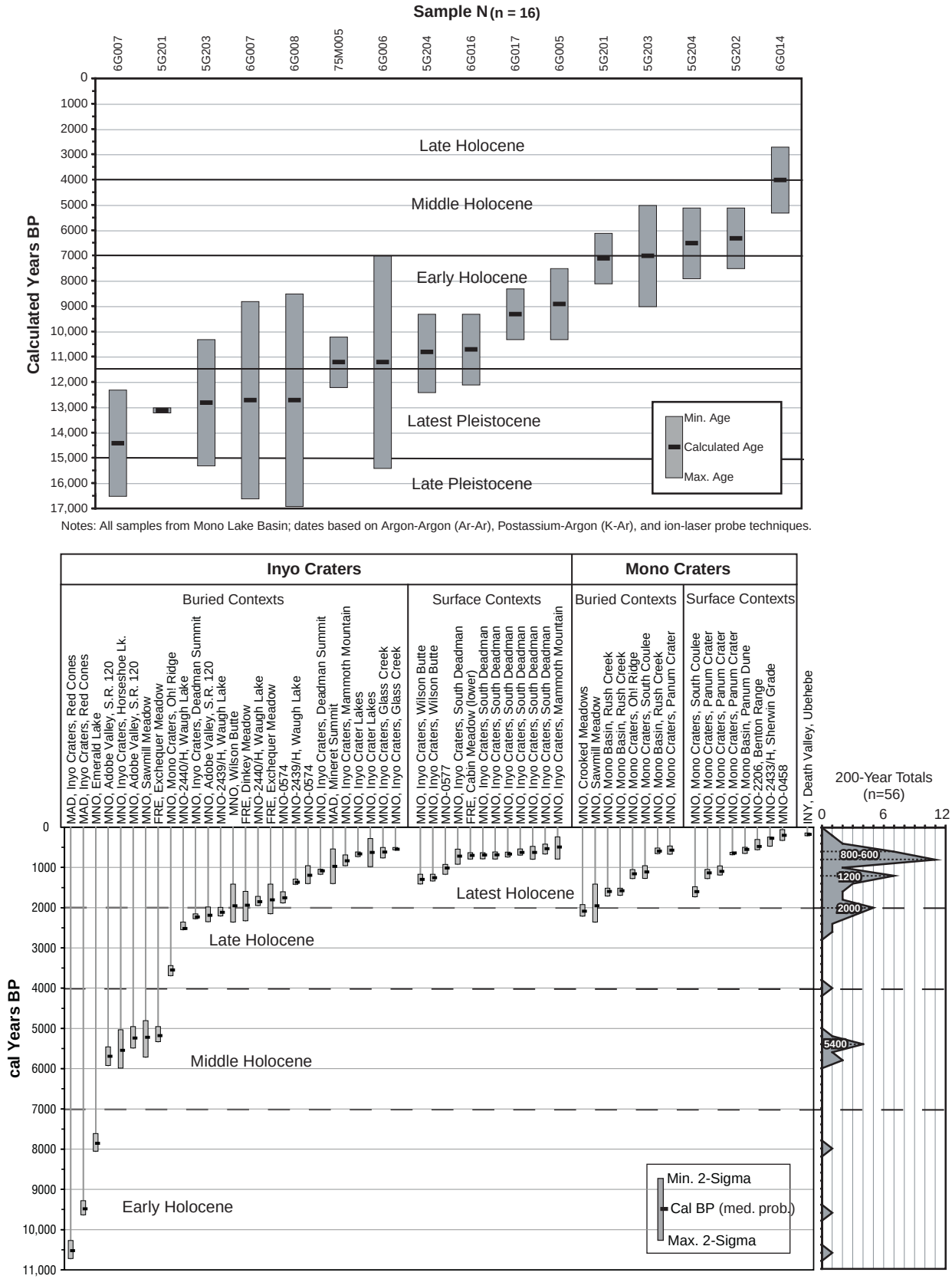
Radiometric evidence (i.e., radiocarbon, argon-argon, and potassium-argon dates) indicates that volcanism was infrequent and restricted to a few portions of the Study Area during the latest Pleistocene. While the Coso volcanic field may contain a few isolated cones and flows of this age, most are found within the Mono Craters volcanic field where several cones and lava flows date roughly between 14,500 and 13,000 years old (Figure 51) based on obsidian hydration, ion micro-probing, argon-argon, and potassium-argon dating of volcanic rocks (Bursik 1989; Hu et al. 1994; Reid 2003; Wood 1983; Zartman and Bush 1995). The only latest Pleistocene-age volcanic deposits that have been radiocarbon dated are those from Black Point, located on the northwest shore of Mono Lake (Figure 52). Black Point is a flat-topped (Surtseyan-style) tuff cone that formed beneath glacial Lake Russell soon after 13,300 ± 500 14 BP, or 14,575 cal BP (Denham and Cox 1971; LaJoie 1968), when the lake was almost ten times deeper than at present (Hill 2006; Schneider 2001). While other latest Pleistocene volcanic deposits are likely present in Inyo and Mono counties, most have yet to be dated with radiometric techniques.

Early Holocene (11,500-7000 BP)

As with the latest Pleistocene, there is only limited evidence of early Holocene volcanism in the Study Area, which appears to have been restricted to the Coso and Mono-Long Valley fields. For example, no tephra layers occur in the lacustrine sediments that date between 13,261 cal BP (GaK-01425) and 6013 cal BP (GaK-02486) at Black Lake in Adobe Valley (Batchelder 1970). As Figure 51 shows, several argon-argon or potassium-argon dates have been obtained from volcanic deposits in the Mono Craters segment of the Long Valley field that range between about 11,000 and 7,000 years in age (Hu et al. 1994; Zartman and Bush 1995). The age of Red Hill, a cinder cone located in the Coso field at the southern end of Rose Valley near Fossil Falls (Figure 53), is estimated to be about 10,000 years old based on geomorphic evidence (Jessey 2007), as is Dome 18 at Mono Craters based on ion micro-probe dating of the mineral allanite (Reid 2003).

A pair of isolated cinder cones and related deposits, collectively known as Red Cones (Figure 53), located at the southern end of the Inyo volcanic chain, date to about 9500 cal BP (Figure 51) based on radiocarbon dates from underlying deposits (Demming 2002). Ion micro-probe dating of allanite from Dome 6 and Dome 30 at Mono Craters indicates they are roughly 8,200 and 7,000 years old, respectively (Reid 2003). In addition, it appears that an unnamed volcanic cone on the northeast shore of Mono Lake is also early Holocene in age, based on 15 potassium-argon dates associated with the Wassit-series soil mapped on the cone's surface (Zartman and Bush 1995). Besides these, a few other early Holocene-age cones or flows are probably within the Coso field (Monastero 2002; Monastero et al. 2005), but their ages have yet to be confirmed.

In addition to local volcanic sources, volcanic ash derived from the Crater Lakes area in Oregon is found in some alluvial, lacustrine, and meadow deposits in the northern part of the Study Area, including Mono Lake



Notes: All samples from Mono Lake Basin; dates based on Argon-Argon (Ar-Ar), Postassium-Argon (K-Ar), and ion-laser probe techniques.

Figure 51. Radiometric (top) and Radiocarbon (bottom) Dates Associated with Volcanic Deposits in the Mono-Inyo Chain.

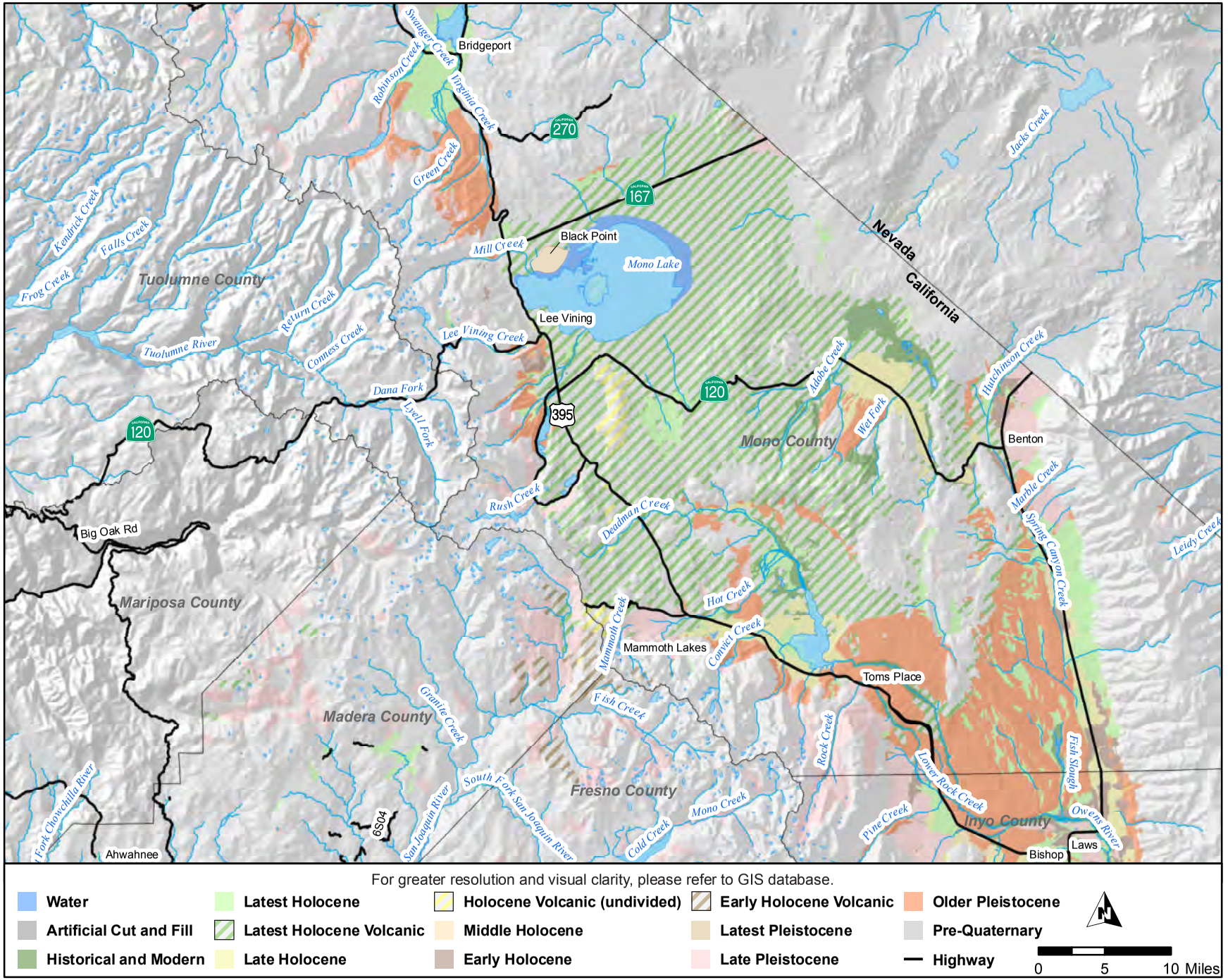


Figure 52. Distribution of Holocene Volcanic Deposits in the Mono-Inyo Craters Area.



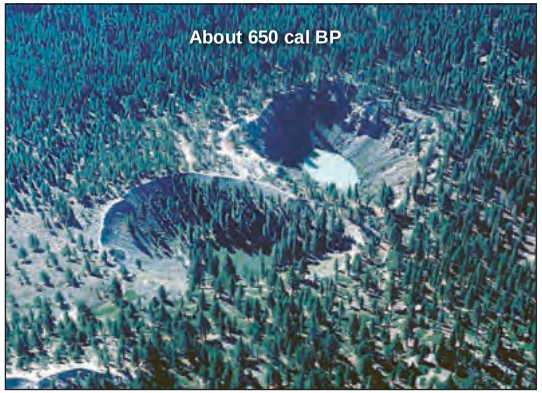
Ubehebe Crater, Death Valley (latest Holocene-age)



Little Hebe Crater in Ubehebe Field, Death Valley



Panum Crater, Mono Crater Volcanic Field, Mono Basin



Inyo Craters, Inyo Volcanic Field, Mono County


Inyo Craters Ash/Pumice


Mono Craters Ash/Pumice


Mono Craters (fore) and White Mountains (back) to East



Red Cones, Inyo Volcanic Field, Madera County



Red Hill Cinder Cone, Rose Valley to North



Red Hill Cinder Cone in Coso Volcanic Field, Rose Valley, Inyo County

Figure 53. Holocene-Age Volcanic Deposit in the San Joaquin Valley.

(Davis 1999b; Sarna-Wojcicki et al. 1991) and Hidden Lake (Potito et al. 2006), both in northern Mono County. Ash that erupted from this distant source was deposited over a large part of the northwestern United States in two separate layers, known as the Tsoyowata and the Mazama tephras, which date to about 7855 cal BP and 7675 cal BP, respectively (Bacon 1983). While these tephras are discontinuous and have a limited distribution, they serve as important chrono-stratigraphic markers in some parts of the Study Area. A summary of the locations where these tephras have been identified in California is provided in Table 10.

Table 10. Identified Deposits of Tsoyowata and Mazama Tephra in Northeastern California.

Location	Ash fall	Depth (cm)	Thickness of tephra (cm)	Associated 14C Date(s) (cal BP)	Reference
Tule Lake	Tsoyowata	177/228	8	n/a	Rieck et al. (1992)
Medicine Lake	Tsoyowata	152	2.5	>7710	Starratt et al. (2002)
	Mazama	148	2.5	>6900, <7710	Starratt et al. (2002)
Secret Creek	Mazama	n/a	reworked	n/a	McGuire (1997)
Grassy Lake	Tsoyowata	170-178	8	n/a	Edlund (1994b)
Osgood Swamp	Tsoyowata	170	±3	<7840	Adam (1967)
Bunker Lake	Tsoyowata	286-302	16	<	Edlund (1994a)
Gabbott Meadow Lake	Tsoyowata	196	discontinuous	<8375	Peak and Neuenschwander (1991)
Hidden Lake	Tsoyowata	347-351	n/a	<9611	Potito et al. (2006)
Lake Moran	Tsoyowata	229-232	3	<7735	Edlund (1991); Mensing and Southon (1999)
Lake Aloha	Mazama	20-22	2	>7605	Clark and Gillespie (1997)
	Tsoyowata	25-50	25	<7960, <7965	Clark and Gillespie (1997)
Swamp Lake	Tsoyowata	429	n/a	n/a	Smith and Anderson (1992)
Mono Lake	Tsoyowata	n/a	n/a	n/a	Sarna-Wojcicki et al. (1991)
	Mazama	n/a	n/a	n/a	Sarna-Wojcicki et al. (1991); Davis (1999b)

Middle Holocene (7000-4000 BP)

The reduced volcanic activity in the early Holocene extended into the first part of the middle Holocene (Batchelder 1970; Bursik 1989; Bursik and Sieh 1989; Miller 1985). As noted above, the earliest direct evidence of renewed activity comes from Black Lake, where a tephra (Ash 5) was deposited after 6013 cal BP (GaK-02486) and before 5693 cal BP (GaK-1853); (Batchelder 1970). While two potassium-argon dates from domes in the Mono Craters segment suggest they are about 6500 to 6300 years old (see Figure 51; Dalrymple 1967; Zartman and Bush 1995), a recent reevaluation of obsidian hydration evidence suggests that the oldest middle Holocene-age domes in this segment (Domes 18, 23, 25, and 30) are between 5,400 and 4,200 years in age (Meyn 2007). Further, a rhyolite dome north of Deadman Creek ("North Deadman Dome") in the Inyo Craters segment is estimated to be about 6,000 years old based on obsidian hydration comparisons, but since no explosive or magmatic activity is associated with this eruption (Miller 1985), it was not a source of tephra. Subdued activity is further confirmed by the near absence of middle Holocene-age tephra in the lacustrine sediments of Mono Lake (Davis 1999b).

As shown in Figure 51, the age of some volcanic deposits has been constrained by a handful of radiocarbon dates from overlying or underlying non-volcanic deposits. These include dates of 5693 cal BP (GaK-1853) and 5243 cal BP (GaK-1852) from peat deposits below and between volcanic ash layers at Black Lake in Adobe Valley (Batchelder 1970), a date of 5547 cal BP (W-734) from deposits overlain by Inyo Crater pumice near Horseshoe Lake (Rubin and Alexander 1960), a date of 5223 cal BP (W-3473) from peat beneath multiple ash layers in Sawmill Meadow (Figure 54, Wood 1983), and a date of 5179 cal BP (Beta-17184) from organic sediment below Inyo Craters ash and above an unknown ash (possibly the Tsoyowata or Mazama tephra) at Exchequer Meadow in Fresno County (Davis and Moratto 1988). An unidentified ash found within the sediments of Mono Lake that dates to 4083 cal BP (AA-06837) is the youngest middle Holocene-age tephra yet identified in the region (Davis 1999b). This suggests that the Mono-Long Valley field experienced a modest increase in volcanism and explosive activity around 5400 cal BP that appears to have subsided or stopped completely by 4,000 years ago.

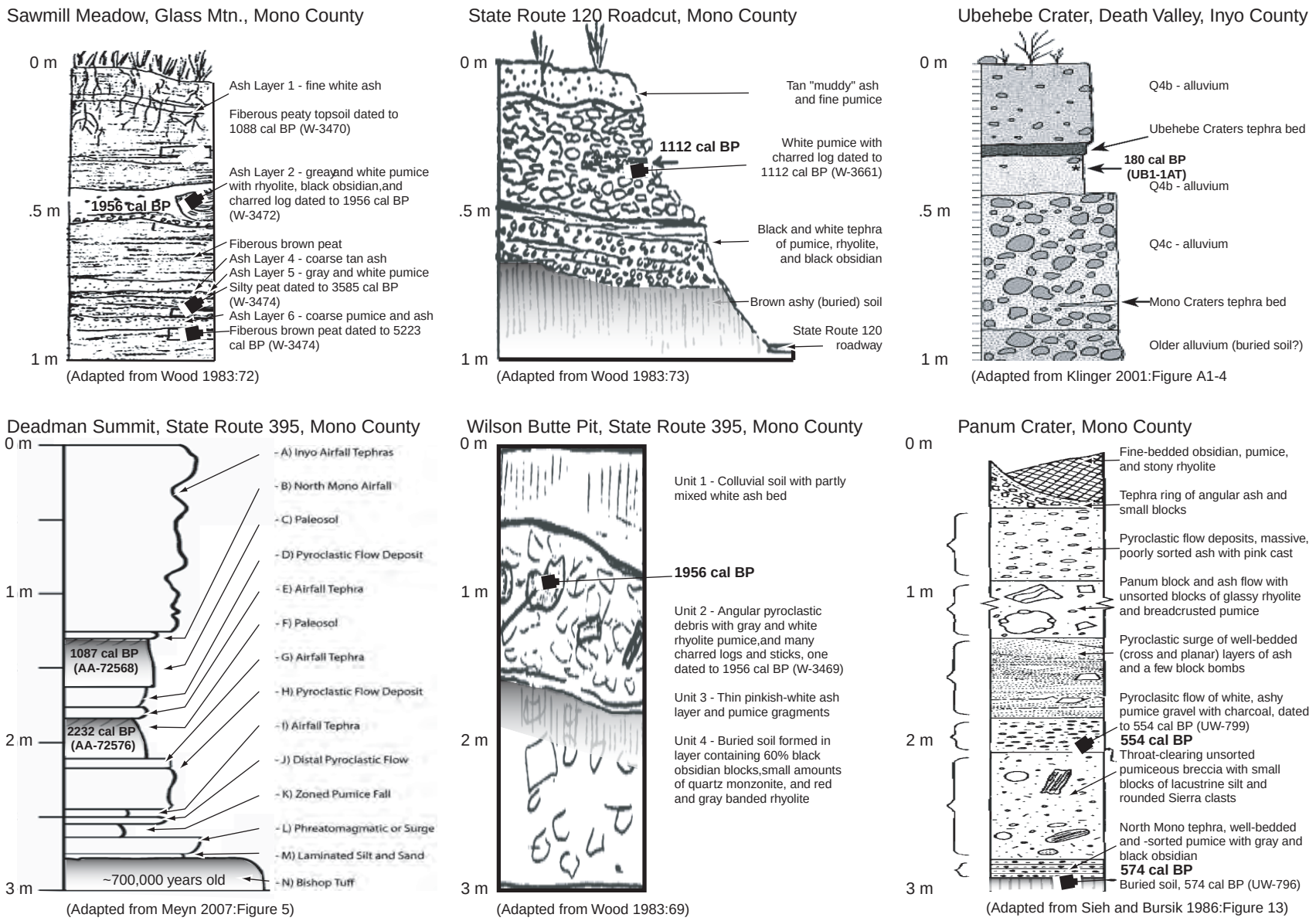


Figure 54. Radiocarbon-Dated Holocene-age Volcanic Strata in the Study Area.
(Note: different vertical scales on top and bottom rows.)

Thus, apart from the one tephra at Mono Lake and the tephras at Black Lake, there is comparatively little evidence of explosive volcanic activity in the region during the middle Holocene. It does appear, however, that during this time at least one dome (North Deadman) was emplaced in the Inyo Craters segment, and a few small domes and related flows were formed in the Mono Craters segment.

Late Holocene (4000-2000 BP)

For the next 1,800 years, between about 4000 and 2200 cal BP, volcanic activity was again subdued and restricted solely to the Mono-Inyo volcanic chain (Miller 1985; Sieh and Bursik 1986; Wood 1977, 1983). Obsidian hydration and potassium-argon evidence indicate that at least four silica-rich rhyolite domes (Dome 14, 17, 20, and 27) were emplaced at Mono Craters between about 4,000 and 3,000 years ago (see Figure 51; Dalrymple 1967; Meyn 2007; Wood 1983; Zartman and Bush 1995), with Dome 22 and 26 formed during a later episode around 2,070 years ago (Meyn 2007).

Deposits buried by volcanic ash at Deadman Summit along State Route 395 within the Inyo Craters segment record a sudden increase in explosive eruptions at 2232 cal BP (AA-72576; Figure 54; Meyn 2007). To the east, at Black Lake in Adobe Valley, a nearly identical date of 2192 cal BP (GaK-2476) was obtained from peat below a layer of ash originating from Mono or Inyo craters (Batchelder 1970). Tephra from Mono or Inyo craters also appears to overlie portions of archaeological site MNO-2439, located to the west near Waugh Lake, where the underlying cultural deposits date to 2115 cal BP (Beta-121306); (Jackson and Morgan 1999). Thus, tephra was deposited over much of the surrounding area between about 2,200 and 2,100 years ago.

Latest Holocene (2000-150 BP)

During the latest Holocene, a pronounced increase in volcanic activity occurred within the Mono-Inyo volcanic chain that was far more explosive and extensive than before, which equaled or exceeded that of the previous 10,000 years (Sieh and Bursik 1986; Miller 1985 Wood 1977, 1983). Obsidian hydration evidence, for instance, suggests that five of the Mono Crater domes (Dome 9, 13, 15, 22, and 22) were emplaced between about 1,800 and 1,000 years ago, with another five (Dome 3, 4, 5, 7, and 8) formed between about 800 and 600 years ago (Bursik 1989; Meyn 2007; Wood 1977, 1983). One of these domes generated the Mono Craters obsidian flow. The age of these domes are consistent with radiocarbon and stratigraphic evidence from volcanic deposits throughout the region which show a major episode of volcanism around 1200 cal BP, and another centered near 700 years ago (see Figure 51).

Volcanic deposits dating to the latest Holocene have been identified at dozens of locations throughout the region. Among these are identical dates of 1956 cal BP from charred logs found embedded within volcanic deposits in a gravel pit at Wilson Butte along State Route 395 north of Crestview (W-3469) and in Sawmill Meadow at Glass Mountain (W-3472), and a date of 1112 cal BP (W-3661) from a road cut along State Route 120 north of Benton (Wood 1983). As shown in Figure 54, Mono Craters ash from Sawmill Meadow (Wood 1983) and from Deadman Summit along State Route 395 produced next to identical dates of 1088 cal BP (W-3470) and 1087 cal BP (AA-72568; Meyn 2007). Additionally, at archaeological sites MNO-2440 and MNO-2439 near Waugh Lake, cultural deposits dating to 1854 cal BP (Beta-117216) and 1367 cal BP (Beta-121307), respectively, are buried by Mono or Inyo craters tephra (Jackson and Morgan 1999), while those at site MNO-574, located along State Route 395 near the Mammoth Scenic Loop junction, are between 1755 and 1197 cal BP (Beta-29480 and Beta-29479; Goldberg et al. 1990).

In the Mono Craters area, at least one moderate to large Plinian ash eruption may have occurred at Panum Crater between about 1135 and 1100 cal BP (Kilbourne and Anderson 1981; Wood and Brooks 1979), and another occurred between 574 and 554 cal BP, that spread a blanket of ash, pumice, and other pyroclastic debris (North Mono Craters tephra) over most of the Mono Lake Basin (Sieh and Bursik 1986). During the past 2,000 years, the intrusion of magma and episodic eruptions from beneath Mono Lake led to the formation of Negit Island, which lies in the north-central part of the lake (see Figure 52; Stine 1987). One exceptionally violent event around 1700 cal BP created thousands of blocks of vesicular pumice that floated on the lake until they shoaled around its shoreline. Near the center of Mono Lake lies Paoha Island (see Figure 52), which was created by a similar series of eruptive events around 265 cal BP, making it the youngest addition to the Mono Craters volcanic

chain (Stine 1987). Besides the creation of the Mono Islands, at least three of these volcanic episodes (Paoha Island included) generated ash that was presumably deposited throughout much of the Mono Basin.

Plinian-type eruptions and steam-driven (phreatic) explosions also occurred along the Inyo segment (i.e., Glass Creek and South Deadman domes) between about 600 and 500 cal BP that blew huge amounts of debris into the air (Miller 1985). Deposits of ash and pumice from at least three separate Inyo eruptions during this interval have been traced over hundreds to thousands of square kilometers, ranging from a few centimeters thick at the outer edges to as much as 25 meters (82 feet) thick near the source vents (Miller 1985; Wood 1977). Some of these materials were subsequently reworked and redeposited by alluvial processes and, in at least one case, pumice completely filled a formerly active channel of the Owens River just north of present-day Lake Crowley in Mono County (Bursik and Reid 2004; Reid et al. 1998).

The last major eruption of Inyo Craters around 478 cal BP caused a pyroclastic debris flow, known as a lahar, to move down the canyon of Glass Creek and into the upper Owens River Valley (Bursik and Reid 2004). The lahar ran up the sides of the canyon to a height of about 35 meters (115 feet) above the present stream level, and extend downstream to the present north shore of Lake Crowley; a distance of at least 30 kilometers (18.6 miles). The channel of Glass Creek has since become incised below the surface of these deposits, which now form a series of flat terraces in the canyon, generally less than ten meters (33 feet) wide. One of the largest and most recognizable segments of the lahar sits west of State Route 395 at Crestview, near a point where Glass Creek exits the canyon.

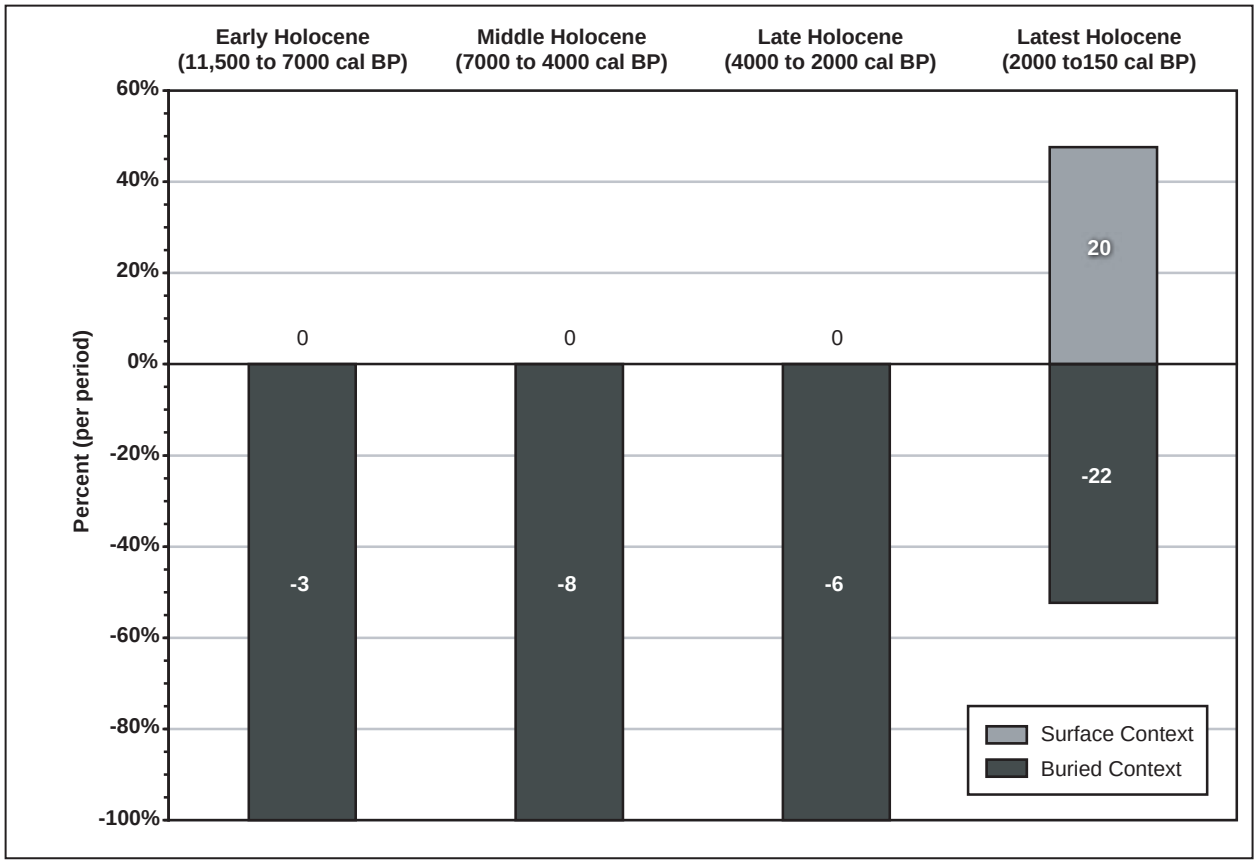
While the cause of the lahar is uncertain, some debris flows may have been triggered by the intense thunderstorms and rainfall that accompany some Plinian eruptions. This assertion is based on the repeated occurrence of undisturbed beds of Mono-Inyo tephra buried by debris flows at more than 20 sites in western Nevada, which generally date to less than 1400 cal BP (Bell and House 2007). Researchers argue that these stratigraphic associations are not random coincidence but are linked to the many Plinian eruptions generated by the Mono-Inyo volcanic chain over the past 1,400 years. They explain that the enormous ash plumes released by Plinian eruptions "can entrain very large quantities of moisture from exsolved magmatic water and condensation during atmospheric rise of the eruption column, possibly amounting to hundreds of metric tons of water" (Bell and House 2007:221). They also note that these eruption-driven storms are usually electrically charged, and can generate lightning that may have triggered widespread fires on the ground, and point to the regular associations of tephra, charcoal, and debris flows identified in the White Mountains and Fish Lake Valley near the California-Nevada state line (Reheis 1996). Thus, these eruptions not only resulted in the deposition of ash, but the ash deposits were in some cases buried and preserved by volcanically induced debris flows.

Implications for Human Occupation and Preservation of the Archaeological Record

From this review it is clear that latest Holocene volcanic activity was as active as any time since the arrival of people in south-central California. Because volcanism was extensive and recurrent over the last two millennia, it "may have had persistent direct and indirect, and cumulative effects on prehistoric economic, demographic, and land-use patterns in the eastern Sierra and adjacent region" (Hall 1983:191). The violent eruptions and pyroclastic fallout may have threatened and even killed some prehistoric residents, and likely forced others to relocate or adapt to the newly formed volcanic landscape. At the same time, many older archaeological sites within the Long Valley and Mono Basin area were likely buried by Mono-Inyo Craters tephra, and/or by the debris flows that accompanied some of the Plinian eruptions (Bell and House 2007). As shown in Figure 55, sites that post-date the highly eruptive period between about 2000 and 500 cal BP are probably far better represented at the surface than those that pre-date this period.

THE PREHISTORIC USE OF OBSIDIAN IN SOUTH-CENTRAL CALIFORNIA: TEMPORAL AND SPATIAL ASPECTS

In addition to the effects that Holocene volcanism may have had on site visibility and human populations that lived in eastern California (e.g., Hall 1983), obsidian deposits associated with each of these volcanic fields became an important prehistoric commodity that was widely used and traded across California and into western



Note: Dates from both natural and cultural contexts included.

Figure 55. Percentage of Radiocarbon Dates from Surface and Buried Volcanic Contexts.

Nevada, beginning as early as the latest Pleistocene. Within the District 6/9 Study Area there are no fewer than six geochemically distinct obsidian sources (Bodie Hills, Casa Diablo, Coso, Fish Springs, Mono Glass Mountain, Mono Craters), with numerous definable sub-sources that were quarried prehistorically (e.g., Ericson 1977; Hughes 1994; Jackson 1974). Despite the attention given to obsidian by archaeologists, we continue to know very little about the quarries themselves, the timing of obsidian exploitation at these localities, or the geographic distribution of this material through human conveyance. Initial studies of prehistoric exchange began the inquiry into broad-scale patterns of obsidian distributions (e.g., Ericson 1977; Jack 1976; Jackson 1974), but few recent studies have updated or refined this work (but see Bouey and Basgall 1984; Gilreath and Hildebrandt 1997; Sutton and Des Laurier 2002). For the most part, modern research has focused on obsidian use within more geographically restricted areas, forgoing extra-regional analyses to better understand local land-use patterns (e.g., Basgall 1989; Hughes and Bettinger 1984; King et al. 2008; Roper-Wickstrom 1992; Stevens 2002). Yet, broad-scale patterns remain important and local material conveyance cannot be adequately assessed without this regional context.

Along with studies that examine the distribution of different obsidian sources across the landscape, this material has also become an important chronological tool for archaeologists working throughout south-central California. Obsidian hydration measurements are now commonly used to provide relative age estimates for individual artifacts and entire site assemblages. In a few instances, source-specific hydration rates have been developed (e.g., Basgall 1990; Stevens 2002); however, most sources continue to lack a reliable hydration rate model, making it difficult to determine the true age of obsidian artifacts. Further, ongoing research has shown that a myriad of other intrinsic and environmental properties make hydration rate conversions imprecise and often grossly inaccurate. This is particularly true for the earliest time periods, where existing rate models prove most unreliable. Because of this, we are sorely in need of hydration anchors which provide limiting values for the earliest human-derived artifacts and allow for an assessment of the initial timing of quarry activities at each source locality. As a first step in this direction, the following discussion examines both the temporal and spatial parameters of obsidian use in south-central California.

The Timing of Obsidian Use in South-Central California

Among the well-studied obsidian quarries in the Study Area are those in the Coso Volcanic field where more than 4,000 obsidian hydration readings are available, revealing human use of this quarry from the latest Pleistocene through the Holocene (Gilreath and Hildebrandt 1997). Other studies of obsidian quarries such as Bodie Hills have been much more limited in scope, documenting mainly late Holocene exploitation (e.g., Jackson 1984; Singer and Ericson 1977); although, Halford (2008) has recently documented early Holocene use of secondary alluvial cobbles derived from the Bodie Hills source. The lack of focused hydration work at most quarries makes it difficult to judge when they were first used by early foraging groups. Furthermore, even when thousands of hydration readings are available, such as in the Coso Volcanic field, it has been difficult to separate evidence of early human activity from hydration bands that developed through natural breakage. To overcome this problem, we compiled 8,291 source identifications and obsidian hydration readings from 390 archaeological sites throughout the District 6/9 Study Area, the majority of which are located away from primary and secondary sources of obsidian. To better establish naturally from culturally derived hydration readings, we compared the regional obsidian hydration profiles to those obtained from 249 of the earliest well-documented obsidian tools in this region—fluted and basally thinned concave-base projectile points, Great Basin stemmed points, and flaked stone crescents. These data are summarized in Table 11 and Table 12 and Figure 56.

Multiple hydration readings from latest Pleistocene and early Holocene diagnostic artifacts were only available for four sources in the Study Area—Coso, Bodie Hills, Casa Diablo, and Fish Springs. Notwithstanding the three readings from early points made of Mono Glass Mountain, it appears that Coso, Casa Diablo, Bodie Hills, and to a much lesser extent, Fish Springs, were the main obsidian sources from south-central California utilized during the terminal Pleistocene and early Holocene. Fluted concave base points (c.f., Clovis) are typically believed to be the earliest point forms in western North America (e.g., Moratto 1984), an assumption supported by the limited obsidian hydration information available from these artifacts (see Table 11). The presence of fluted points made of Coso, Bodie Hills, and Mono Glass Mountain obsidians in the regional sample clearly shows that these source materials may have been used as early as 13,200 to 12,800 cal BP (Waters and Stafford 2007).

Table 11. Obsidian Hydration Summary Information for Latest Pleistocene and Early Holocene Artifacts by Source.

Type	Count	Mean (µ)	Range (µ)	S.D.	C.V.
Bodie Hills					
Concave Base - Fluted	2	12.5	10.2-14.7	3.2	0.26
Concave Base	3	7.1	6.3-8.1	0.9	0.13
Stemmed	20	7.3	5.0-11.9	1.7	0.23
Casa Diablo					
Concave Base	26	9.7	6.1-12.2	1.5	0.15
Stemmed	68	8.2	3.9-14.0	2.1	0.26
Crescent	7	10.6	7.6-13.5	1.8	0.17
Coso					
Concave Base - Fluted	2	17.1	15.7-18.4	1.9	0.11
Concave Base	8	13.8	8.2-21.1	4.9	0.36
Stemmed	80	13.1	4.9-19.7	3.0	0.23
Crescent	5	10.5	7.9-13.2	2.3	0.22
Fish Springs					
Concave Base	3	7.2	5.2-8.3	1.7	0.24
Stemmed	3	6	5.8-6.3	0.3	0.05
Mono Glass Mountain					
Concave Base - Fluted	1	10.8	-	-	-
Stemmed	2	11.3	10.6-11.9	1.3	0.11

Notes: S.D. – Standard deviation; C.V. – Coefficient of variation.

Table 12. Obsidian Hydration Summary for Latest Pleistocene and Early Holocene Artifacts by Region and Source.

Region	Type	Count	Mean (µ)	Range (µ)	S.D.	C.V.
Bodie Hills						
Mojave	Concave Base - Fluted	1	14.7	-	-	-
Great Basin	Concave Base - Fluted	1	10.2	-	-	-
	Concave Base	1	8.1	-	-	-
	Stemmed	6	8.4	5.9-11.9	2.16	0.26
Upper Sierra	Concave Base	2	6.6	6.3-6.9	0.42	0.06
	Stemmed	6	6.4	5.0-7.3	1.01	0.16
Sierra Foothills	Stemmed	8	7.2	5.2-8.9	1.3	0.18
Casa Diablo						
Mojave Desert	Stemmed	1	8.7	-	-	-
Great Basin	Concave Base	24	9.7	7.5-12.2	1.25	0.13
	Stemmed	30	7.0	4.1-9.8	1.56	0.22
Sierra Foothills	Stemmed	10	7.8	5.3-11.2	1.6	0.21
San Joaquin	Concave Base	2	9.1	6.1-12.1	4.2	0.46
	Stemmed	26	10.0	5.3-11.2	1.3	0.13
Coso						
Mojave	Concave Base - Fluted	2	17.1	15.7-18.4	1.9	0.11
	Concave Base	4	14.4	8.2-21.1	5.3	0.37
	Stemmed	64	13.5	4.9-19.7	2.9	0.22
Great Basin	Stemmed	10	12.0	6.0-16.3	3.03	0.25
San Joaquin	Concave Base	4	13.0	9.0-19.8	5.1	0.39
	Stemmed	6	10.7	6.1-14.6	2.9	0.27

Notes: S.D. – Standard deviation; C.V. – Coefficient of variation.

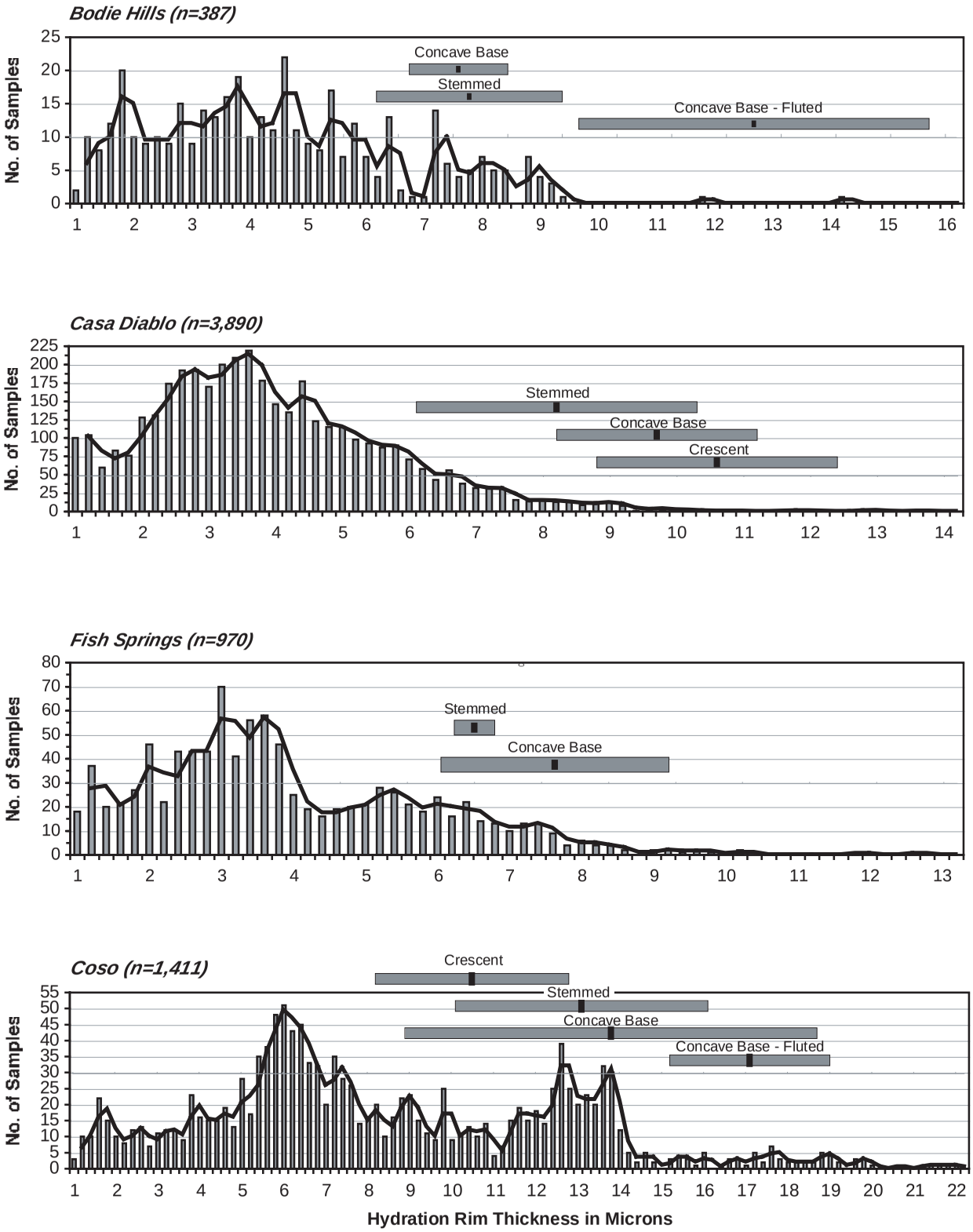


Figure 56. Obsidian Hydration Profiles for Main Sources Utilized in the Study Area.

As a baseline for human use of California obsidians, hydration information from fluted and other concave base points indicates that readings on Coso obsidian up to about 21 microns are likely to be legitimate evidence of latest Pleistocene use of this material (see Figure 56). Likewise, readings from Bodie Hills up about 15 microns and Mono Glass Mountain up to about 12 microns also appear to relate to latest Pleistocene or earliest Holocene human use (see Table 11). Although no fluted points are reported from Casa Diablo obsidian, hydration readings associated with this source material ranging up to about 14 microns may also derive from human use during the latest Pleistocene or early Holocene. Because drastically different temperature regimes prevailed east and west of the Sierra Nevada and between the Great Basin and Mojave Desert during the Holocene, it is expected that warmer regions (e.g., the Mojave Desert) will generate thicker hydration rims than cooler regions (e.g., the Sierra Nevada and western Great Basin). This result is evident in the data presented in Table 12, demonstrating that points from the Mojave Desert always produce larger hydration readings than similar types from cooler regions to the north and northwest. Likewise, points from the upper Sierra have thinner rims than those from the Sierra Foothills. These patterns indicate that different maximum values will characterize the earliest use of each obsidian source in different regions.

The largest readings from Bodie Hills and Coso obsidians originate from the Mojave Desert—14.7 and 21.1 microns, respectively. In the Bridgeport-Long Valley-Owens Valley region, where the Bodie Hills and Casa Diablo sources are located, maximum hydration readings on artifacts made of these source materials equal 11.9 and 12.2 microns, respectively, indicating that equivalent readings from the quarries likely signal some of the earliest human use. At the Coso quarries in the northern Mojave Desert, readings in the range of 21 microns are likewise indicative of terminal Pleistocene or earliest Holocene human activity. In the San Joaquin Valley, we can expect evidence of terminal Pleistocene to early Holocene human occupation to be signified by hydration readings from Casa Diablo and Coso obsidians up to at least 12.5 and 20 microns, respectively (see Table 11). Judging by maximum readings on Bodie Hills obsidian from the western Great Basin, this material in the San Joaquin Valley may generate readings in excess of 10.0 microns (Tuohy 1984).

As shown in Figure 56, hydration readings displayed at the early end of these histograms fall comfortably within the expected range of hydration values associated with the early artifacts just described. These data reveal that few readings from the terminal Pleistocene or earliest Holocene are recorded at regional sites, consistent with the rarity of early artifact types in this region. Further, there is virtually no evidence in the regional hydration record for pre-Clovis human occupation of south-central California. However, the possibility remains that such evidence may be uncovered when and if more focused research is conducted at the quarries. Lastly, the hydration evidence compiled from regional projectile points clearly shows a sequence of types beginning with fluted concave base forms, followed in time by un-fluted concave base points, and lastly Great Basin Stemmed forms. This sequence is largely consistent with those found elsewhere in North America, and suggests that concave base points likely preceded stemmed points in south-central California, and that un-fluted points are primarily younger than their fluted counterparts (e.g., Rondeau and Hopkins 2008).

The Holocene Distribution of Obsidian in South-Central California

Using the same data sets employed in the previous analysis, we examined the distribution of different obsidian types throughout the District 6/9 Study Area, as a measure of human land use and broader prehistoric interaction spheres (Figure 57). Several studies have previously considered the distribution of different obsidian materials within the Study Area beginning with Ericson (1977). For the most part this research has shown that obsidian moved mainly in an east-to-west direction over the Sierra Nevada (but see Basgall 1989; Delacorte 1999), with reasonably well-demarcated north-south divisions between the distributions of the various sources (Bouey and Basgall 1984; King et al. 2008; Roper-Wickstrom 1992; Sutton and Des Laurier 2002). The current analysis largely supports these previous findings. As shown in Figure 56, Coso is the dominant material found at sites throughout the Mojave Desert portion of the Study Area northward to just past Owens Lake and westward across the Sierra Nevada through the Kern River Canyon and into the Kern and Buena Vista lake basins of the San Joaquin Valley (Roper-Wickstrom 1992; Sutton and Des Laurier 2002). Fish Springs becomes the dominant obsidian source in the central Owens Valley from north of Owens Lake to just north of Big Pine and west across the Sierra Nevada to the upper portion of the western slope near the headwaters of the middle fork of the Kings

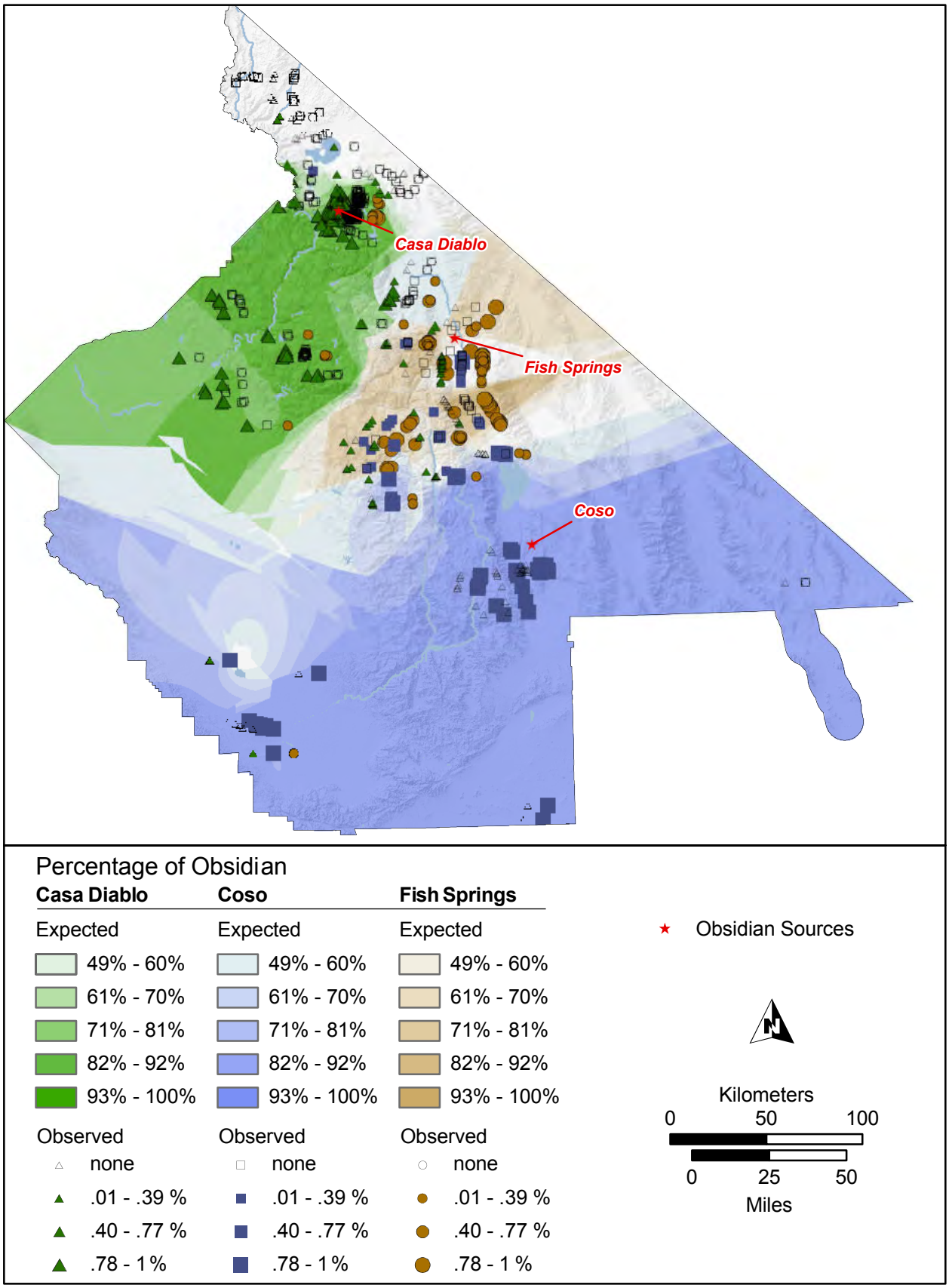


Figure 57. Distribution of the Three Primary Obsidian Types found in Archaeological Contexts within District 6/9.

River (Roper-Wickstrom 1992). Its absence in the San Joaquin Valley may, in part, be related to an absence of samples from valley sections immediately to the west, or may represent the western-most distribution of this material (Roper-Wickstrom 1992). Casa Diablo is the most common obsidian source north as far as the southern Mono Basin and on the western slope of the Sierra as far as the Tuolumne River (Jackson et al. 1994; King et al. 2008). Further north, Bodie Hills obsidian makes up the great majority of volcanic glass found on both sides of the Sierra as far as the Tahoe Basin and the American River watershed (King et al. 2008; Meyer and Rosenthal 2008). East-west distributions break down in the northern San Joaquin Valley during the late Holocene, where obsidian from Napa Valley in the southern North Coast Ranges becomes dominant and Casa Diablo obsidian extends much further north than its representation in the western Sierra (Rosenthal and Whitaker 2009).

Although these distribution patterns relate mainly to the late Holocene (i.e., 4000 cal BP; based on the age of most sampled components), limited information available from early Holocene sites shows that these patterns of distribution are long standing. For example, early Holocene sites at the southern end of the San Joaquin Valley include Coso obsidian almost exclusively (Jackson et al. 1998), while early artifacts found along the southern shore of Tulare Lake are mainly Casa Diablo (Gold et al. 2008). Likewise, Coso obsidian makes up virtually all of the obsidian from early sites in desert regions to the east (e.g., Basgall and Hall 1994). Further north, deeply buried early Holocene components at the Skyrocket site (CAL-629/630) and at Clarks Flat (CAL-342), north of the Tuolumne River, include 80 percent or more Bodie Hills obsidian (La Jeunesse and Pryor 1996; Peak and Crew 1990), similar to late Holocene sites from that same region (Rosenthal 2008).

While it remains unclear to what extent these distribution patterns represent the movement of people across the landscape or the exchange of commodities within broad interaction spheres, it is likely that early Holocene distributions represent something completely different than those associated with the late Holocene. These patterns also show that, while obsidian often moved quite far from its place of origin, the great majority of this material was deposited in a relatively tight radius around its source, extending more broadly in an east-west orientation than north to south.

CONCLUSIONS

Prehistoric human use of volcanically active regions east of the Sierra Nevada likely began in the latest Pleistocene and continued up to the historic period. This is evident not only in regional obsidian hydration profiles, but the earliest known human tools from this region are made of obsidian quarried within the Study Area. That all of the major obsidian sources were known to the makers of fluted points suggests that the region was thoroughly explored by the latest Pleistocene, leaving open the possibility that even earlier human use of south-central California may be uncovered in the future. Regional hydration profiles, however, do not show use of these obsidian sources earlier than indicated by hydration values from fluted points, further suggesting that if pre-Clovis occupations exist in the Study Area, they have yet to be discovered, or do not register in the considerable hydration evidence amassed to date. Nevertheless, beginning in the terminal Pleistocene obsidian from the Inyo-Mono and Coso regions was transported across a large area of south-central California, recovered from the earliest known archaeological sites both east and west of the Sierra Nevada. From that time through the latest Holocene, the distribution of obsidian from eastern California marks both the movement of people across the Sierra crest, and broad interaction spheres that developed between politically autonomous communities throughout much of California.

Over this time span, eastern California witnessed numerous volcanic events which transformed the geomorphic landscape and often delivered enormous amounts of ash and other volcanic debris over broad portions of the Study Area. While such events certainly had short-term effects on human populations, the numerous eruptions recognized in the Inyo-Mono region during the Holocene are not evident in obsidian hydration profiles from across south-central California (e.g., Laylander 1998). Despite the potentially devastating effects of such events, human use of this region appears to have continued unabated throughout the Holocene (c.f., Hall 1983). However, these volcanic events played a major role in structuring the archaeological record of the Inyo-Mono region, almost certainly obscuring much of the early and middle Holocene record beneath various types of volcanic ejecta and debris flows that originated during the late Holocene. Even sites from the latter time period have been buried by volcanic ash and debris, imposing a bias which cannot be overcome without concerted effort by archaeologists to account for the ways in which volcanic activity has structured the archaeological record of this region.

CHAPTER 6. BURIED SITE POTENTIAL IN DISTRICT 6/9

Buried site potential in District 6/9 is assessed here using landform age and key environmental characteristics thought to have a strong bearing on the location of past human settlements. A comprehensive map of Pleistocene- and Holocene-age landforms was constructed for the entire Study Area using digital soils surveys in combination with extensive radiocarbon-dating. To account for human land-use patterns, a model of buried site potential was developed based on landform age in combination with topographic relief and proximity to water. The resulting model allows Caltrans and other resource managers to make informed decisions regarding: (1) the need for further geoarchaeological studies; (2) appropriate inventory methods; and (3) the level of effort needed to identify buried sites in a given project area. In addition to increasing the likelihood that buried archaeological resources will be identified early in the planning process, this study provides a basis for evaluating potential biases in the nature and completeness of the archaeological record.

MAPPING STRATEGY AND METHODS

To better account for the entire record of human occupation in the Study Area, it was necessary to assess the age and extent of depositional landforms so that those with the potential to contain buried archaeological deposits could be distinguished from those that do not. A combination of radiocarbon dating and archival research was used to develop a map depicting the age of depositional landforms in District 6/9. Archaeological and geological studies, historical maps, soil surveys, and related digital files were identified, and critical datasets (i.e., soil descriptions, radiocarbon dates, and stratigraphic relationships) integrated to provide landform age assignments discussed in Chapter 4 and presented in Figure 17.

Radiocarbon Database

Recognizing that the use of relative age assignments based on soil development and landform position alone has created a number of problems with existing geological maps (see Chapter 3), 2,402 radiocarbon dates from 569 separate locations were compiled from published and unpublished sources. Relevant information, such as location, provenience, and stratigraphic context, was recorded for each date by obtaining and reviewing the primary source whenever possible. Sample locations include 284 archaeological sites and 285 from natural contexts. More than 1,713 dates (~71%) are from locations within District 6/9, while the remainder (689 or ~29%) are from adjoining counties with similar soil types (Table 13). Slightly more than one-third of the total dates (n=856, or 35%) are from "cultural" contexts, while 1,598 (65%) are from contexts judged to be "natural" or non-cultural in origin; the type and context of a small number of dates (n=6, or 0.02%) could not be determined and were not utilized in subsequent analyses.

Table 13. Summary of Radiocarbon Database.

Caltrans District No.	County or Counties	Cultural Contexts	Natural Contexts	Grand Total	% of total
5	San Benito	9	99	108	4.40%
6	Fresno, Kern, Kings, Madera, Tulare	335	479	814	33.20%
7	Los Angeles	0	1	1	0.04%
8	San Bernardino	4	285	289	11.92%
9	Inyo, Mono	339	618	957	38.83%
10	Alpine, Mariposa, Merced, Tuolumne	169	116	285	11.63%
Grand Total		856	1,598	2,454	100.00%
% of Total		34.9%	65.1%	100.0%	

Note: Includes 65 dates obtained for this study

In addition to dates compiled from existing literature, 65 new radiocarbon dates were obtained from 33 locations as part of the current study (Table 13). Radiocarbon sampling initially focused on distinguishing

Pleistocene- from Holocene-age landforms. This allowed for a more accurate correlation between characteristics of soil development and landform age in the Study Area. Subsequent dates were used to refine age assignments within the Holocene and clarify the temporal range of various soil types, particularly those with moderate degrees of profile development or in intermediate landscape positions.

For purposes of constraining the age of surface soils, radiocarbon dates were considered to be from buried contexts if they were associated with a geological stratum overlain by an unrelated depositional stratum. Using this criterion, some samples from shallow depths were considered buried, while others from relatively deep contexts were assigned to the surface stratum. Samples covered by deposits of artificial fill were also assigned to surface contexts because they were not naturally buried. In the absence of information on stratigraphic context, samples collected from depths of 100 centimeters or more were generally presumed to be from buried contexts.

All radiocarbon dates were calibrated using the CALIB software program (version 5.02) developed by Stuiver and Reimer (1993). Sample locations were linked to soil types at the surface of associated landforms using digital soil survey data. Fifty of the compiled dates are from unknown or suspect contexts and were excluded from further analyses, including some dates that the original researchers considered erroneous. Thirteen "modern" dates were also excluded because they were too young to calibrate with the CALIB program. Radiocarbon dating methods, laboratory sample sheets, and the resulting database are provided in Appendix B.

As shown in Table 14, the majority (~54.1%) of dates are late and latest Holocene in age, of which more than 1,000 (~42.3 %) date solely to the latest Holocene (<2,000 cal BP). Latest Holocene dates account for about 72 percent of those from cultural contexts and about one-quarter (26.1%) of those from natural contexts. It is telling that the number of dates from middle Holocene-age deposits (n=172, or ~7.2 %) is about one-half of those from the early Holocene (n=364, or 15.1%), pointing to the long-standing difficulty in finding middle Holocene-age geological contexts (Table 14).

Table 14. Summary of Radiocarbon Database by Time Interval and Context.

Time Interval	cal BP	Natural Contexts	% of Natural Contexts	Cultural Contexts	% of Cultural Contexts	Total per Interval	% per Interval
Historical-Modern	<150	25	1.6%	69	8.1%	94	3.9%
Latest Holocene	150-2000	404	26.2%	616	72.5%	1,020	42.7%
Late Holocene	2,000-4000	196	12.7%	85	10.0%	281	11.8%
Middle Holocene	4000-7000	117	7.6%	55	6.5%	172	7.2%
Early Holocene	7000-11,500	339	22.0%	25	2.9%	364	15.2%
Latest Pleistocene	11,500-15,000	186	12.1%	-	-	186	7.8%
Late Pleistocene	15,000-25,000	155	10.1%	-	-	155	6.5%
Older Pleistocene	25,000-1.9 million	119	7.7%	-	-	119	5.0%
Grand Total		1,541	100.0%	850	100.0%	2,391 [a]	100.0%

Notes: Included are all dates from District 6/9 and selected dates from adjoining counties; [a] 50 dates from unknown or suspect contexts and 13 "modern" dates that could not be calibrated are not included.

Digital Soils Surveys

The depositional landform map was created from digital soil data obtained from the Natural Resource Conservation Service (2009a, 2009b) Soil Survey Geographic Database. The soil data occur in two formats known as the Soil Survey Geographic (SSURGO) Database and the State Soil Geographic (STATSGO) Database. The SSURGO-data are the most detailed, representing an exact duplication of the original soil surveys mapped at a 1:24,000 scale (NRCS 2009a). The state-wide STATSGO data are far more generalized and include areas where SSURGO-level soil surveys were not needed, or have not yet been conducted (NRCS 2009b). For example, soils in agriculturally fertile areas such as the San Joaquin Valley are mapped at the detailed SSURGO-level, while those in less fertile areas such as the Mojave Desert and Sierra Nevada mountains are only mapped at the general STATSGO-level. For this reason, the spatial resolution of soils maps is generally better in lowland areas than in upland or desert regions. Though designed primarily for natural resource planning and management, SSURGO-level data have previously been used to develop reasonably detailed maps of depositional

landforms, including those created for geoarchaeological sensitivity studies elsewhere in central California (Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b) and other states (Monaghan and Lovis 2005). The STATSGO data were only used for those portions of the Study Area where SSURGO data are not available.

Currently, nearly 16 million acres (68.3%) of the Study Area are covered by detailed SSURGO data (mainly the San Joaquin Valley), with more general STATSGO data covering over seven million acres (31.7%), mainly east of the Sierra crest. The combined SSURGO and STATSGO dataset for the Study Area includes 1,000 individual soil series, families, or complexes, corresponding to 53,923 mapped polygons (soil map units), with almost one-quarter-million (246,976) assigned attributes or components (Table 15).

Table 15. Summary of Digital Soil Survey Data and Coverage.

Digital Soil Data (resolution)	No. of Soil Series or Map Units	No. of Soil Sub-types (phases)	No. of Polygons	No. of Related Components	Extent in Acres	Percent of Total Acres
SSURGO (detailed)	878	3,284	53,408	239,893	15,941,877	68.3%
STATSGO (general)	122	n/a	515	7,083	7,407,428	31.7%
Totals	1,000	3,284	53,923	246,976	23,349,305	100.0%

Limitations of the Soils Surveys

To understand the limitations of the landform map, it is important to know a little about how data were gathered and constructed by the original soil surveys. First, natural boundaries between different soils are often indistinct and sometimes imperceptible, as soils are complex three-dimensional bodies that merge gradually with one another across a landscape. Soil surveyors make divisions between different soils based on a very limited number of field observations and test pits (Reed 2006:19). Since this is the way that most soil maps are constructed, a certain amount of error, imprecision, and uncertainty always built into soil series boundaries. Further, as mapped, individual soil series often contain some percentage of other soil types, either too small or too spatially complex to be differentiated at the 1:24,000 mapping scale. As a result, the relative accuracy of the map produced for this study is not enhanced by increasing the scale beyond 1:24,000.

Because soils in different portions of the Study Area were often mapped at different times by different people, using different methods and criteria, it was sometimes difficult or impossible to match comparable soil series and associated age groups across adjoining survey boundaries. These types of matching problems are evident at several locations within the SSURGO-level data, with an example from the San Joaquin Valley shown in Figure 58. It is also apparent that the level of detail and spatial resolution provided by earlier surveys is greater in some areas (i.e., northeast side of the San Joaquin Valley) than those surveyed more recently (i.e., western Fresno and Tulare counties). While some of these differences likely reflect variations in the training and knowledge of particular surveyors, it is also true that many of the indicators used to map soil types and their boundaries continue to be obscured or destroyed by artificial landscape modifications, such as repeated cultivation, land leveling, soil reclamation, and drainage. These processes have only increased over the years. Mismatches also occur along boundaries between SSURGO and STATSGO datasets (Figure 58), which simply reflect differences in mapping resolution inherent to each.

No attempt was made to adjust the boundaries of existing soil polygons as mapped, including natural and artificial bodies of water (e.g., lakes and reservoirs). While the precision of map unit boundaries could be improved through stereoscopic comparisons of aerial photographs and topographic contours, this was not possible given the wide geographic scope of this study. Consequently, all map unit boundaries should be considered approximate, and the degree of spatial resolution is no better than the level of detail provided by the soils database. Because our map units are intended to emphasize temporal differences, and not depositional environments, multiple depositional environments may be represented in some map unit-age groups. Even so, obvious landform types (e.g., basins, channels fans, floodplains, and glacial deposits) can be recognized from the overall shape and location of map units. The general age, nature, and distribution of each map unit defined for this study are described in Table 16. Appendix C includes a detailed correlation of soil series, map unit designations, and buried site potential.

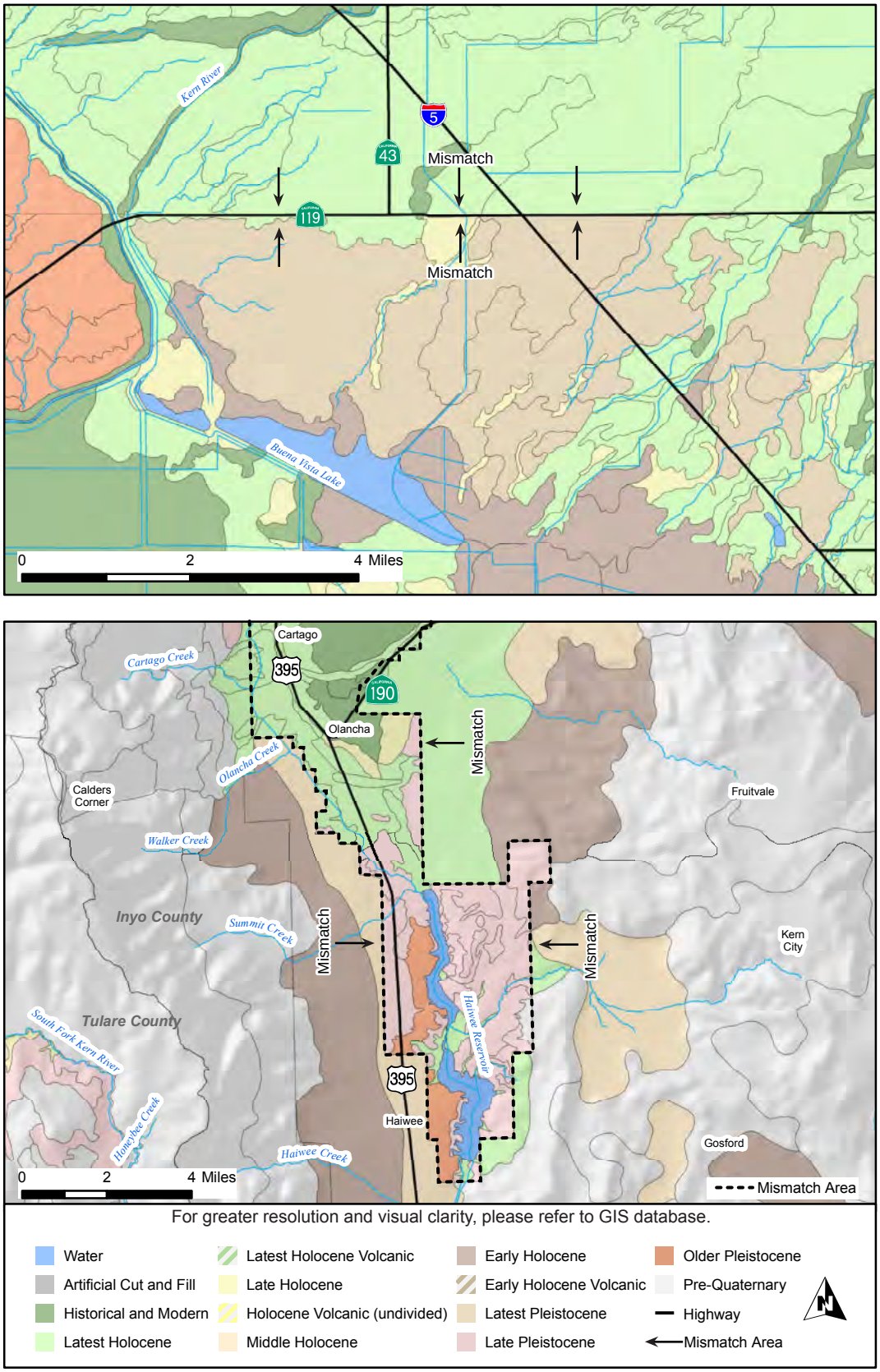


Figure 58. Mapping Discrepancies within SSURGO soil data (top) and between SSURGO and STATSGO soils data (bottom).

Table 16. Definitions of Landform Map Units.

Map Unit (abbreviation)	cal BP	Nature and Geomorphology	Soil Profile Development	General Distribution in Study Area
Artificial Cut/Fill (Hacf)	0-150	Created or modified by human activity, such as canals, dams, levees, mining debris, pits, quarries, and urban areas	Often lacks soil development, but varies greatly depending on nature and setting	Relatively small areas distributed throughout the Study Area.
Historical-Modern (Hm)	0-150	Nearly level alluvial fans, floodplains, lake beds, playas, inset terraces, and channels	Very weakly developed A/C profiles with no subsurface horizons	Distributed locally in Study Area in or along active channels, in canyons, and beds of former lakes
Latest Holocene (LtH)	150-2000	Alluvial/colluvial fans, nearly level floodplains, inset terraces, some dunes and volcanic deposits	Weakly developed A/C or A/Cg profiles, few weak Bk or Bw horizons	Distributed widely in valleys throughout the Study Area, mainly found in the San Joaquin Valley
Late Holocene (LH)	2000-4000	Alluvial/colluvial fans, floodplains, inset terraces, many dunes, some volcanic deposits	Weakly medially developed profiles, many with Bw horizons, some with Bk and/or Bss horizons	Distributed widely in valleys throughout Study Area, mainly Owens and San Joaquin valleys
Middle Holocene (MH)	4000-7000	Alluvial/colluvial fans, floodplains, inset terraces, and some dunes	Medially developed profiles, most with Bk and/or Bt horizons (clay films often faint and patchy), few Bn horizons	Surface distribution very limited in valleys, most often buried, found at surface in parts of Owens and Rose valleys
Early Holocene (EH)	7000-11,500	Alluvial/colluvial fans, floodplains, inset terraces, and some older lake beds, few volcanic deposits	Medial- to well-developed profiles, most with Bk and/or Bt horizons (common, faint clay films), many Bn horizons, some with weakly cemented silica horizon (Bq)	Surface distribution limited mainly to abandoned lake beds in parts of Owens Valley, distal fans in eastern San Joaquin Valley, and fan in parts of Great Basin and Mojave Desert (e.g., Death Valley, Antelope Valley)
Latest Pleistocene (LtP)	11,500-15,000	Alluvial fans and floodplains, some glacial deposits and few volcanic deposits with some surface dissection	Well-developed profiles, most with Bk, Bn and/or Bt horizons (common, distinct clay films), some with semi-cemented silica horizon (Bqm)	Surface distribution limited exclusively to parts of western San Joaquin Valley, such as "Lethent fan" northwest of Tulare Lake
Late Pleistocene (LP)	15,000-25,000	Alluvial fans and floodplains, common glacial deposits and some volcanic deposits, most with some surface dissection	Very well-developed profiles with strong Bk, Bn, Bt and/or Bqm horizons (many, distinct clay films)	Surface distribution limited mainly to valley margins, found in Owens Valley, eastern San Joaquin Valley, and parts of Great Basin and Mojave Desert (e.g., Antelope and Silurian valleys); glacial deposits in upper parts of Sierra Nevada and White Mountains, and along western margins of Owens Valley and Mono-Long valleys.
Older Pleistocene (OP)	25,000-1.9 my	Alluvial fans and floodplains, common glacial deposits and some volcanic deposits, all with surface dissection, many uplifted, and/or faulted	Extremely well-developed profiles with very strong Bk, Bn, Bt and/or Bqm horizons (many, distinct, thick clay films), often cemented and/or semi-consolidated	Surface distribution limited mainly to valley margins in Owens Valley, eastern and western San Joaquin Valley, and parts of Great Basin and Mojave Desert (e.g., Armargosa and Antelope valleys); glacial deposits in upper parts of Sierra Nevada and White Mountains, and along western margins of Owens Valley and Mono-Long valleys.
Pre-Quaternary (pQ)	1.9 my or more	Hills and mountains composed of volcanic, metamorphic, and sedimentary rocks, most often dissected, uplifted, and/or faulted	Profiles vary greatly due to erosion of most landforms, from weakly developed to extremely well developed, often consolidated and/or well-cemented	Bedrock outcrops found mainly in the Coast/Temblor Ranges, Transverse Ranges, Sierra Nevada, White Mountains, and other Great Basin ranges

Notes: Water (H20) map unit not described; my – million years.

Map Development

Because specific soil types are typically associated with landforms of a similar age and depositional environment, soil series were used to define the aerial extent and chronological relationship of different landform groups. Once compiled, soil survey data were uploaded to a customized software interface where they were reviewed and coded. The degree of soil profile development provided by official soil descriptions was used to make initial age estimates for each soils series, while boundaries between each series were used to define contacts between soils of different ages. In addition to relative soil development, age assignments for particular soil series were further based on the geomorphic position of associated landforms, cross-cutting relationships, and degree and extent of erosional dissection.

Each radiocarbon date in the database was then linked to their associated soil series and cross-checked against initial age assignments for each soil type. When contradictions were found, soil series ages were sometimes adjusted based on the new radiocarbon information, and all map polygons associated with that soil series were recoded with the revised age. Soil series found to have similar degrees of horizon development and in similar landscape positions as dated soils were also re-evaluated and, if necessary, also re-assigned to the new age group. After a series of these detailed comparisons, soil types of the same age were mapped in GIS using the SSURGO and STATSGO shape-files, with a simplified final version of the map shown in Figure 17.

Landform Map Limitations

As for any map, it is important to remember that the "map is not the territory." The landform map is no exception since its precision and accuracy depend mainly on the criteria, scale, and data used in its construction. In some desert areas, such as Death Valley and Panamint Valley, alluvial fans and floodplains are typically composed of different-age deposits with complex distributions that vary considerably over short distances. The ages and distributions of these landforms are over-generalized at the STATSGO level so that some include small areas of non-depositional landforms (e.g., pre-latest Pleistocene). The same applies to most mountainous areas, such as the upper Sierra Nevada, that are generally mapped as solely pre-Quaternary bedrock or pre-latest Pleistocene glacial deposits, even though many Holocene-age depositional landforms are present in these areas that are too small and localized to be mapped at the STATSGO scale. The landform map must, therefore, be used with the recognition that it is over-generalized in most settings.

For example, as shown in Table 17, upland landforms known to contain buried archaeological deposits include meadows, fans, footslopes, floodplains, inset terraces, and some bedrock hollows and hillslopes. Buried sites associated with older upland landforms include an early Holocene-age deposit and soil on a low-angle ridge spur at Sunset Point (TUL-1052) near Mountain Home (Dillon 1992), and middle and late Holocene culturaldeposits (TUO-2834) buried on a Pleistocene-age glacial moraine at Dana Meadows (Montague 1996). Other examples include site MNO-3 along Snow Creek near Mammoth Lakes (Burton 1990) and site TUL-879 in Rockhouse Basin (Garfinkel et al. 1984), which have late or latest Holocene cultural deposits more than 1.1 meters (3.6 feet) below surface even though both are located on glacial deposits.

Table 17. Age and Buried Site Potential of Depositional Landforms in the Sierra Nevada (adapted from Meyer and Rosenthal 2008).

Landform Type	Age Range (cal BP)	Description	Typical Age of Buried Soils/Sites
Meadows	15,000-150	Usually found in basins with level or nearly level surfaces at elevations of more than 1,829 meters (6,000 feet) above mean sea level.	Early, Middle, and Late Holocene
Fans and Footslopes	15,000-400	Typically have gently sloping surfaces (~9 degrees or less) that occur at the base of slopes and in concave landscape positions.	Early, Middle, and Late Holocene
Floodplains and Inset Terraces	4500-0	Usually form level or nearly level surfaces that are adjacent to modern stream or river channels	Middle and Late Holocene
Bedrock Hollows and Low-Angle Hillslopes	Pre-Holocene to 400	Includes broad low-angle benches at mid-slope positions or nearly level ridges and nose slopes	Middle and Late Holocene

Usual distinctions between depositional and non-depositional landforms are sometimes blurred and confounded in areas where Holocene-age deposits overlie older bedrock, or glacial deposits that are generally considered to be erosional. In the Sierra foothills near Sonora, for instance, buried Holocene-age soils and archaeological deposits were found on low-angle (~0.5 to 4.5 degrees) hill slopes underlain by granitic bedrock (Meyer 2008a; Meyer and Dalldorf 2004). These studies also determined that Holocene-age depositional landforms in the foothills tend to have concave surface topography and slopes of nine degrees or less, which likely applies to other upland areas in the Study Area.

LANDFORM AGE AND BURIED SITE POTENTIAL

Simply stated, there is generally an inverse relationship between landform-age and the potential for buried archaeological deposits. For example, archaeological deposits cannot be buried within landforms that developed prior to human colonization of North America (Rosenthal and Meyer 2004a, 2004b). Therefore, as a first step, landforms with the potential to contain buried sites must be distinguished from those that are too old to contain them, allowing older portions of the landscape to be confidently excluded from further consideration. While this basic distinction addresses the potential for buried sites, the relative probability of locating a buried site depends largely on a more fine-grained distinction between the ages of different Holocene-age landforms.

For the purposes of this study, buried site potential was determined by two main assumptions: (1) archaeological deposits from each successive time period are more common because the density of human populations increased over time; and (2) the longer a landform remained at the surface, the greater the probability that any one spot on that landform was occupied. Thus, the potential for buried archaeological deposits is elevated when landforms are buried later in time.

For example, early Holocene surface landforms are considered to have a low potential for buried sites, not because such sites are absent, but simply because these landforms can only contain sites from the latest Pleistocene or earliest Holocene, a relatively short 2,000- to 3,000-year interval. In addition, human populations are thought to have been comparatively low during this time period. Thus, we assume a small number of sites were created by the region's first inhabitants over a relatively brief period of time. Consequently, the probability of finding one of these sites within or below an early Holocene surface landform is reduced by these factors.

The relationship between time and archaeological potential can also be used to predict which landforms are likely to yield buried archaeological deposits from specific cultural periods, and which are not. For instance, latest Pleistocene to early Holocene surface landforms cannot contain buried sites from later cultural periods and, conversely, archaeological deposits from almost any cultural period may lie beneath latest Holocene-age surface landforms.

As depicted in Figure 17 and described in Table 16, 13 different landform units were identified and mapped throughout the Study Area, corresponding to nine different age groups (areas mapped as water are excluded). Based on the age and type of landform, five levels of buried site potential were associated with particular landform units and ranked from Very Low to High (Table 18). In keeping with the assumptions outlined above, latest Pleistocene-age or older landforms are ranked as having a Very Low potential for buried sites, while latest Holocene-age landforms are ranked as having a High potential. Based on the landform age criteria, the potential for buried sites is Low or Very Low in nearly three-fourths (74.4%) of the Study Area, and Moderate to High in only one-fourth (25.6%; Table 18).

Caltrans Right-of-Way

By adding a 10-meter- (32.8-foot-) wide right-of-way buffer along both sides of each Caltrans highway, the buried site potential of these roadways was evaluated (Appendix E). This assessment indicates that landform units with Very Low to Moderately Low buried site potential are associated with more than one-half of the total highway distance in the Study Area (n=14,695 linear acres, or 54%). In contrast, about one-third of the total highways traverse units with a High potential for buried resources (n=9,723 linear acres, or 35.7%), while only about 10 percent cross landforms with a Moderate buried site potential (n=2,810 linear

Table 18. Buried Site Potential and Size of Landform Map Units in the Study Area.

Landform Map Unit	Weighted Potential (score)					% of Total Acres
	Very Low (-1,or. 0)	Low (1)	Moderately Low (2)	Moderate (3)	High (4)	
Water (H20)	142,563	-	-	-	-	0.61%
Artificial Cut and Fill (Hacf)	37,001	-	-	-	-	0.16%
Historical and Modern (Hm)	-	659,354	-	-	-	2.82%
Latest Holocene Volcanic (LtHv)	-	-	-	-	421,970	1.81%
Latest Holocene (LtH)	-	-	-	-	3,848,815	16.48%
Late Holocene (LH)	-	-	-	1,318,099	-	5.65%
Holocene Volcanic-undivided (Hvun)	-	-	-	13,368	-	0.06%
Middle Holocene (MH)	-	-	365,252	-	-	1.56%
Early Holocene (EH)	-	1,244,584	-	-	-	5.33%
Early Holocene Volcanic (EHv)	-	17,189	-	-	-	0.07%
Latest Pleistocene (LtP)	521,561	-	-	-	-	2.23%
Late Pleistocene (LP)	881,404	-	-	-	-	3.77%
Older Pleistocene (OP)	2,243,131	-	-	-	-	9.61%
Pre-Quaternary (pQ)	11,634,845	-	-	-	-	49.83%
Total Acres	15,317,942	2,063,690	365,252	1,331,467	4,270,785	100.00%
% of Total Acres	65.6%	8.8%	1.6%	5.7%	18.3%	

Notes: 23,349,136 acres total.

acres, or 10.3%). Thus, the total length of roadways with low or moderate buried site potential is 18% less than the total with high potential, a difference that largely reflects the tendency for roads to be placed along paths of least topographic resistance (i.e., level valleys versus steep slopes).

ENVIRONMENTAL PARAMETERS AND BURIED SITE POTENTIAL

The age-based map provides a good basis for predicting which landforms may contain buried archaeological remains, and what cultural period(s) may be represented. It does not, however, explicitly account for other factors that likely determined the location of prehistoric sites. Consequently, buried site potential may be overestimated in some areas, and underestimated in others based on landform age alone. Given the large extent of Holocene-age surface landforms in the Study Area (see Figure 17), buried site potential was further refined by including environmental parameters that attempt to account for human settlement decisions.

Archaeological deposits are not distributed randomly throughout the landscape, but tend to occur in specific geo-environmental settings (Foster and Sandlelin 2003:4; Hansen et al. 2004:5; Pilgram 1987; Rosenthal and Meyer 2004a). Detailed site prediction models are, ideally, constructed for areas where it is possible to account for most of the variables that may have made a specific location more favorable for human occupation than another, such as a single valley, lake basin, or drainage network (e.g., Allen et al. 1999; Rosenthal and Meyer 2004a). While such a model based on the complexities of human decision-making are well beyond the scope of this study, we did utilize two environmental variables to better identify areas with the highest potential to contain buried archaeological sites: distance to water and landform slope. These variables are consistent with previous analyses in the southern Sierra foothills, indicating that most prehistoric occupation sites are associated with level or nearly level landforms (<10-degree slope), occurring near stream confluences where at least one stream is perennial (Pilgram 1987:44-47). Furthermore, geoarchaeological

studies conducted in the Sierra foothills near Sonora determined that Holocene-age depositional landforms tend to have surface slopes of nine degrees or less and often contain buried archaeological sites (Meyer 2008a; Meyer and Dalldorf 2004).

Distance to Water Sources and Degree of Slope

The relationship between site locations and environmental variables such as biotic zone, physiographic provenance, precipitation, soil productivity, stream order, and distance to water within District 6/9 were assessed using a GIS-based "weights of evidence analysis" (Bonham-Carter et al. 1989; see Appendix E-1 for a detailed discussion of the weights of evidence analysis). Artificial sources of water such as man-made canals, channels, ditches, lakes, ponds, and reservoirs were identified and excluded from further consideration to emphasize only prehistoric water sources. Similarly, since the lower reach of the Kern River channel was not established until the 1870s (Grunsky 1898a), it was excluded in favor of the pre-1870s river course as shown on historic-era maps.

This analysis revealed that prehistoric site locations in the Study Area are most strongly correlated with distance to the nearest water source, whether a lake, stream, or spring. It was also shown that sites tend to be located farther away from major lakes, streams, and rivers as compared to springs or small streams. Based on this, the order of perennial streams (i.e., their size and number of upstream confluences) throughout the Study Area was ranked using the Horton-Strahler method (Horton 1945; Strahler 1952), and the distance to water modeled by progressively increasing the distance for larger order streams using a roughly logarithmic scale, as shown in Table 19.

Surface slopes over the entire Study Area were modeled in 90-meter (295 feet) grid cells using data from NASA Shuttle Radar Topographic Mission (Jarvis et al. 2008). The calculated results were analyzed using a simple binary model to identify those portions of the Study Area that have surface slopes of less than 10 degrees located within the prescribed distance to water as determined by stream order. Because weights of evidence analysis showed that distance to water is more important than slope in determining site locations, proximity to water was given greater weight than slope. Thus, areas with surface slopes of 10-degrees or less that are located near water have a greater potential for buried sites than areas of similar slope away from water (Table 19).

Table 19. Parameters Used to Model Slope and Distance to Water.

Stream Order	Dependent Distance to Water (meters)	Presence of Water Source [a]	Type of Surface Slope (degrees)	
1	100		<10° (yes)	>10° (no)
2	250	<Distance (yes)	2	1
3	500	>Distance (no)	-1	-2
4	750			
5	1,000			
6	2,500			
7	5,000			
8	7,500			
9 or more	10,000			

Notes: [a] Water present or absent within dependent distance per stream order.

AN ENVIRONMENTAL MODEL OF BURIED SITE POTENTIAL

All portions of the Study Area were distinguished according to the two environmental criteria and the results merged with the landform-age map to develop a refined model of buried site potential. To arrive at an overall measure of buried site potential, scores generated by the environmental parameters were added to scores derived from the landform map as follows: distance to water/slope (ws) plus map score (ms) equals the overall score (ws + ms = os). For example, to calculate the score for areas with surface slopes greater than 10 degrees that are not near water, and associated with pre-Quaternary surface deposits, the slope and distance to

water score of -2 was added to the pre-Quaternary score of -1 for an overall score of -3, or Very Low. Conversely, areas with surface slopes of 10 degrees or less, which are near water, and associated with latest Holocene surface deposits, were calculated by adding the slope and distance to water score of 2 to the latest Holocene score of 4, for an overall score of 6, or Very High. The scoring system and possible scoring combinations are summarized in Table 20.

Table 20. Buried Site Potential Scoring System and Possible Score Combinations.

Landform Unit (Weight)	Combined Surface Slope and Distance to Water (Weights) and Landform Weights				Overall Score and Buried Site Potential
	(Wt. -2)	(Wt. -1)	(Wt. 1)	(Wt. 2)	
Water (0)	-2	-1	1	2	6 - Very High
Artificial Cut/Fill (-1)	-3	-2	0	1	5 - High
Historical-Modern (1)	-1	0	2	**3**	4 - Moderately High
Latest Holocene (4)	2	**3**	**5**	**6**	3 - Moderate
Late Holocene (3)	1	2	**4**	**5**	2 - Moderately Low
Middle Holocene (2)	0	1	**3**	**4**	1 - Low
Early Holocene (1)	-1	0	2	**3**	0 to -3 - Very Low
Latest Pleistocene (0)	-2	-1	1	2	
>Late Pleistocene (-1)	-3	-2	0	1	
Slope/Water Trends	(>slope/<water)		(<slope/>water)		

Notes: Moderate to Very High scores in **bold** and shaded cells.

While the environmental predictive model itself does not alter or decrease a landform's "geologic potential" to contain buried sites, it does provide a rationale to further define and delimit areas with the greatest likelihood for buried sites within each of the landform map units. In doing so, the predictive model focuses attention on particular portions of sensitive landform units, while deemphasizing other parts of the same units.

Comparison of Buried Site Potential Using Landform Age and Environmental Parameters

The landform map alone identifies more than 4.2 million acres (~18 %) of the Study Area as having a High potential for buried sites. The landform map combined with variables of slope and distance to water identifies just 2.8 million acres (~12% of Study Area) as having High or greater potential for buried sites, which reduces the sensitive area by about 1.4 million acres (~6 %; Table 21).

Table 21. Comparison Buried Site Potential Scores, and Area Covered.

	Very Low, Low, and Moderately Low	% of Total	Moderate	% of Total	Moderately High, High, and Very High	% of Total
Landform Map (acres)	17,746,884	76.01%	1,331,467	5.70%	4,270,785	18.29%
Predictive Model (acres)	17,734,342	75.95%	2,793,642	11.96%	2,821,152	12.08%
Model minus Map (acres)	(12,542)	(0.05%)	**1,462,175**	**6.26%**	(1,449,633)	(6.21%)

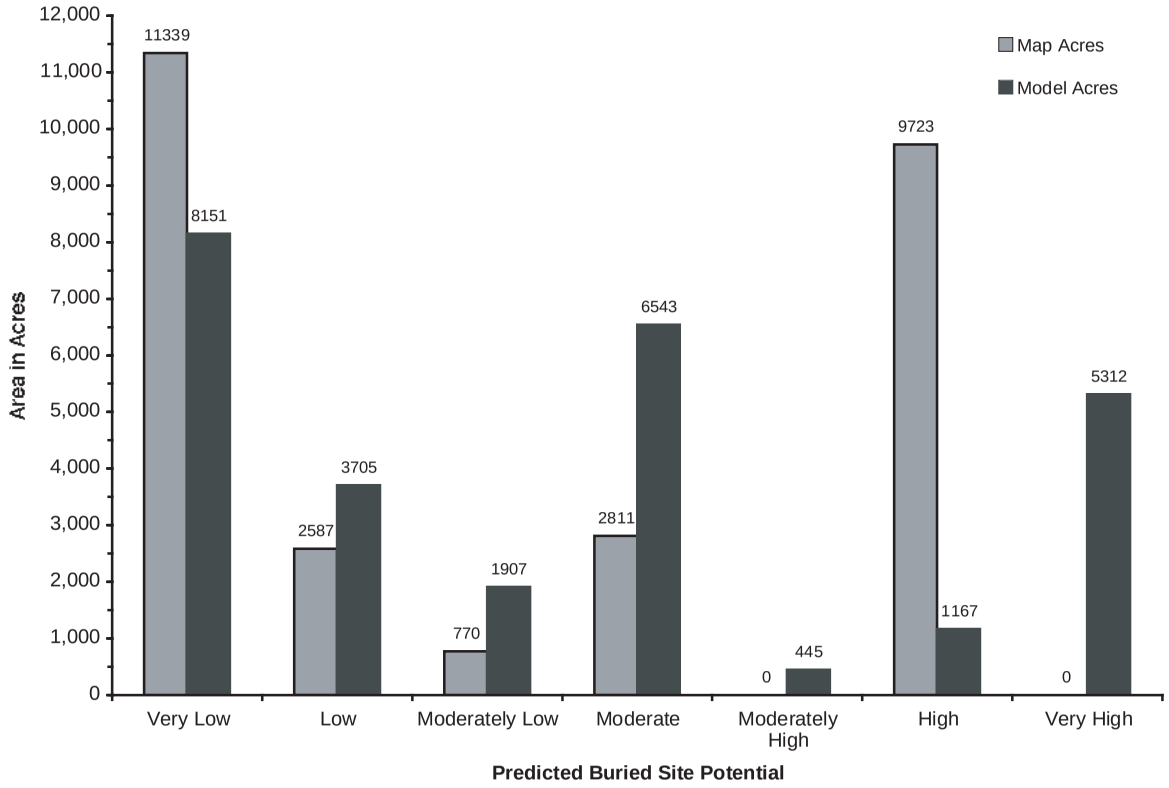
Notes: Values in **bold** indicate a net increase, and those in (parentheses) indicate a net decrease, in area compared to the landform map assignment.

The environmental model also identifies some areas ranked as Moderate or lower potential by the landform map as having a slightly higher potential for buried sites. While this results in a net change in the buried site potential for only about 12,500 acres (less than 0.05%) of the overall Study Area (Table 21), specific map units show more significant changes (Table 22). For example, the buried site potential of some areas associated with early Holocene landforms shifts from Low to Moderately Low or Moderate, and the potential of some areas associated with middle Holocene landforms shifts from Low to Moderately Low or High. The landform map units, buried site potential scores, and area covered by each are summarized in Figure 59 and in Table 22.

Table 22. Buried Site Potential and Area Covered by Landform Map Units.

Map Unit	——Very Low (0, -1, -2, -3)——				Low	Mod. Low	Mod.	Mod. High	High	Very High	Total Acres	% of Acres
	-3	-2	-1	0	1	2	3	4	5	6		
Water (H20)	-	(570.4)	(63,365.2)	-	***4,025.1***	***74,601.9***	-	-	-	-	142,562.7	0.6%
Artificial Cut and Fill (Hacf)	(4,437.4)	(15,864.3)	-	***1,557.2***	***15,141.8***	-	-	-	-	-	37,000.7	0.2%
Historical and Modern (Hm)	-	-	(2,469.9)	(393,599.5)	-	***15,880.3***	***247,404.0***	-	-	-	659,353.8	2.8%
Latest Holocene (LtH)	-	-	-	-	-	(45,123.0)	(135,683.3)	-	***26,108.3***	***215,054.9***	421,969.5	1.8%
Latest Holocene Volcanic (LtHv)	-	-	-	-	-	(14,353.1)	(1,935,200.1)	-	***19,705.3***	***1,879,556.9***	3,848,815.5	16.5%
Late Holocene (LH)	-	-	-	-	(26,804.8)	(757,552.0)	-	***6,823.3***	***526,919.0***	-	1,318,099.1	5.6%
Holocene Volcanic-undivided (Hvun)	-	-	-	-	(5,570.3)	(2,013.6)	-	***4,223.3***	***1,561.2***	-	13,368.4	0.1%
Middle Holocene (MH)	-	-	-	(4,741.7)	(216,049.7)	-	***3,260.5***	***141,199.6***	-	-	365,251.5	1.6%
Early Holocene (EH)	-	-	(33,421.9)	(724,896.7)	-	***16,274.6***	***469,990.8***	-	-	-	1,244,584.1	5.3%
Early Holocene Volcanic (EHv)	-	-	(6,409.0)	(7,427.8)	-	***1,249.0***	***2,103.6***	-	-	-	17,189.3	0.1%
Latest Pleistocene (LtP)	-	(164.1)	(278,550.2)	-	***128.1***	***242,718.4***	-	-	-	-	521,560.8	2.2%
Late Pleistocene (LP)	(134,658.5)	(399,798.3)	-	52,712.9	***294,234.4***	-	-	-	-	-	881,404.2	3.8%
Older Pleistocene (OP)	119,136.5	***1,380,249.4***	-	***59,258.0***	***684,487.3***	-	-	-	-	-	2,243,131.2	9.6%
Pre-Quaternary (pQ)	5,814,375.2	***2,642,409.1***	-	***1,905,020.7***	***1,273,040.2***	-	-	-	-	-	11,634,845.2	49.8%
Total Acres	6,072,607.7	4,439,055.7	384,216.2	3,149,214.5	2,519,481.7	1,169,766.0	2,793,642.5	152,246.2	574,293.8	2,094,611.9	23,349,136.0	100.0%
% of Acres	26.0%	19.0%	1.6%	13.5%	10.8%	5.0%	12.0 %	0.7%	2.5%	9.0%	100.00%	
Cumulative % (R-L)	100%	74.0%	55.0%	53.3%	39.8%	29.1%	24.0%	12.1%	11.4%	9.0%		

Notes: Values in ***bold italics*** indicate an increase, and those in (parentheses) indicate a decrease, in potential compared to the landform map assignment; Mod – Moderate.



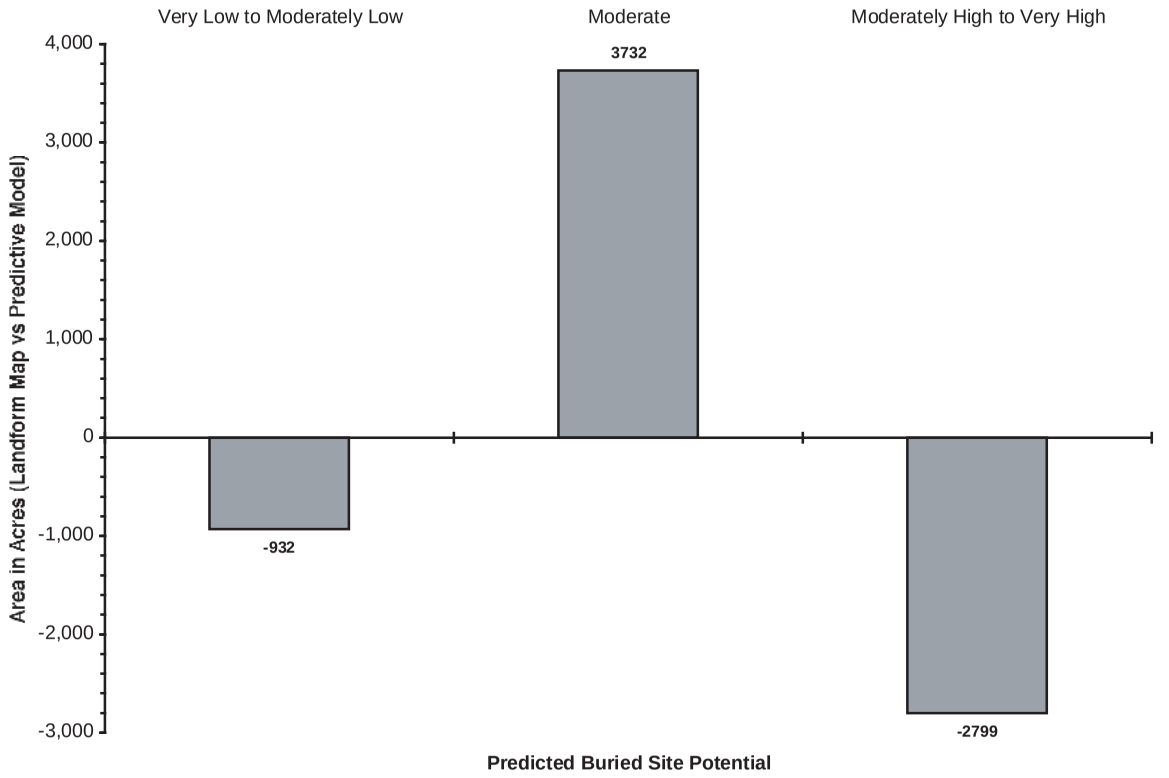


Figure 59. Extent of Buried Site Potential Based on the Landform Map Compared to the Predictive Model.

Caltrans Right-of-Way

To evaluate how the environmental parameters effect the overall buried site potential within Caltrans-owned right-of-way, the extent of each sensitivity level was calculated along each road alignment, (as shown in Appendix E), again with a 10-meter- (32.8-foot-) wide right-of-way buffer. When the two environmental parameters are added to the landform map, the resulting model estimates that the potential for buried resources is Very Low to Moderately Low along about 50.5 percent of all roadways (n=13,761 acres), compared to 54 percent estimated by the landform map alone; a reduction of about 3.5% or 932.3 acres overall (Table 23). About one-fourth of the total roadways (n=6,923 acres, or 25.4%) have a Moderately High to Very High buried site potential with the inclusion of environmental parameters, compared to 35.7 percent based on just the landform map; a reduction of more than 10 percent or about 2,800 acres total. These reductions are contrasted by a 13.7 percent (3,731.7 acres) increase in the amount of area estimated to have a Moderate buried site potential (about 24% or 6,542.5 acres). Thus, adding environmental parameters suggests buried potential is Moderate or lower along more roadway segments (74.5%) than estimates based on the landform map alone (64.3%).

Table 23. Buried Site Potential of Landform Map Compared to Environmental Parameters along all Roadways in District 6/9.

Buried Site Potential	Landform Map Acres	% Map Acres	Environment Acres	% Environment Acres	Environment vs. Map Acres	Environment vs. Map % Acres
Very High	0	0	5,312.1	19.5%	0.0	0.0%
High	9,723.3	35.7%	1,166.8	4.3%	-8,556.5	-31.4%
Moderately High	0	0	445.2	1.6%	0.0	0.0%
Moderately High to Very High Total	9,723.3	35.7%	6,924.0	25.4%	-2,799.3	-10.3%
Moderate Total	2,810.8	10.3%	6,542.5	24.0%	3,731.7	13.7%
Moderately Low	769.7	2.8%	1,907.4	7.0%	1,137.7	4.2%
Low	2,587.0	9.5%	3,705.1	13.6%	1,118.1	4.1%
Very Low	11,339.1	41.6%	8,151.0	29.9%	-3,188.1	-11.7%
Very Low to Moderately Low Total	14,695.8	54.0%	13,763.5	50.6%	-932.3	-3.4%

Roads with the greatest number of acres identified as having a Very Low to Moderately Low buried site potential account for nearly 2,600 acres, or about 9.5 percent of all roadways (Table 24). Those with the most acres of Moderately High to Very High buried site potential make up a little more than 2,000 acres, or about 7.5 percent of all roadways (Table 24). There is a Very Low to Moderately Low potential along 21 other roads that cover between about 110 and 303 acres each, and a Moderately High to Very High potential along 21 roads that cover between about 100 and 272 acres each (Appendix E). State Route KER-58 has some of the longest segments of both reduced and high potential of any roadway within District 6/9.

Overall, environmental parameters plus landform age estimates that the potential for buried sites is Moderately Low or less in the majority (~75%) of the Study Area (see Figure 59), and along more than half of the roadways (54%). At the same time, there is a Very High buried site potential in about nine percent of the Study Area, and along nearly 20 percent of the roadways, suggesting that only about one-fifth of the roadways may require the greatest level of scrutiny. By focusing attention on where buried sites are most likely to occur, the model can help narrow the size of the area that needs to be searched for potentially buried sites, thus increasing the likelihood that buried sites will be identified while reducing the amount of time and effort needed to do so.

Table 24. Roadways with the Greatest Linear Extent of Reduced or Elevated Buried Site Potential Based on Environmental Parameters.

State Route	Very Low to Moderately Low		Moderately High to Very High	
	Acres	% All Roads	Acres	% All Roads
FRE-168	419	1.5%	-	-
FRE-180	584	2.1%	-	-
INY-190	443	1.6%	-	-
INY-395	-	-	619	2.3%
MNO-395	437	1.6%	-	-
KER-5	-	-	457	1.7%
KER-14	-	-	302	1.1%
KER-58	717	2.6%	386	1.4%
KER-99	-	-	291	1.1%
Grand Total	2,600	9.5%	2,055	7.5%

ESTIMATING BURIED SITE POTENTIAL: LIMITATIONS, PERFORMANCE, AND USE

Before selecting any single approach to address the buried site potential of an area, one should first consider the general accuracy and practical limitations of the landform-age map and environmental model based on that map. It should be kept in mind that the map and model were designed to function as general planning tools that allow for relatively quick assessments of buried site potential at the scale of single landforms or entire landscapes. While the map should be relatively accurate in identifying areas most likely to contain buried archaeological resources, neither it nor the model are designed to pin-point exactly where, within those landforms, buried sites will be found, because there are simply too many unknown and unknowable factors.

As a consequence, the age and extent of the landforms depicted in Figure 17 and the estimated buried site potential modeled in Figure 60 should only serve as an initial guide for planners, managers, and archaeologists. The following section examines the primary limitations of the map, and provides a preliminary evaluation of the model's accuracy, to help illustrate how they should and should not be used in the Study Area.

Limitations of Environmental Parameters

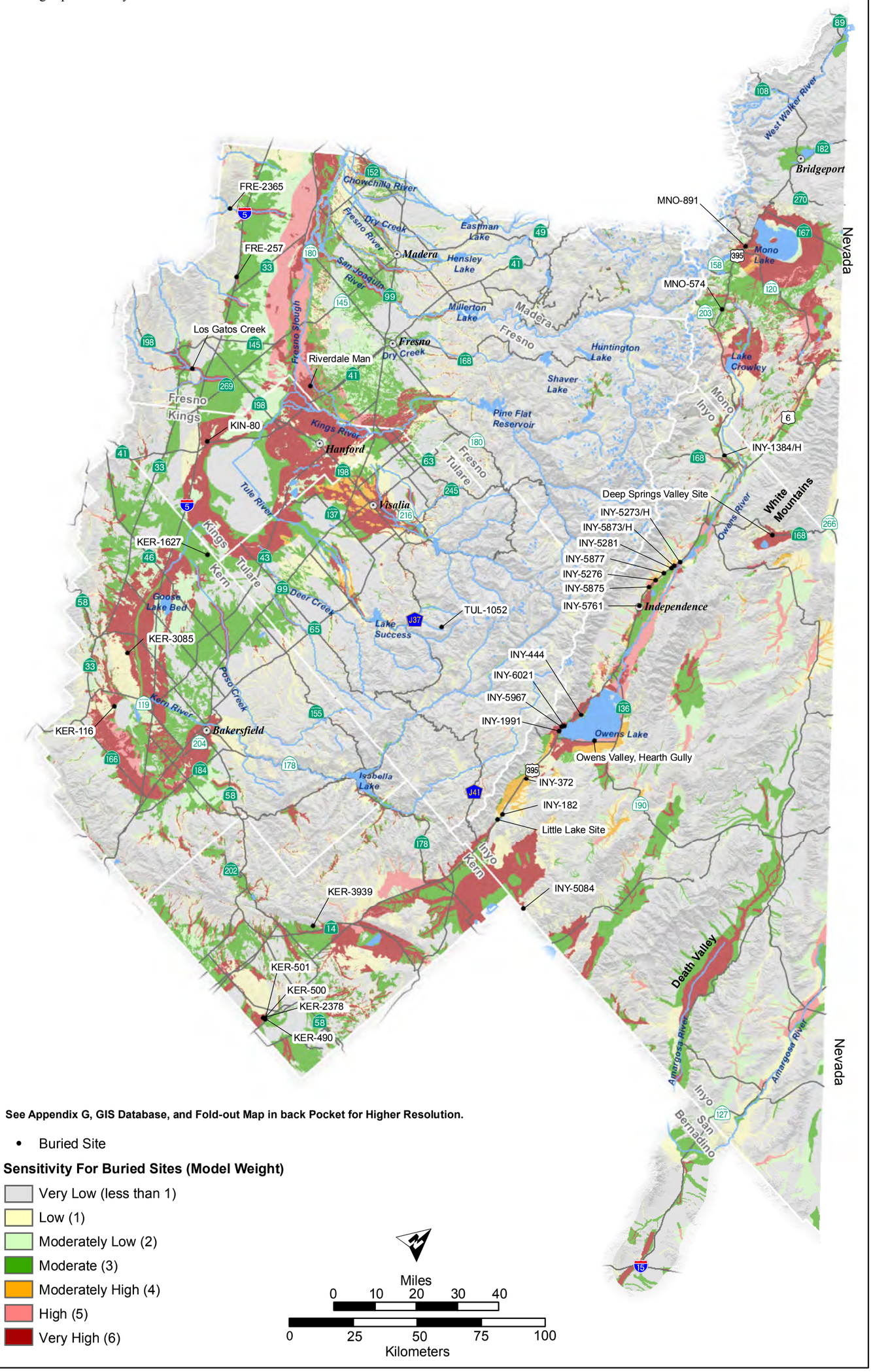
The overall utility and predictive power of the environmental model are undoubtedly affected by some obvious and, perhaps, not-so-obvious limitations that should be kept in mind. First and foremost, the environmental model shares the same inherent limitations as the landform map from which it is derived. Although the model attempts to compensate for some of the map's limitations by considering surface slope and distance to water, it does not change the predictions based on landform age. By emphasizing or de-emphasizing the variables considered most relevant for predicting specific site locations, the environmental model is at best an enhanced or extended version of the landform map, and should be viewed as such.

The spatial resolution of the environmental model is further limited by the size of the 90-x-90-meter (~295-x-295-foot), grid cells used to determine the degree of surface slope throughout the Study Area. Thus, the model does not convey all the actual variability of surface slopes or variations in buried site potential associated with differences in slope, overestimating it in some areas and underestimating it in others.

The model does not explicitly account for possible relationships between altitude, aspect, vegetation cover, and seasonal temperature variations on the distribution of human settlements as a function of metabolic (caloric) costs. While some metabolic cost functions may be embedded in the model's use of surface slopes (i.e., steep slopes less sensitive than gentle slopes), the model may overestimate the buried site potential in areas that tend to be cooler (i.e., high-altitudes and north-facing slopes) and/or areas that lack protective vegetation cover (i.e., arid plateaus and high-altitudes).

Note Regarding Sensitivity: The potential for buried archaeological resources depicted on this map is based on the distribution and age of geological deposits present at the modern ground surface, distance to water, and landform slope.

Compiled from Soil Survey Geographic Database and U.S. General Soil Map coverages produced by the Natural Resource Conservation Service.



See Appendix G, GIS Database, and Fold-out Map in back Pocket for Higher Resolution.

- Buried Site

Sensitivity For Buried Sites (Model Weight)

- Very Low (less than 1)
- Low (1)
- Moderately Low (2)
- Moderate (3)
- Moderately High (4)
- High (5)
- Very High (6)

Figure 60. Buried Site Potential Model for District 6/9 with Distribution of Known Buried Sites.

Because the distance to water criterion is based on the modern configuration of the landscape, it does not explicitly account for long-term changes in the position of stream and river channels. The present course of the lower Kern River represents one such example, as it was not established until sometime in the 1870s (Grunsky 1898b). Similarly, segments of many historic-era streams and rivers have been artificially straightened for purposes of flood control and other land-use changes. Since prehistoric streams and rivers did not always follow the same courses they do today, the locations of some prehistoric sites are not related to the position of currently active channels, but are instead related to the position of formerly active channels. Some areas with no visible evidence of a channel may actually have more potential to contain buried sites than an area located near a present day channel. Consequently, working assumptions about site locations and the distance to water must be viewed with caution, as present channel positions are not always reliable indicators of where prehistoric sites may be located.

Further, stream and river courses are often not conducive to the burial or preservation of archaeological deposits because they are generally zones of intense erosion and alluvial reworking while active. When channels become inactive they tend to quickly fill with sediments during floods, or become marshy or wetland areas (i.e., abandoned slough, cutoff meander, or oxbow lake) that are themselves unattractive settings for human settlement. In either case, abandoned channels usually do not contain any buried soils or archaeological sites because they are relatively unstable features of the landscape. This is clearly the case in areas where segments of historic-era stream or river channels were filled with relatively recent sediments, or were abandoned by artificial straightening of the channel. This is why the buried site potential of areas mapped as being Historic to Modern in age is judged to be no more than Moderate (see Table 22).

Given these imperfections, the environmental model cannot be expected to always provide accurate predictions of buried site potential, as there will undoubtedly be some misassignments, especially if no further thought, effort, or discretion is used in its application. If acknowledged and tested, however, many of these limitations may be overcome by adapting and revising the model's parameters to suit specific areas.

Testing the Landform Map and Environmental Model

While at least 34 radiocarbon-dated buried sites are located in a variety of settings throughout the Study Area (see Figure 60, Appendix F), few if any of these were identified as part of systematic geoarcheological investigations. A tabulation of the expected buried site potential at these site locations indicates more than 40 percent are situated in areas of Very High potential, while one-half (n=17, or 50%) are in the combined areas of High and Very High potential (Table 25). Almost two-thirds (~62%) of these sites fall within areas of Moderately High or greater potential, and almost 80 percent (~79%) occur within areas where the potential is Moderate or higher. Therefore, only about one-fifth (n=7, or ~21%) of the known buried sites fall within areas identified by the environmental model as having Moderately Low to Very Low buried site potential (Table 25).

However, two sites (INY-0182, Stahl Site and INY-5084, Burro Canyon) falling in the Low potential area, occur where landform age assignments are based on the general STATSGO soil data. The poor resolution of these data may explain the underestimated potential of these site areas. By excluding these two sites, the model correctly places nearly two-thirds (n=21, or 65.6%) of the 32 remaining buried sites in areas of elevated potential (i.e., Moderately High or greater), and almost 85 percent in areas with Moderate or greater potential. The presence of the other five buried sites in locations predicted to have Moderately Low to Very Low potential, may be related to the resolution of the SSURGO mapping, as these sites are in upland areas (e.g., TUL-1052) or eastern California, where depositional landforms tend to be heterogeneous and difficult to map in detail.

To further assess if the environmental model works better or worse than "pure chance," a Monte Carlo simulation (computer algorithm) was used to select sites at random 34 times from the approximately 1,500 sites identified by the District 6/9 TEA rural road surveys. After one hundred iterations, this process generated arandom sample of 3,400 sites that approximate an "expected by-chance" distribution. Table 26 summarizes the results of the simulation, and compares the predicted buried site potential at locations with buried sites to the predicted potential at sites identified in the random sample.

This table shows that the model outperforms the random sample in each category of elevated potential by margins 2.3 to 22.5 percent, and in two of the three categories of reduced potential by margins of 9.1 to 24.7

Table 25. Buried Site Potential Identified by Environmental Model at Known Buried Sites.

County, Site, or Location	Buried Site Potential (map and model score combined)						
	Very High (6)	High (5)	Mod. High (4)	Moderate (3)	Mod. Low (2)	Low (1)	Very Low (0)
Fremont, Los Gatos Creek Site	1	-	-	-	-	-	-
Fremont, Riverdale Man	1	-	-	-	-	-	-
FRE-0257, Arroyo Hondo	1	-	-	-	-	-	-
FRE-2365, Panoche Creek	1	-	-	-	-	-	-
Inyo, Deep Springs Valley Site [a]	1 [a]	-	-	-	-	-	-
INY-0444, Ray Cave	1	-	-	-	-	-	-
INY-1991, Olanche/Cartago	1	-	-	-	-	-	-
INY-5967, Olanche/Cartago	1	-	-	-	-	-	-
INY-6021, Olanche/Cartago	1	-	-	-	-	-	-
KER-0116, Buena Vista Lake	1	-	-	-	-	-	-
KER-3085, Elk Hills	1	-	-	-	-	-	-
KER-3939, Clark Wash	1	-	-	-	-	-	-
KIN-80, Tulare Basin	1	-	-	-	-	-	-
MNO-0891, Walker Creek	1	-	-	-	-	-	-
Inyo, Owens Valley, Hearth Gully	-	1	-	-	-	-	-
INY-5273/H	-	1	-	-	-	-	-
INY-5276	-	1	-	-	-	-	-
INY, Little Lake Site [a]	-	-	1 [a]	-	-	-	-
INY-0372, Rose Spring [a]	-	-	1 [a]	-	-	-	-
INY-5281	-	-	1	-	-	-	-
INY-5875	-	-	1	-	-	-	-
INY-5761, Independence	-	-	-	1	-	-	-
KER-490, Rogers Lake	-	-	-	1	-	-	-
KER-500, Rogers Lake	-	-	-	1	-	-	-
KER-501, Rogers Lake	-	-	-	1	-	-	-
KER-1627	-	-	-	1	-	-	-
MNO-0574	-	-	-	1	-	-	-
INY-1384/H	-	-	-	-	1	-	-
INY-0182, Stahl Site [a]	-	-	-	-	-	1 [a]	-
INY-5084, Burro Canyon	-	-	-	-	-	1 [a]	-
INY-5873/H	-	-	-	-	-	1	-
INY-5877	-	-	-	-	-	1	-
KER-2378, Rogers Lake	-	-	-	-	-	1	-
TUL-1052, Sunset Point	-	-	-	-	-	-	1
Grand Total (n=34)	14	3	4	6	1	5	1
Percent of Total	41.2%	8.8%	11.8%	17.6%	2.9%	14.7%	2.9%
Cumulative Percent (L to R)	41.2%	50.0%	61.8%	79.4%	82.3%	97.0%	100.0%

Notes: See Figure 60 for location and Appendix F for additional information on these buried sites; [a] Site in STATSGO area.

percent (Table 26). In the categories of Moderate and Moderately Low potential, however, the model and random sample are nearly identical, suggesting the model's predictive value may be no better than chance in these areas. The model is most predictive within the opposing categories of Very High and Very Low potential, and is generally reliable in predicting areas of elevated or reduced potential overall (see upper chart of Figure 61).

Next, a chi-square test was applied to determine if the predicted potentials at the 34 actual buried sites are similar to those of the random sample (i.e., accept null hypothesis), or whether they are different and statistically independent (i.e., reject null hypothesis). This test yields a probability value of less than zero (<0.001)

Table 26. Predicted Buried Site Potential at Actual Buried Sites Compared to Random Sample.

Predicted Buried Site Potential	Actual Buried Sites	Random Sample	% Total Actual	% Total Random	% Actual minus Random	Predictive Value
Very High	14	635	41.2%	18.7%	22.5%	positive
High	3	221	8.8%	6.5%	2.3%	positive
Moderately High	4	105	11.8%	3.1%	8.7%	positive
Moderate	6	607	17.6%	17.9%	-0.2%	neutral
Moderately Low	1	84	2.9%	2.5%	0.5%	neutral
Low	5	809	14.7%	23.8%	-9.1%	positive
Very Low	1	939	2.9%	27.6%	-24.7%	positive
Totals	34	3,400	100.0%	100.0%	0.0%	

which is significantly less than the 0.05 value commonly considered as the critical threshold to reject the null hypothesis. This confirms that the environmental model as a whole operates independently of chance.

But how much better does the environmental model perform overall? If the chance of finding a buried site at random is assumed to be about "fifty-fifty" (a very generous estimate, given that only a small percentage of known sites in the study area are buried), then the model's performance can be measured against this baseline. Compared to this, the model is at least 18.6 percent better at predicting areas of elevated potential, and at least 24 percent better at predicting areas of Low or Very Low potential (see lower chart of Figure 61). Despite the many limitations outlined above, these results demonstrate that the model can and does predict where buried sites tend to occur with greater accuracy and reliability than random chance. Confident that it performs as designed and intended, the practical aspects of using the model to identify and sample buried sites is outlined in the following chapter (Chapter 7).

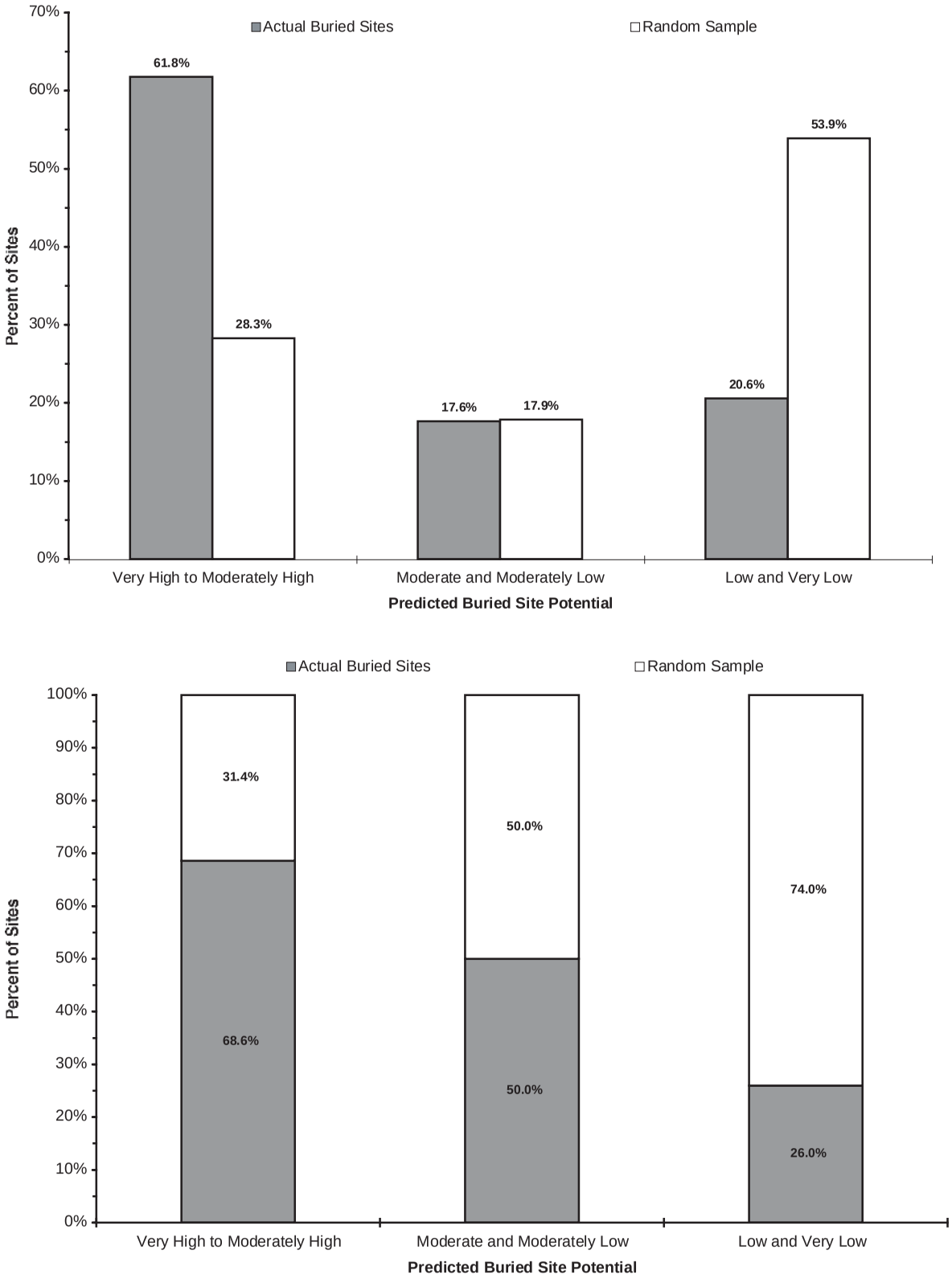


Figure 61. Predicted Potential for Buried Sites at Actual Buried Sites (observed) Compared to Random Sample of Sites in District 6/9.

CHAPTER 7. APPROACHES FOR IDENTIFYING AND SAMPLING BURIED SITES

The current overview and mapping effort represents an initial attempt to identify areas with elevated and reduced potentials for buried archaeological deposits useful for planners, resource managers, and archaeologists. To know where buried sites are likely or unlikely to occur, it is first necessary to understand the age, nature, and extent of depositional landforms. In this regard, the landform map (see Figure 17) should serve as a useful starting point for resource managers who need to evaluate buried site potential as part of preliminary planning and budgeting scenarios where the Area of Potential Effects (APE) and/or Area of Direct Impact (ADI) of a proposed project cannot yet be fully defined (e.g., large or linear areas with multiple alternatives). Since the vertical and horizontal extents of earth disturbances are equally important for considering possible impacts to potentially buried sites, the vertical dimension (i.e., depth) of an APE/ADI must also be defined. Once a three-dimensional APE is defined and the ADI known, the environmental model (see Figure 60) should be used to assess the buried site potential of areas where specific earth-disturbing activities are proposed, because it also considers the factors of surface slope and distance to water that are more localized.

When evaluating the need for additional archaeological studies or fieldwork, the crucial questions become: (1) what is the potential for buried sites within a project area?; and (2) is there reason to think that proposed project activities could impact buried sites? Generally speaking, projects that cross or are located within younger depositional landforms (i.e., late and latest Holocene) will usually need some further work because these landforms tend to have the greatest likelihood of containing buried archaeological sites. Conversely, no further work may be needed or warranted for projects that cross or are located within older (i.e., pre-Holocene) or non-depositional (e.g., most bedrock slopes) landforms, because they generally have the lowest potential for buried sites. Thus, depending on the nature and scope of a proposed project, areas of Moderately High through Very High potential may often require additional attention, perhaps leading to more focused geoarchaeological studies. These might include additional archival background research, field checking and examinations, subsurface explorations (e.g., trenching or coring), or more detailed modeling efforts.

Upland regions, such as the Sierra Nevada, White Mountains, and Coast and Transverse ranges, cannot be simply evaluated using landform age or the buried site potential model. The heterogeneity of these upland landscapes, combined with a lack of detailed soil and Quaternary maps, mandate that buried site potential be considered more carefully on a project-by-project basis. The types of potentially sensitive landforms listed in Table 17 should serve as a general guide, leading to more focused geoarchaeological studies in these contexts. However, because buried archaeological sites have been discovered in a number of landform contexts in the Sierra, including some hillslope positions, it is difficult at this point to predict precisely where such deposits will be found, beyond the general types of landforms noted. In these areas, it may be necessary to consult additional sources of information and conduct field inspections to determine if sensitive landforms are present. The predictive model developed for this study may prove useful for considering other important factors (i.e., slope and water) in these upland settings (see Figure 60). At the same time, whether sites are buried or at the surface, the value of personal insight, intuition, and understanding of a place or project area for predicting the locations of archaeological sites should not be underestimated.

SURVEY STRATEGIES AND SAMPLING METHODS

This section provides practical suggestions for how to implement the predictive model, and how a landscape approach can be used to guide archaeological research and field methods within the confines of compliance-based archaeology. It is hoped these suggestions will assist in the design of field strategies that are more efficient, and in the selection and use of methods that are more effective for identifying buried sites.

Phase I Survey

Because buried sites typically lack visible or obtrusive features that would indicate their presence to an observer in the field, most are not found by conventional pedestrian surface surveys (Bettis 1992:120). If it is accepted that buried sites "are probably always underrepresented in survey samples" (Nance 1983:349), then the

difficulty of locating these sites can be treated as a fundamental sampling problem that can be addressed by studies at the inventory and research design phases (McManamon 1984). Consequently, surface surveys are generally more efficient and effective in identifying sites, whether buried or not, when they are designed and executed with these expectations in mind.

For example, the landform map can be used to determine what parts of a survey area are composed of old non-depositional landforms and what parts contain young, depositional landforms (see Figure 17). More survey time and effort is often justified on the old non-depositional landforms because they are more likely to have surface sites. At the same time, since younger depositional landforms are more likely to contain buried sites, the amount of surface survey can sometimes be reduced with the focus placed on the examination of any subsurface exposures (e.g., cutbanks, roadcuts) instead. Due to these factors, shallow shovel test pits will usually be an appropriate and effective method for identifying sites at or near the surface of old, non-depositional landforms, but are comparatively inappropriate and ineffective for identifying sites that may be buried in depositional settings.

Phase I Extended "Subsurface" Survey

Before buried sites can be avoided, sampled, or otherwise "managed," they must first be identified. Early identification of buried sites is particularly important for transportation projects, which can suffer significant delays and incur unexpected costs if a buried site is discovered "late" in the design or construction phases. Thus to help insure that project schedules (critical path) and budgets are not inadvertently affected by late archaeological discoveries, it may be crucial that some type of subsurface exploration is conducted in areas where there is a reasonable potential that buried cultural resources are present and may be disturbed. When designed and conducted in an informed fashion, subsurface explorations help satisfy the Section 106 requirement that "a reasonable and good faith effort to carry out appropriate identification efforts" is made [800.4(b)(1)].

Subsurface surveys or explorations for buried archaeological sites have become an important part of the initial identification process in California and elsewhere across the country (Monaghan et al. 2006). The ability to locate buried sites in a given project area depends on whether or not appropriate methods are properly used to explore sensitive landforms. Independent testing of exploratory methods such as backhoe trenching, coring and auguring, and geophysical survey (resistivity, magnetometry, and ground-penetrating radar) has found that backhoe trenching is the most effective way to identify buried archaeological sites (Monaghan et al. 2006; Monaghan and Lovis 2005). This is reinforced by the authors' experience working throughout California. Coring or auguring, however, may be the only practical method in some locations—such as urban or wetland settings, or areas where Holocene-age deposits exceed the depth (thickness) accessible with a backhoe or excavator (about 4.5-7.3 meters [15-24 feet], respectively). Consequently, the selection of an appropriate sampling method will likely depend on the nature and extent of earth disturbances (i.e., horizontal and vertical area of potential effects) proposed in specific portions of a project area. But just how deep can we expect sites to be buried?

The age and depth of 367 radiocarbon-dated samples from buried natural and cultural deposits provide some indication of the depths at which sites of different ages may be buried. While there is considerable variability in the age and depth of these samples, they follow an overall trend of greater depth with increasing age, with natural deposits being slightly deeper than cultural deposits of the same age (Figure 62). Based on this, most of the natural deposits and all but one of the known buried sites appear to occur at depths of about 4.5 meters (~15 feet) or less, coincident with the maximum depth normally reached using a backhoe.

An interesting exception occurs among some middle Holocene samples which, along with the Los Gatos Creek site, form a perceptible cluster between about 6.5 to 13 meters (~21 to 42 feet) in depth (Figure 62). Further comparisons reveal that the mean depth of all middle Holocene-age contexts (3.74 meters, or ~12.3 feet) is greater than that for any major time period (Table 27). At only about 2.6 meters (~8.5 feet), the mean depth of early Holocene-age deposits is 1.15 meters (~3.8 feet) less than the middle Holocene, thus running counter to what one might expect if a simple time-depth model is assumed. This provides further evidence that middle Holocene-age deposits are not missing but were often formed in low-lying landscape positions that are now deeply buried along with any associated cultural deposits.

Figure 62. Comparison of the Age and Depth of Buried Natural and Cultural Contexts.

Table 27. Depth of Buried Radiocarbon Samples by Time Period.

Description	Latest Pleistocene	Early Holocene	Middle Holocene	Late Holocene	Latest Holocene
Mean Depth (meters)	3.69	2.59	3.74	2.48	1.54
Minimum Depth (meters)	0.75	0.28	0.35	0.43	0.18
Maximum Depth (meters)	13.60	10.45	13.00	10.85	9.75
Sample Count (n=367)	19	64	66	85	133
Mean Depth Compared to Middle Holocene (meters)	-0.5	-1.15	0	-1.26	-2.20

Note: Excludes dates from lacustrine and marsh deposits

Because buried sites are often associated with formerly stable land surfaces marked by buried soils, the identification of buried archaeological sites will be facilitated by the identification of buried soil horizons, which are often laterally extensive and traceable over considerable distances. Since the majority of known buried archaeological deposits occur at depths of 4.5 meters (~15 feet) or less, it appears that subsurface exploration using a backhoe would be the most appropriate method for identifying potentially buried sites in most of the sensitive portions of the project area. Given these factors, subsurface explorations will usually be needed in areas where earth disturbances are planned and the potential for buried sites is predicted to be Moderately High, High, or Very High (see Figure 60).

Phase II Test Evaluation and Phase III Data Recovery

Based on the timing and nature of landscape evolution and evidence from previously excavated archaeological sites, a number of general observations can be made about the structure of the archaeological record in the study area. These observations should assist in designing and implementing future field strategies and in interpreting the chronostratigraphic context of excavated sites.

The way in which radiocarbon dates, obsidian hydration readings, and other chronometric information is obtained and interpreted suggests that many archaeologists are searching for a simple time-depth relationship to the archaeological record. This assumption probably stems from the prevailing view of stratigraphy as discrete, well-defined layers built up over time, like those found in rock shelters and shell mounds. However, anthropogenic and natural sediment input was seldom sufficient to build chronostratigraphic structure in the archaeological record of central California. In fact, the dominant geomorphic process during the Holocene was landform stability, with little or no sediment input for hundreds or thousands of years at a time. When deposition did occur, it often resulted in large amounts of sediment accumulating on fans and floodplains in very short periods of time. Similar patterns of landform development are wide-spread in central California (Meyer 2000; Meyer et al. 1999; Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b) and have a number of implications for understanding the structure of the archaeological record.

1. Cultural stratigraphy often occurs at the scale of entire landforms. Brief intervals of deposition followed by extended periods of landform stability have resulted in multiple late Pleistocene and Holocene buried soils (i.e., buried land surfaces) in fans and floodplains throughout central California. Archaeological excavations and surveys that do not account for the entire Holocene depositional record will likely miss buried and potentially significant archaeological deposits.
2. Because sediment deposition was typically rapid, a significant amount of sterile sediment may separate a surface archaeological deposit and a buried one. Depositional episodes would likely have discouraged human occupation on actively aggrading landforms, at least temporarily. As a consequence, older portions of the archaeological record may be missed if hand excavation is halted after the surface archaeological deposit is exhausted, without accounting for the potential of more deeply buried materials. This is especially true for the alluvial fans and floodplains in lowland valleys, where Holocene-age soils are often found buried as deep as three to five meters (10 to 15 feet) below surface.

3. While buried sites are often temporally discrete they can also be chronologically mixed. Archaeological materials deposited over periods of long-term land stability may be discarded (super-imposed) on a common surface, whether or not that surface was subsequently buried. In addition, since human occupation was seldom continuous on aggrading landforms, archaeological materials found deeper in a soil profile are often the result of downward mixing from natural and cultural processes (biogenic and anthropogenic, respectively). Thus, deeper archaeological materials found in stable landforms may be no older than shallower materials.

These observations about the structure of the archaeological record should, in part, dictate the types of sampling strategies and methods employed during the identification phase and subsequent testing and data recovery investigations for archaeological studies. As an initial step, research on the age of project area landforms should be completed prior to any field investigations. This will allow for a focused study of landforms with a potential for buried deposits, and minimize effort in landforms lacking buried site potential. In addition, field methods should be designed to account for both the horizontal and vertical extent of Holocene-age geological deposits at an individual archaeological site or within a particular study area. These deposits will be bounded by stratigraphic unconformities, typically distinguished by buried soil profiles. The timing of soil development and alluvial and colluvial deposition has important implications for bracketing the age of buried archaeological sites, as well as defining the timing and nature of Holocene landscape evolution. Consequently, future studies should seek to identify and obtain radiocarbon dates for buried land surfaces and capping deposits to better refine the natural chronostratigraphic sequence of depositional landforms within District 6/9.

Further, the age of surface landforms is also relevant for identifying under-represented portions of the archaeological record, particularly sites older than latest Holocene in age. As shown in Figure 24, while most (86%) surface cultural contexts date to less than 2000 cal BP, nearly three-fourths (~73%) of buried natural contexts date to more than 2000 cal BP, as do more than one-third (~37%) of those from known buried cultural contexts. It should be expected, therefore, that older landforms and buried surfaces will contain earlier and/or under-represented portions of the archaeological record, which will have elevated significance from the standpoint of archaeological research and legal compliance. Thus, an informed and integrated geoarchaeological approach would likely help future archaeological studies in the region address these research and methodological issues.

USING THE BURIED SITE POTENTIAL MODEL

At a general level, it is relatively easy to predict that buried archaeological sites will be found in Holocene-age depositional landforms. Predicting exactly where they are located, however, is a far more difficult task which some have likened to "looking for a needle in a haystack." While the needle cannot be made larger, the size of the "Holocene haystack" can be reduced by dividing it into smaller and more manageable zones of buried site potential using the predictive model developed here. This approach should reduce the amount of area (i.e., volume of sediments) that may need to be searched and increase the likelihood that buried sites will be identified, if present.

At the same time, the buried site potential zones must be considered a best approximation, because their boundaries are derived from a number of working assumptions using a variety of different datasets. We do not believe the boundaries of sensitivity zones should be considered rigid depictions of where and where not to do subsurface explorations, but rather, should be employed in combination with professional judgment based on field observations.

The chances of actually finding a buried site are reduced even further when the search is confined to an auger or core hole, hand-excavated test unit, or backhoe trench, especially if a proper sampling interval is not used. We believe the success rate can be improved overall, however, by focusing the majority of the field effort in Moderately High to Very High zones and employing tight sampling intervals when buried soils are identified. Zones of Moderate and Moderately Low potential should be tested occasionally using a more intuitive approach with broader sampling intervals. If the model is correct, buried sites will not usually occur in zones of Low and Very Low potential, so these areas should only rarely be investigated. The actions and level of effort suggested for each of the buried site potential categories are summarized in Table 28.

Table 28. Suggested Actions and Level of Effort for Zones of Buried Site Potential.

Buried Site Potential (score)	% Compared to. Chance	Predictive Value	Suggested Action/ Effort Level	Suggested Sampling Interval
Very High	22.5%	positive	Testing almost always required	20 to 30 meters
High	2.3%	positive	Testing often required	30 to 50 meters
Moderately High	8.7%	positive	Testing usually required	50 to 100 meters
Moderate	-0.2%	neutral	Testing occasionally required	Intuitive
Moderately Low	0.5%	neutral	Testing occasionally required	Intuitive
Low	-9.1%	positive	Testing rarely required	Intuitive
Very Low	-24.7%	positive	Testing almost never required	None

From a management perspective, probably the most important variable to consider when choosing subsurface sampling locations is the depth and nature of proposed project-related impacts. Depending on the scope of the project, it might be reasonable to sample areas in the lowlands where earthmoving will be substantial, or where large foundations or footings will extend well below surface, regardless of sensitivity (although different sampling methods or intervals may be applied to different zones). Furthermore, depth of disturbance becomes more of an issue around valley margins where buried sites are expected to occur in shallower contexts, but less of an issue in valley bottoms where sites are likely to be buried much deeper. If no buried soils are present within the depth-range of project impacts in the valley bottoms, then additional subsurface testing may not be necessary. Conversely, if soils buried by Holocene-age deposits are found within the range of impacts, then these soils should be targeted and explored to determine if archaeological remains are present.

Since the model's overall utility can only be evaluated if it is systematically tested, most of the subsurface survey effort should first be directed to Very High potential zones. If no buried sites are encountered in these areas after a reasonable amount of investigation (i.e., several moderate to large projects), then the model should be re-evaluated. If buried sites are regularly found in Very High sensitivity zones, then additional effort by future projects should also be devoted to zones with High and Moderately High potential. This should be done to determine if the potential for buried sites in these zones is higher than currently estimated (i.e., 2.3-8.7%). If few or no sites are found in these areas after a reasonable number of projects, then field investigations should focus on the zones of Very High potential. Although subsurface exploration will generally not be needed in zones of Moderate and Moderately Low potential, some limited investigation may occasionally be warranted if additional information becomes available or if a buried site is uncovered by earth-moving activities. Finally, the zones of Low and Very Low potential should not be investigated unless there is a compelling reason to do so, such as field observations that suggest the mapping is inaccurate.

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APPENDICES A–G

INCLUDED ON CD INSIDE BACK COVER

(Appendix G is also included as fold-out maps in back pockets.)

Volume II: Appendices
A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9

Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways

EA 06-0A7408 TEA Grant

By:
Jack Meyer
D. Craig Young
Jeffrey S. Rosenthal

February 2010

Counties:
Fresno
Kern
Kings
Madera
Tulare
Inyo
Mono

Keywords:
Buried Sites
Buried Soils
Geoarchaeology
Landform Evolution
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San Joaquin Valley
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Fresno, CA 93726

APPENDICES

Appendix A.	Radiocarbon Dates Documenting Tulare Lake Level History.
Appendix B.	Radiocarbon Dating Methods, Results, and Database.
Appendix C.	Soil Types, Age Assignments, and Definitions for Soil Horizons and Layers.
Appendix D.	Obsidian Hydration Methods, Results, and Database.
Appendix E.	Extent of Buried Site Potential along each State Route in District 6/9 Based on Landform Map and Predictive Model.
Appendix F.	Known Buried Prehistoric Archaeological Sites in Caltrans District 6/9.
Appendix G.	Quaternary Geology Map and Buried Site Potential Map for District 6/9. (Also included as fold-out maps in back pockets.)

APPENDIX A

RADIOCARBON DATES
DOCUMENTING TULARE LAKE LEVEL HISTORY

Appendix A. Radiocarbon Dates Documenting Tulare Lake Level History

County, Area, or Site Number	Sample Elevation (m)	Context	Deposit Type	Location, Provenience, and/or Description	Material	Min. Depth (cm)	Max. Depth (cm)	14C BP	±	12C/13C	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference
KIN, Tulare Lake	63.6	Below Lake	Lacustrine	Rambla Shoreline, DWR Trench 2a, Unit 7b	Shell-f (gastropod)	101	101	820	40	nr	-1	**99**	229	Beta-170149	Negrini and Wigand in Gardner 2002
KIN, Tulare Lake	64.0	Below Lake	Lacustrine	Rambla Shoreline, DWR Trench 2	Bone (fish)	53	74	100	50	-	9	**119**	151	Beta-170147	Negrini et al. 2006
KIN-32, Witt Locality	59.4	Below Lake	Surface deposit	MPS 13S/21W per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	0	1	830	70	-6.8	-1	**124**	254	Beta-097873	Fenenga pc 2009
KIN-32, Witt Locality	58.8	Below Lake	Surface deposit	VDE 127N/25W per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	0	1	130	80	-7.1	-4	**145**	292	Beta-097876	Fenenga pc 2009
KIN, Tulare Lake	64.0	Below Lake	Lacustrine	Rambla Shoreline, DWR Trench 2a, Unit 10	Bone (fish, Sac. sucker)	53	74	180	50	nr	60	**173**	233	Beta-170150	Negrini and Wigand in Gardner 2002
KIN, Dalton Site	60.0	Below Lake	Surface deposit	Dalton Site south of Utica Road per G. Fenenga (Dr-9 10N1W)	Shell-f (Anodonta)	20	30	190	50	-8.2	60	**177**	233	Beta-070678	Fenenga pc 2009
KIN, Tulare Lake, Omaha Canal	63.1	Below Lake	Surface deposit	Whole shell in growth position at contact of Cu horizon with 2Ab	Shell-f (Anodonta)	50	60	200	20	-7.6	145	**177**	215	OS-73445	This Report
KIN-66, Redtfeldt Mound	64.6	Above Lake	Surface deposit	TU-5, freshwater clam shell	Shell-f (freshwater)	20	30	900	40	-6.8	57	**190**	290	Beta-098150	Siefkin 1999
KIN-66, Redtfeldt Mound	63.8	Above Lake	Surface deposit	TU-1, freshwater clam shell	Shell-f (freshwater)	100	110	910	60	-5.8	0	**193**	313	Beta-097873	Fenenga 1996; Siefkin 1999
KIN-32, Witt Locality	58.1	Below Lake	Surface deposit	Flooterville per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	30	50	300	60	-7.9	275	**378**	502	Beta-070679	Fenenga pc 2009
KIN-32, Witt Locality	58.3	Below Lake	Surface deposit	Witt Site per G. Fenenga, Hopkins Locus 5	Shell-f (Anodonta)	10	20	350	60	-8.3	302	**401**	506	Beta-061917	Fenenga pc 2009
KIN-32, Witt Locality	58.3	Below Lake	Surface deposit	Corral Site per G. Fenenga (12S/0E), Hopkins Locus 7	Shell-f (Anodonta)	10	20	410	60	-6.8	417	**451**	531	Beta-070675	Fenenga pc 2009
KIN-66, Redtfeldt Mound	64.6	Above Lake	Surface deposit	TU-2, freshwater clam shell	Shell-f (freshwater)	20	30	1210	60	-6.6	365	**491**	618	Beta-098147	Siefkin 1999
KIN, Ewe 20	58.2	Below Lake	Surface deposit	Ewe-20 Site south of Utica Road per G. Fenega	Shell-f (Anodonta)	0	50	470	60	nr	427	**512**	562	nr	Fenenga pc 2009
KIN, Dalton Site	60.2	Below Lake	Surface deposit	Dalton Site south of Utica Road per G. Fenenga, TU-1 (Dr-7)	Shell-f (Anodonta)	0	10	520	50	-8.0	497	**543**	567	Beta-070677	Fenenga pc 2009
KIN, Dalton Site	60.0	Below Lake	Surface deposit	Dalton Site south of Utica Road per G. Fenenga (Dr-Z #243)	Shell-f (Anodonta)	0	50	1310	70	-6.3	463	**567**	668	Beta-061918	Fenenga pc 2009
KIN-32, Witt Locality	59.4	Below Lake	Surface deposit	MPS 23S/21W per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	0	1	600	60	-7.5	526	**600**	666	Beta-097875	Fenenga pc 2009
KIN-66, Redtfeldt Mound	64.3	Above Lake	Surface deposit	TU-4, freshwater clam shell	Shell-f (freshwater)	50	60	1460	70	-6.4	537	**679**	824	Beta-098149	Siefkin 1999
KER-1627	66.1	Above Lake	Surface deposit	Trench cut C, Strat. Unit E, overlies hardpan with fossil mammal remains	Soil (SOM)	27	27	940	90	-	685	**850**	989	Beta-012278	Breschini et al. 1985; CRD 1996
KIN, Dalton Site	59.8	Below Lake	Surface deposit	Dalton Site south of Utica Road per G. Fenenga (Dr-5 2N3W)	Shell-f (Anodonta)	40	50	1650	50	-6.8	724	**850**	958	Beta-070676	Fenenga pc 2009
KIN, LTNS-C12-1	65.2	Above Lake	Surface deposit	Column sample from TEU1, Stratum II	Shell-f (Anodonta)	20	30	1750	70	-	786	**960**	1131	Beta-184260	Chatters and Fogerty 2003
KIN, Croissant Site	63.1	Below Lake	Surface deposit	Croissant Site south of Utica Road on Dudley Ridge	Shell-f (Anodonta)	0	50	1950	60	nr	1020	**1169**	1288	nr	Fenenga pc 2009
KIN, LTNS-C12-1	65.1	Above Lake	Surface deposit	Trench 1, Feature 01, soil from base of Stratum II	Soil (SOM)	30	33	2005	35	-	1876	**1955**	2044	SR-6594	Chatters and Fogerty 2003
KIN, Tulare Lake	54.9	Below Lake	Lacustrine	Core 2, Blakeley Canal Silt	Organic Sediment	80	90	2030	80	nr	1818	**1997**	2160	A-5412	Davis 1999
KIN, Tulare Lake	56.5	Below Lake	Lacustrine	Lake Basin, CSUB Trench E, Unit 04	Shell-f (Anodonta)	71	76	2740	40	nr	1898	**2032**	2149	Beta-170146	Negrini and Wigand 2002
KIN-80, Tulare Basin	68.1	Above Lake	Buried alluvium	Rambla Shoreline Ditch Exposure	Shell-f (Anodonta)	106	106	2880	40	nr	2096	**2214**	2322	Beta-167851	Gardner 2002; Gardner et al. 2005
KIN-32, Witt Locality	58.9	Below Lake	Buried lacustrine	Snail from intact dune sand 2A/Cox contact below disturbed sand with paleo-artifacts, N bank of Blakely Canal	Shell-f (gastropod)	45	50	2250	30	-10.8	2156	**2232**	2266	OS-73446	This Report
KIN, Tulare Lake	56.5	At Lake Level	Buried soil/marsh	Lake Basin, CSUB Trench E, Unit 04	Organic Sediment	71	76	2370	40	nr	2331	**2412**	2494	Beta-170145	Negrini and Wigand in Gardner 2002
KIN, Tulare Lake	56.5	At Lake Level	Buried soil/marsh	Lake Basin, CSUB Trench E, Unit 04	Organic Sediment	71	76	2410	40	nr	2345	**2446**	2542	Beta-170144	Negrini and Wigand in Gardner 2002
KIN, Tulare Lake	57.6	At Lake Level	Buried soil/marsh	Arroyo Robador fan, CSUB Trench B, Unit 04, N of Kettleman City	Organic Sediment	122	140	2510	70	nr	2430	**2577**	2745	Beta-170148	Negrini and Wigand in Gardner 2002
KER-1627	65.8	Above Lake	Buried soil	Trench cut C, strat. Unit A	Soil (SOM)	52	52	2950	70	-	2926	**3119**	3335	Beta-012279	Breschini et al. 1985; CRD 1996
KIN, Tulare Lake	58.8	At Lake Level	Buried soil/marsh	Arroyo Robador fan, CSUB Trench B, Unit 04, N of Kettleman City	Organic Sediment	122	140	3340	80	nr	3393	**3579**	3729	Beta-170143	Negrini and Wigand in Gardner 2002
KIN-80, Tulare Basin	67.4	Above Lake	Buried soil	Rambla Shoreline Ditch Exposure	Bone (human)	177	177	4360	70	nr	4827	**4954**	5077	Beta-167852	Gardner 2002; Gardner et al. 2005

Appendix A. Radiocarbon Dates Documenting Tulare Lake Level History

County, Area, or Site Number	Sample Elevation (m)	Context	Deposit Type	Location, Provenience, and/or Description	Material	Min. Depth (cm)	Max. Depth (cm)	14C BP	±	12C/13C	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference
KIN, Tulare Lake	62.7	At Lake Level	Buried marsh	Rambla Shoreline, DWR Trench 2	Organic Sediment	185	195	5900	35	-	6651	**6719**	6795	WW-5304	Negrini et al. 2006
KIN, Tulare Lake	62.5	At Lake Level	Buried soil/marsh	Rambla Shoreline, DWR Trench 2b, Unit 04	Organic Sediment	207	207	6190	40	nr	6974	**7085**	7178	Beta-170151	Negrini and Wigand in Gardner 2002
KIN, Tulare Lake	53.5	Below Lake	Buried soil/marsh	Core 2, Blakeley Canal Silt	Organic Sediment	220	230	6770	110	nr	7438	**7629**	7829	A-5413	Davis 1999
TUL, Tulare River	69.1	Above Lake	Buried soil	3ABkb, in N bank of Tulare River channel below Colpien soil	Soil (SOM)	330	350	7010	50	-22.5	7722	**7848**	7946	OS-73065	This Report
KIN, Tulare Lake	62.5	At Lake Level	Lacustrine	Rambla Shoreline, DWR Trench 2	Charcoal	210	210	7250	35	-	7997	**8077**	8166	WW-5305	Negrini et al. 2006
KIN, Tulare Lake, 10th St Canal	62.5	At Lake Level	Buried soil/lacustrine	2Akb, dessicated lake soil, W wall of 10th St. Canal, below Tulare clay	Soil (SOM)	100	130	7530	40	-23.3	8299	**8358**	8411	OS-72699	This Report
TUL, Tulare River	69.7	Above Lake	Buried soil	2ABkb, in N bank of Tulare River channel below Colpien soil as mapped	Soil (SOM)	280	290	7560	40		8315	**8379**	8427	Beta-255483	This Report
KIN-80, Tulare Basin	66.7	Above Lake	Buried soil	Shell and Charcoal layer at base of canal on west side	Shell-f (freshwater)	240	250	8070	80	-3.2	8694	**8971**	9147	OS-70224	This Report
KIN, Tulare Lake	52.8	Below Lake	Lacustrine	Hole 9, desiccated muck above Blakely Canal silt	Organic Sediment (muck)	280	300	8180	45	nr	9016	**9125**	9268	USGS-1494	Atwater et al. 1986
KIN, Tulare Lake, 10th St Canal	61.9	Below Lake	Lacustrine	3Cg, uppermost lacustrine in W wall of 10th St. Canal, below Tulare clay	Soil (SOM)	160	190	8970	40	-20.7	10118	**10161**	10230	OS-72700	This Report
KIN, Tulare Lake	52.3	Below Lake	Lacustrine	Core 2, Blakeley Canal Silt	Organic Sediment	326	366	9100	160	nr	9739	**10265**	10675	A-5414	Davis 1999
KIN, Tulare Lake	51.4	Below Lake	Lacustrine	Core 2, Blakeley Canal Silt	Organic Sediment	420	440	9460	220	nr	10195	**10755**	11273	A-5415	Davis 1999
KIN, Tulare Lake	49.6	Below Lake	Lacustrine	Core 2, Blakeley Canal Silt	Organic Sediment	605	615	10110	350	nr	10763	**11770**	12788	A-5416	Davis 1999
KIN, Tulare Lake, Omaha Canal	61.9	Above Lake	Buried soil	5Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	165	175	11550	85	-23.7	13241	**13394**	13614	OS-72702	This Report
KIN, Tulare Lake, Omaha Canal	62.2	Above Lake	Buried soil	3Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	135	145	11800	85	-24.5	13435	**13656**	13820	OS-72701	This Report
KIN, Tulare Lake, Omaha Canal	62.8	Above Lake	Buried soil	2Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	70	80	11930	60	-24.3	13667	**13793**	13946	Beta-255484	This Report
KIN, Lemoore Air Station	63.0	Above Lake	Buried soil	Trench 1, Strat. 2, 2Ab/C, W of Boggs Slough, top of Lethent?	Soil (SOM)	195	210	11970	90	-22.5	13652	**13835**	14032	Beta-137204	Milliken and Young 2000
KIN, Tulare Lake	49.5	Below Lake	Lacustrine	Core 2, Chatom Silt	Organic Sediment	615	625	18370	230	nr	21122	**21816**	22364	A-5835	Davis 1999

APPENDIX B

RADIOCARBON DATING METHODS, RESULTS, AND DATABASE

General Statement of ^{14}C Procedures
at the National Ocean Sciences AMS Facility

All laboratory preparations for AMS radiocarbon analyses of submitted samples occur in the NOSAMS Sample Preparation Lab unless otherwise noted on the attached report of Final Results. Procedures appropriate to the raw material being analyzed include: acid hydrolysis (HY), oxidation (OC or DOC), or stripping of CO_2 gas from water (WS) samples. Carbon dioxide, whether submitted directly (GS) or generated at the NOSAMS Facility, is reacted with Fe catalyst to form graphite. Graphite is pressed into targets, which are analyzed by accelerator mass spectrometry along with primary and secondary standards and process blanks. The primary standard NBS Oxalic Acid I (NIST-SRM-4990) is used for all ^{14}C measurements. Every group of samples processed includes an appropriate blank, which is analyzed concurrently with the group. Process blank materials include IAEA C-1 Carrara marble and TIRI F Icelandic Doublespar for inorganic carbon and gas samples; FIRI A and B wood as well as FISONS acetanilide for organic carbon samples; a ^{14}C- free groundwater for DIC (dissolved inorganic carbon) samples; and Alfa Aeasar graphite powder for AMS machine background.

Fraction Modern (Fm) is a measurement of the deviation of the $^{14}C/C$ ratio of a sample from "modern." Modern is defined as 95% of the radiocarbon concentration (in AD 1950) of NBS Oxalic Acid I normalized to $\delta^{13}C_{VPDB}$ = -19 per mil (Olsson, 1970). AMS results are calculated using the internationally accepted modern value of $1.176 \pm 0.010 \times 10^{-12}$(Karlen, *et. al*.,1964) and a final ^{13}C-correction is made to normalize the sample Fm to a $\delta^{13}C_{VPDB}$ value of -25 per mil. NOSAMS has two accelerators for radiocarbon measurement, either a 3 Megavolt Tandetron system or a 500 kilovolt compact AMS system.

Stable isotope measurements of sample $\delta^{13}C$ are used to correct Fm values measured on the Tandetron system. These are typically made at the NOSAMS Facility with either a VG PRISM or VG OPTIMA mass spectrometer by analyzing a split of the CO_2 gas generated prior to graphite production. Some carbonate samples are reacted and measured directly with the VG PRISM ISOCARB. These $\delta^{13}C$ values and source used to calculate the Fm of a sample are specified in the report of Final Results.

AMS analyses made on the 500 kilovolt AMS system are corrected using measured $^{12}C/.^{13}C$ ratios. Measured $^{12}C/.^{13}C$ ratios are not reported.

Reporting of ages and/or activities follows the convention outlined by Stuiver and Polach (1977) and Stuiver (1980). Radiocarbon ages are calculated using 5568 (yrs) as the half-life of radiocarbon and are reported without reservoir corrections or calibration to calendar years. A $\Delta^{14}C$ activity normalized to 1950 is also reported according to these conventions. The activity, or $\Delta^{14}C$, of the sample is further corrected to account for the decay between collection (or death) and the time of measurement if a collection date is specified on the submittal form, otherwise $\Delta^{14}C$ is reported assuming that collection and measurement date are the same.

Atoms of ^{14}C contained in a sample are directly counted using the AMS method of radiocarbon analysis, therefore, internal statistical errors are calculated using the number of counts measured from each target in combination with the errors of the standard. An external error is calculated from the reproducibility of individual analyses for a given target. The error reported is the larger of the internal or external errors.

When reporting AMS results of samples run at the NOSAMS facility, accession numbers (e.g. OS-####'s) are required to be listed together with the results. To avoid confusion, we suggest tabulating OS-numbers and associated radiocarbon ages as they appear on the attached Final Report in addition to any subsequent corrections that may need to be made to the ages. We ask that published results acknowledge support from NSF by including the NSF Cooperative Agreement number, OCE-0753487. The NOSAMS facility would appreciate receiving reprints or preprints of papers referencing AMS analyses made at the NOSAMS facility.

Any sample material not consumed during sample preparation or AMS radiocarbon analysis is archived for two years at the NOSAMS Facility unless other arrangements are made by the submitter.

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NOSAMS

National Ocean Sciences Accelerator Mass Spectrometry Facility

Radiocarbon Dating Results

NOSAMS No.	Kind	Type	Submitter Identification	Age 14C BP	Age Error	d13C	F Modern	Fm Error	D14C
OS-67051	Organic	Charcoal	Arroyo Hondo Creek, CA FRE-AHC, 430-450	1700	25	-11.27	0.80914	0.00270	0.0
OS-70215	Organic	Plant/Wood	Fresno County, California FRE-LGC, 1300-1300	4120	40	-27.81	0.59872	0.00310	0.0
OS-70216	Organic	Sediment Organic carbon	Fresno County, California FRE-61,190-228	3480	35	-22.88	0.64866	0.00290	0.0
OS-70217	Organic	Sediment Organic carbon	Kern County, California KER-SR33-SCG, 70-80	14250	75	-18.90	0.16926	0.00160	0.0
OS-70220	Organic	Sediment Organic carbon	Fresno County, California FRE-AHC, 230-250	26100	160	-21.53	0.03870	0.00080	0.0
OS-70221	Organic	Other	Fresno County, California FRE-LGC, 1050-1050	4060	45	-26.53	0.60328	0.00350	0.0
OS-70222	Organic	Sediment Organic carbon	Kern County, California KER-SR33-SCG, 120-140	16600	70	-17.39	0.12689	0.00110	0.0
OS-70223	Organic	Plant/Wood	King County, California KIN-80, 130-130	>Mod.		-29.27	1.32457	0.00450	0.0
OS-70224	Inorganic	Mollusc	King County, California KIN-80, 240-250	8070	40	-3.17	0.36594	0.00190	0.0
OS-70225	Organic	Sediment Organic carbon	Madera County, California MAD-CRT1, 120-140	1260	25	-24.81	0.85428	0.00290	0.0
OS-70226	Organic	Sediment Organic carbon	Madera County, California MAD-CRT1, 95-110	>Mod.		-28.64	1.22822	0.00440	0.0
OS-70227	Organic	Sediment Organic carbon	Madera County, California MAD-SJRF, 75-90	2050	35	-24.96	0.77457	0.00340	0.0
OS-70228	Organic	Sediment Organic carbon	Madera County, California MAD-SJRF, 220-240	4570	30	-25.59	0.56581	0.00210	0.0
OS-70229	Organic	Sediment Organic carbon	Merced County, California MER-CFDB,150-170	13100	75	-21.97	0.19566	0.00180	0.0
OS-70230	Organic	Sediment Organic carbon	Merced County, California MER-CFDB, 260-280	21900	110	-23.12	0.06553	0.00090	0.0
OS-70242	Organic	Sediment Organic carbon	Fresno County, California FRE-FRT2, 400-420	7020	130	-25.60	0.41702	0.00660	0.0
OS-70244	Organic	Sediment Organic carbon	Fresno County, California FRE-FRT2, 130-150	3730	85	-24.64	0.62849	0.00650	0.0
OS-70249	Organic	Sediment Organic carbon	Fresno County, California FRE-PC, 1040-1050	6670	75	-23.11	0.43589	0.00420	0.0
OS-70250	Organic	Sediment Organic carbon	Fresno County, California FRE-PC,120-140	4150	65	-21.99	0.59672	0.00480	0.0
OS-70251	Organic	Sediment Organic carbon	Fresno County, California FRE-AHC #1, 170-190	17650	110	-19.06	0.11123	0.00160	0.0
OS-70857	Organic	Bone	Fresno County, California FRE-AHC, 165-180	>Mod.		-21.86	1.27053	0.00400	0.0
OS-71154	Organic	Sediment Organic carbon	Fresno County, California FRE-FR, 315-330	4840	20	-25.67	0.54770	0.00150	0.0
OS-71155	Organic	Sediment Organic carbon	Fresno County, California FRE-FR, 340-360	6060	25	-25.68	0.47026	0.00140	0.0
OS-71156	Organic	Plant/Wood	Fresno County, California FRE-LGC, 1230-1250	3930	25	-27.68	0.61304	0.00180	0.0
OS-71157	Organic	Plant/Wood	Fresno County, California FRE-LGC, 530	3880	20	-18.92	0.61718	0.00140	0.0
OS-71158	Organic	Sediment Organic carbon	Fresno County, California FRE-LPC, 140-160	5330	25	-21.69	0.51498	0.00160	0.0
OS-71160	Organic	Sediment Organic carbon	Fresno County, California FRE-PC, 665	4330	20	-16.69	0.58299	0.00140	0.0
OS-71197	Organic	Sediment Organic carbon	Fresno County, California FRE-LPC, 490-510	7390	30	-23.26	0.39850	0.00150	-604.3
OS-71198	Organic	Sediment Organic carbon	Inyo County, California INY-HWY178-300	200	15	-21.57	0.97564	0.00200	-31.2
OS-71199	Organic	Charcoal	Inyo County, California INY-OLCB, 50	405	20	-11.95	0.95075	0.00210	-55.9
OS-71200	Organic	Sediment Organic carbon	Madera County, California MAD-CWC, 60-80	1210	20	-25.66	0.86003	0.00190	-146.0
OS-71201	Organic	Sediment Organic carbon	Madera County, California MAD-SJRF, 110-130	3160	20	-25.17	0.67464	0.00150	-330.1
OS-71213	Organic	Sediment Organic carbon	FRE-LPC, 420-440	8390	25	-23.27	0.35205	0.00120	-650.4
OS-71315	Organic	Sediment Organic carbon	Madera County, California MAD-CWC, 150-170	1930	15	-24.42	0.78635	0.00170	-219.2
OS-71316	Organic	Sediment Organic carbon	Madera County, California MAD-CWC, 80-100	3390	25	-24.99	0.65592	0.00200	-348.7
OS-71317	Organic	Sediment Organic carbon	San Luis Obispo County, CA SLO-CR, 250-260	175	15	-10.64	0.97862	0.00210	-28.3
OS-71414	Organic	Sediment Organic carbon	Fresno County, California FRE-AHC, 230-250	14450	60	-19.80	0.16497	0.00130	-836.2
OS-71416	Organic	Sediment Organic carbon	Madera County, California MAD-CWC, 210-230	3620	20	-25.88	0.63723	0.00150	-367.3
OS-72582	Organic	Charcoal	FRE, San Joaquin River FRE-SQR, 170-190	130	30	-25.66	0.98388	0.00370	-23.0
OS-72583	Organic	Sediment Organic carbon	INY, Owens Lake, south INY-OLS, 180-190	9310	50	-23.50	0.31374	0.00210	-688.5
OS-72584	Organic	Sediment Organic carbon	INY, Owens Lake, south INY-OLS, 220-240	9230	55	-23.67	0.31703	0.00220	-685.2
OS-72698	Organic	Sediment Organic carbon	INY, Owens, Horton Creek INY-OHC, 105-115	4490	35	-24.95	0.57172	0.00240	-432.3
OS-72699	Organic	Sediment Organic carbon	KIN, Tulare, 10th St Canal KIN-T10SC, 100-130	7530	40	-23.28	0.39147	0.00200	-611.3
OS-72700	Organic	Sediment Organic carbon	KIN, Tulare, 10th St Canal KIN-T10SC, 160-190	8970	40	-20.72	0.32735	0.00170	-674.9
OS-72701	Organic	Sediment Organic carbon	KIN, Tulare, Omaha Canal KIN-TOC, 135-145	11800	85	-24.50	0.23053	0.00240	-771.1
OS-72702	Organic	Sediment Organic carbon	KIN, Tulare, Omaha Canal KIN-TOC, 165-175	11550	85	-23.65	0.23776	0.00250	-763.9
OS-72752	Organic	Bone	INY, Owens Lake, south INY-OLS, 370-400	7440	75	-8.49	0.39626	0.00360	-606.5
OS-72794	Organic	Sediment Organic carbon	KER, Kern River Terrace KER-KRT, 160-170	2270	35	-24.02	0.75404	0.00350	-251.2
OS-72823	Organic	Sediment Organic carbon	MAD, Berenda Creek MAD-BC, 80-100	3010	60	-25.17	0.68701	0.00530	-317.8
OS-72826	Organic	Sediment Organic carbon	INY, Owens River Bluff INY-ORB, 150-160	12650	110	-26.18	0.20639	0.00290	-795.0
OS-72830	Organic	Sediment Organic carbon	FRE, Tumey Gulch FRE-TG, 80-100	8790	50	-25.07	0.33478	0.00210	-667.6
OS-72831	Organic	Sediment Organic carbon	FRE, Tumey Gulch FRE-TG, 60-70	22400	200	-25.51	0.06149	0.00150	-938.9
OS-72832	Organic	Sediment Organic carbon	FRE, Tumey Gulch FRE-TG, 610-620	11150	65	-24.57	0.24942	0.00210	-752.3
OS-72855	Organic	Sediment Organic carbon	INY, Owens Lake, south INY-OLS, 120-130	5950	40	-18.22	0.47697	0.00230	-526.4
OS-73065	Organic	Sediment Organic carbon	TUL, Tule River TUL-TR, 330-350	7010	50	-22.47	0.41766	0.00260	-585.3
OS-73445	Inorganic	Mollusc	KIN-TOC, 50-60	200	25	-7.64	0.97545	0.00330	0.0
OS-73446	Inorganic	Mollusc	KIN-32, Blakely Canal	2250	30	-10.79	0.75550	0.00280	0.0

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www.radiocarbon.com

Darden Hood
President

Ronald Hatfield
Christopher Patrick
Deputy Directors

February 19, 2009

Dr. William Hildebrandt/Liz Honeysett
Far Western Anthropological Research Group, Incorporated
2727 Del Rio Place
Suite A
Davis, CA 95618

RE: Radiocarbon Dating Results For Samples MAD-BC-130-150, MAD-CC-310-330, FRE-RAC-30-40, FRE-NT-80-100, TUL-TR-280-290, KIN-TOC-70-80, KER-GP-50-70

Dear Dr. Hildebrandt and Ms. Honeysett:

Enclosed are the radiocarbon dating results for seven samples recently sent to us. They each provided plenty of carbon for accurate measurements and all the analyses proceeded normally. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable.

As always, no students or intern researchers who would necessarily be distracted with other obligations and priorities were used in the analyses. We analyzed them with the combined attention of our entire professional staff.

If you have specific questions about the analyses, please contact us. We are always available to answer your questions.

The cost of analysis was previously invoiced. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

Digital signature on file

BETA ANALYTIC INC.
DR. M.A. TAMERS and MR. D.G. HOOD
4985 S.W. 74 COURT
MIAMI, FLORIDA, USA 33155
PH: 305-667-5167 FAX:305-663-0964
beta@radiocarbon.com

REPORT OF RADIOCARBON DATING ANALYSES

Dr. William Hildebrandt/Liz Honeysett

Report Date: 2/19/2009

Far Western Anthropological Research Group, Incorporated

Material Received: 2/6/2009

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 255479	4580 +/- 40 BP	-25.4 o/oo	4570 +/- 40 BP
SAMPLE : MAD-BC-130-150			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal BC 3490 to 3460 (Cal BP 5440 to 5420) AND Cal BC 3370 to 3320 (Cal BP 5320 to 5270) Cal BC 3230 to 3110 (Cal BP 5180 to 5060)			
Beta - 255480	15870 +/- 70 BP	-23.3 o/oo	15900 +/- 70 BP
SAMPLE : MAD-CC-310-330			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal BC 17360 to 16980 (Cal BP 19310 to 18920)			
Beta - 255481	4210 +/- 40 BP	-23.5 o/oo	4230 +/- 40 BP
SAMPLE : FRE-RAC-30-40			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal BC 2910 to 2850 (Cal BP 4860 to 4800) AND Cal BC 2810 to 2750 (Cal BP 4760 to 4700) Cal BC 2720 to 2700 (Cal BP 4670 to 4650)			
Beta - 255482	1060 +/- 40 BP	-24.8 o/oo	1060 +/- 40 BP
SAMPLE : FRE-NT-80-100			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal AD 890 to 1030 (Cal BP 1060 to 920)			
Beta - 255483	7540 +/- 40 BP	-23.8 o/oo	7560 +/- 40 BP
SAMPLE : TUL-TR-280-290			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal BC 6470 to 6380 (Cal BP 8420 to 8330)			

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. William Hildebrandt/Liz Honeysett

Report Date: 2/19/2009

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 255484	11920 +/- 60 BP	-24.3 o/oo	11930 +/- 60 BP
SAMPLE : KIN-TOC-70-80			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal BC 12010 to 11710 (Cal BP 13960 to 13660)			
Beta - 255485	1800 +/- 40 BP	-22.5 o/oo	1840 +/- 40 BP
SAMPLE : KER-GP-50-70			
ANALYSIS : AMS-ADVANCE delivery			
MATERIAL/PRETREATMENT : (organic sediment): acid washes			
2 SIGMA CALIBRATION : Cal AD 80 to 250 (Cal BP 1870 to 1700)			

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.4:lab. mult=1)

Laboratory number: **Beta-255479**

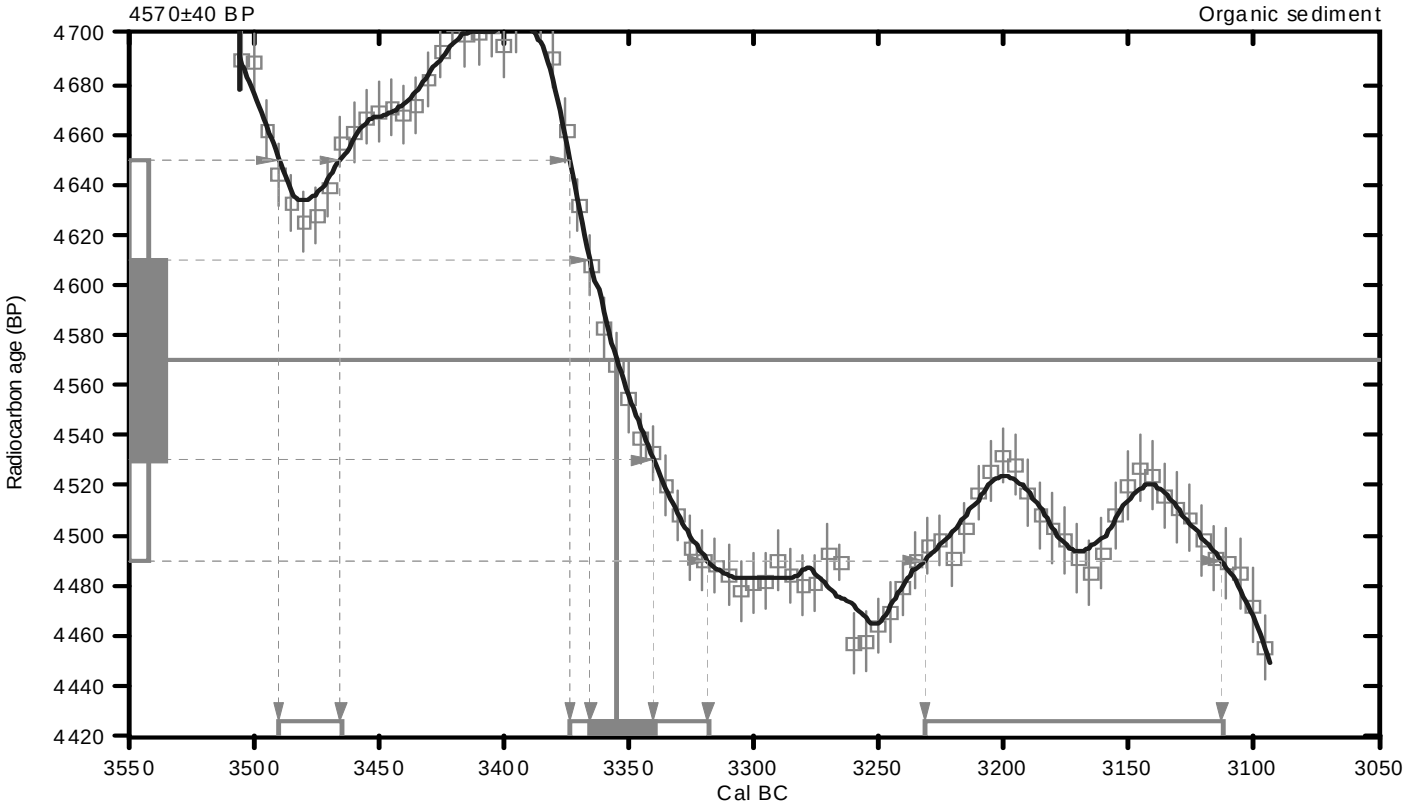
Conventional radiocarbon age: **4570±40 BP**

2 Sigma calibrated results: (95% probability) **Cal BC 3490 to 3460 (Cal BP 5440 to 5420) and Cal BC 3370 to 3320 (Cal BP 5320 to 5270) and Cal BC 3230 to 3110 (Cal BP 5180 to 5060)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 3360 (Cal BP 5300)

1 Sigma calibrated result: (68% probability) Cal BC 3360 to 3340 (Cal BP 5320 to 5290)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.3:lab. mult=1)

Laboratory number: **Beta-255480**

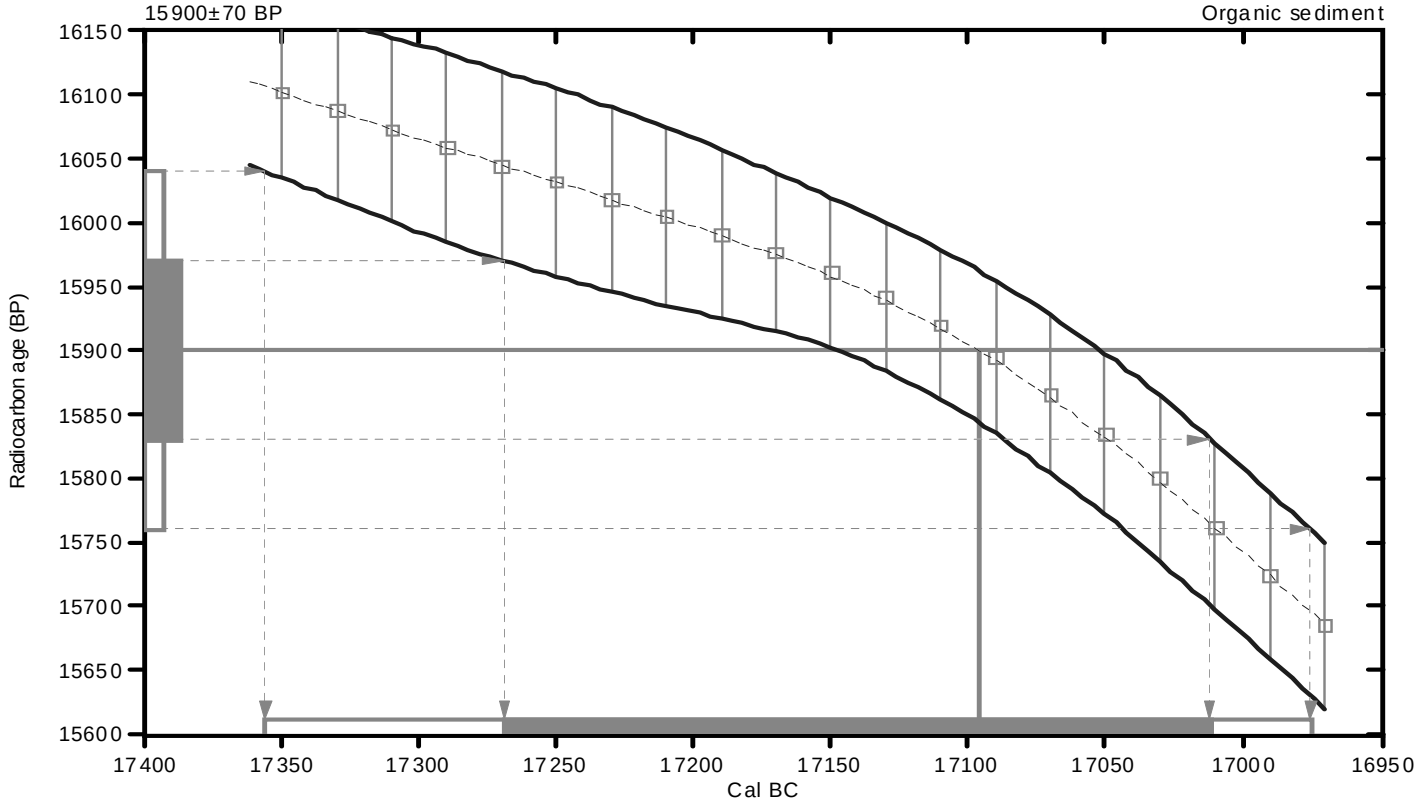
Conventional radiocarbon age: **15900±70 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 17360 to 16980 (Cal BP 19310 to 18920)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 17100 (Cal BP 19050)

1 Sigma calibrated result: (68% probability) Cal BC 17270 to 17010 (Cal BP 19220 to 18960)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.5:lab. mult=1)

Laboratory number: **Beta-255481**

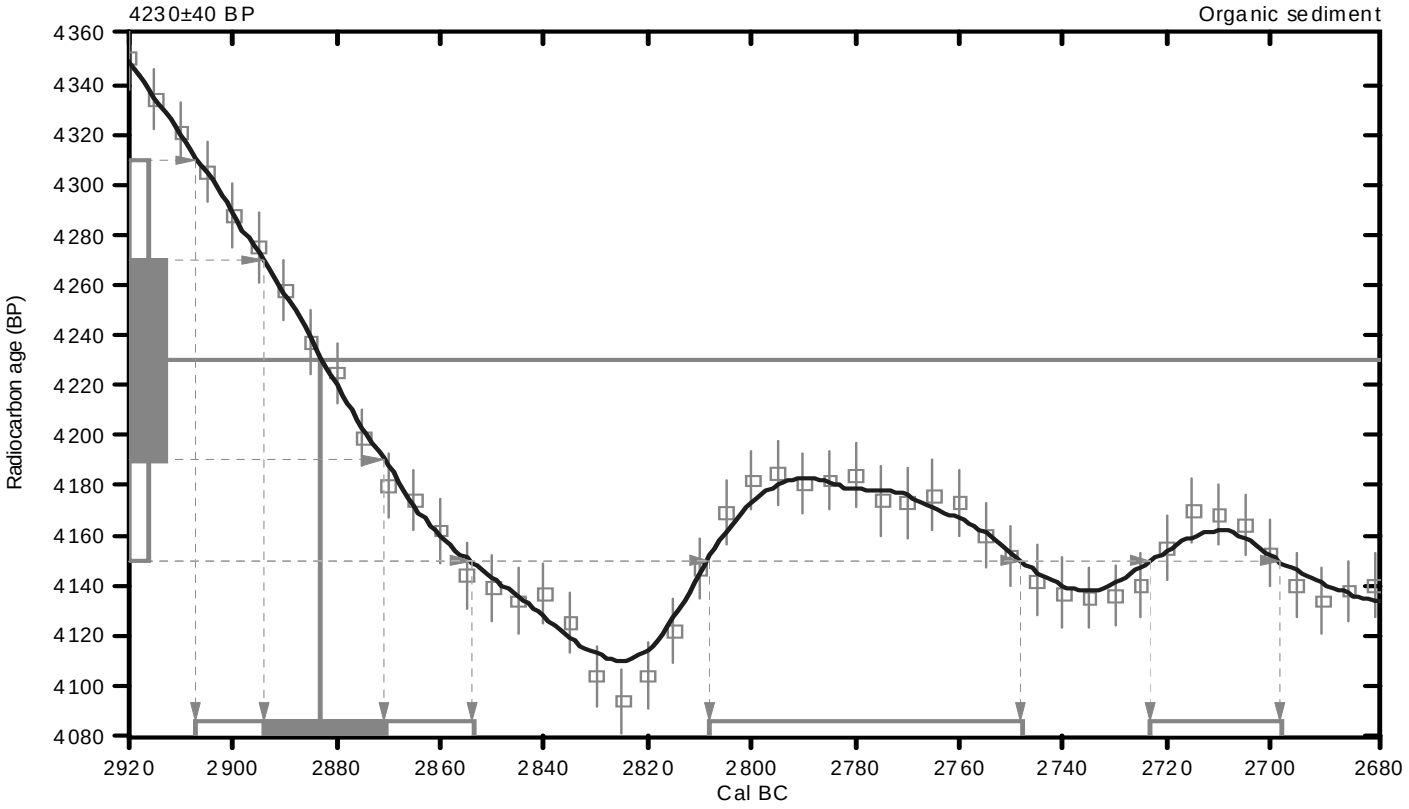
Conventional radiocarbon age: **4230±40 BP**

2 Sigma calibrated results: **Cal BC 2910 to 2850 (Cal BP 4860 to 4800) and**
(95% probability) **Cal BC 2810 to 2750 (Cal BP 4760 to 4700) and**
Cal BC 2720 to 2700 (Cal BP 4670 to 4650)

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 2880 (Cal BP 4830)

1 Sigma calibrated result: (68% probability) Cal BC 2890 to 2870 (Cal BP 4840 to 4820)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-24.8:lab. mult=1)

Laboratory number: **Beta-255482**

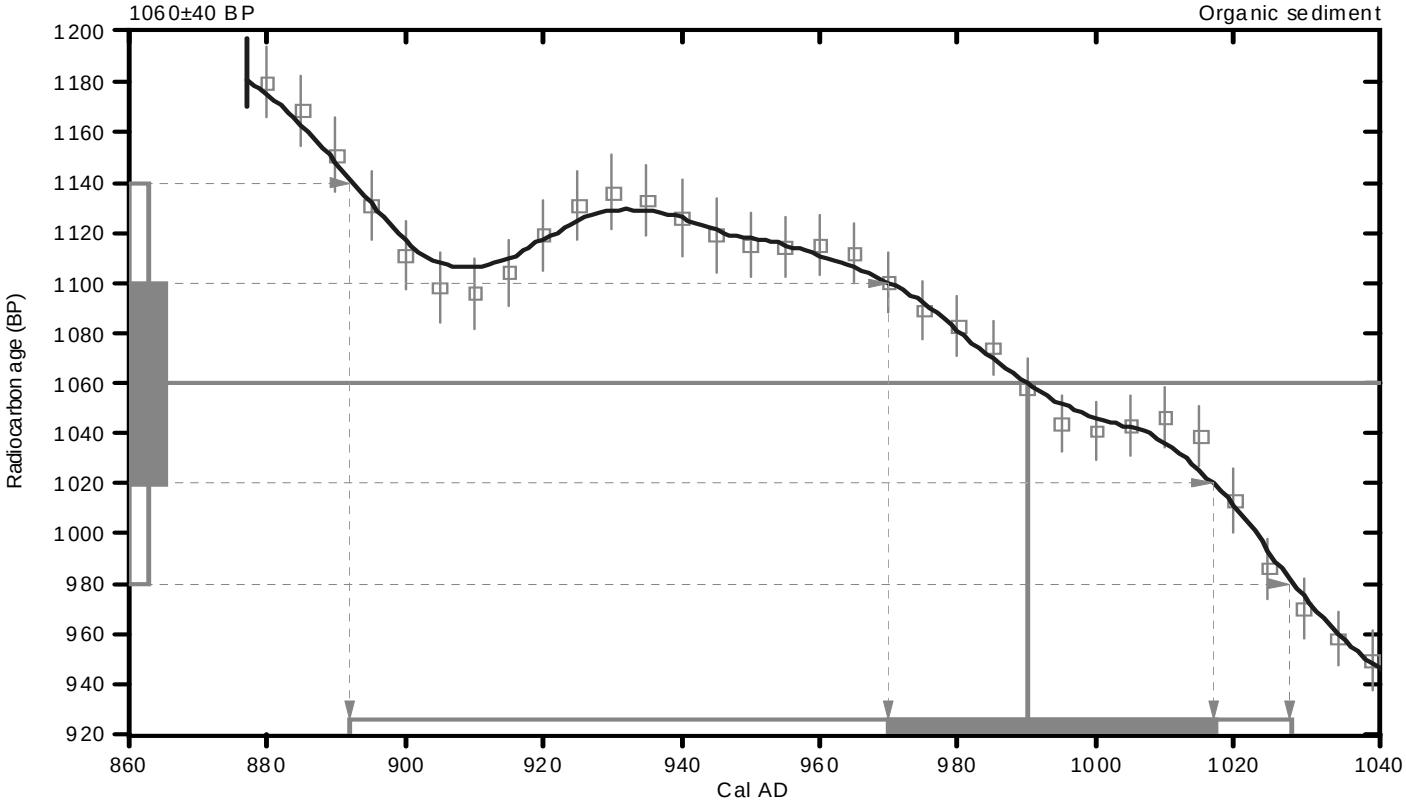
Conventional radiocarbon age: **1060±40 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 890 to 1030 (Cal BP 1060 to 920)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 990 (Cal BP 960)

1 Sigma calibrated result: (68% probability) Cal AD 970 to 1020 (Cal BP 980 to 930)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.8:lab. mult=1)

Laboratory number: **Beta-255483**

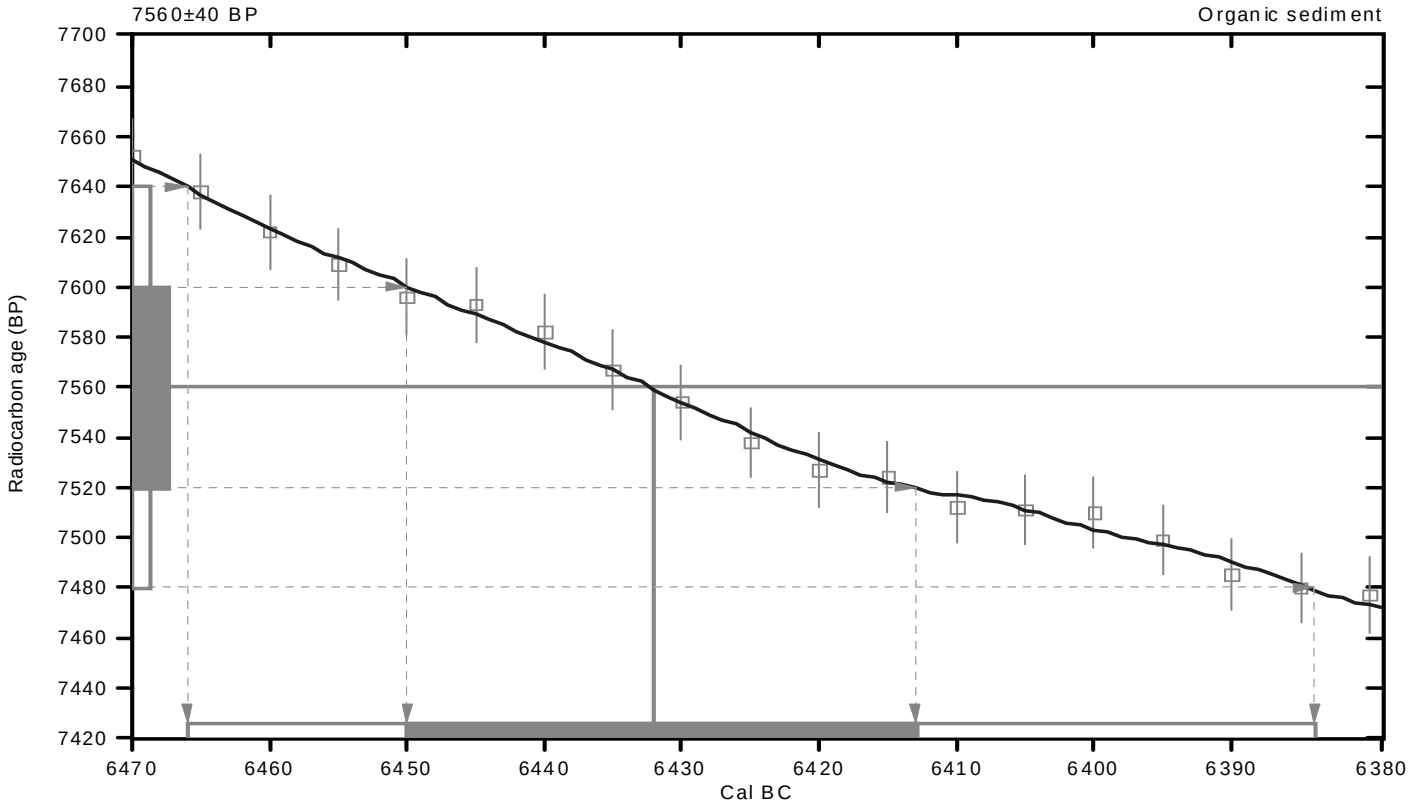
Conventional radiocarbon age: **7560±40 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 6470 to 6380 (Cal BP 8420 to 8330)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 6430 (Cal BP 8380)

1 Sigma calibrated result: (68% probability) Cal BC 6450 to 6410 (Cal BP 8400 to 8360)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-24.3:lab. mult=1)

Laboratory number: **Beta-255484**

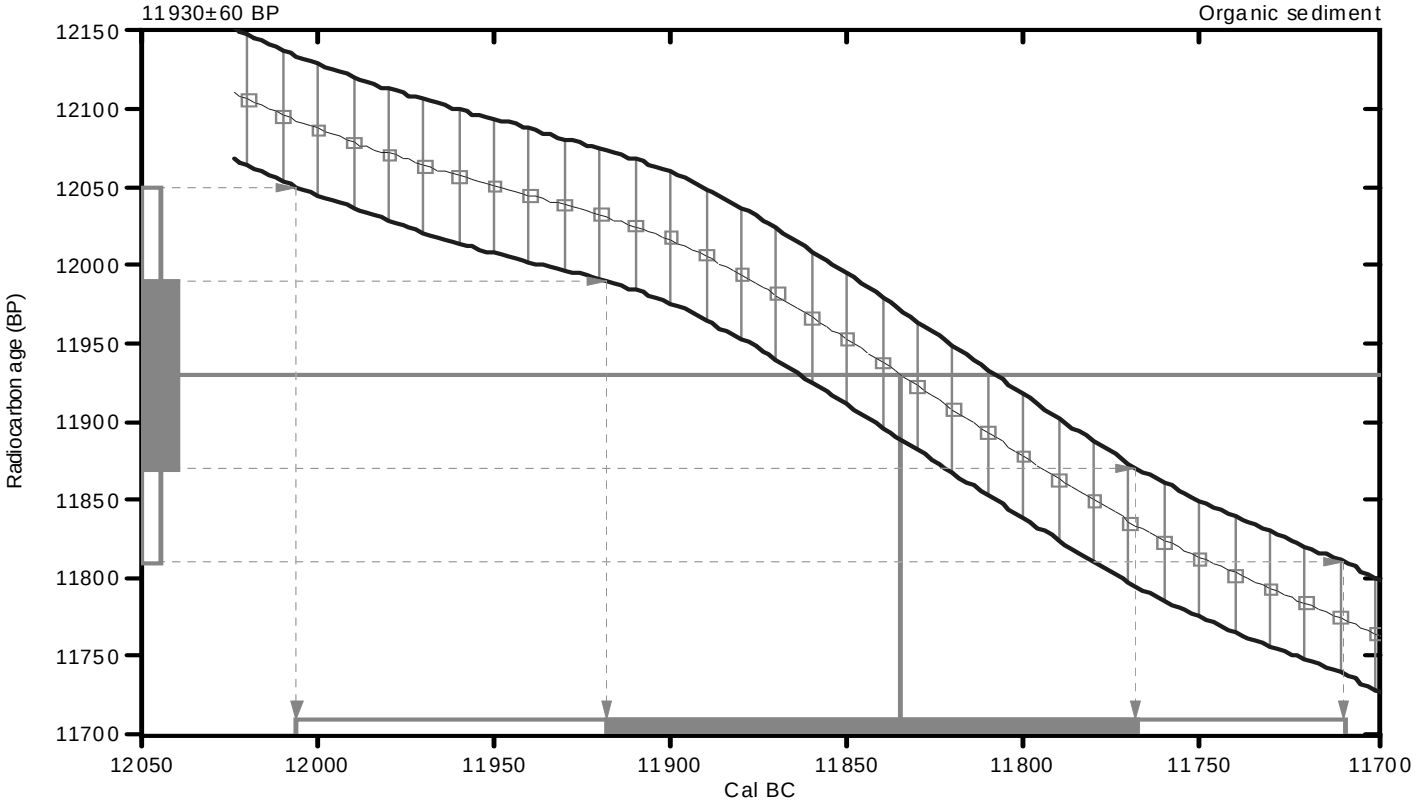
Conventional radiocarbon age: **11930±60 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 12010 to 11710 (Cal BP 13960 to 13660)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 11840 (Cal BP 13780)

1 Sigma calibrated result: (68% probability) Cal BC 11920 to 11770 (Cal BP 13870 to 13720)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-22.5:lab. mult=1)

Laboratory number: **Beta-255485**

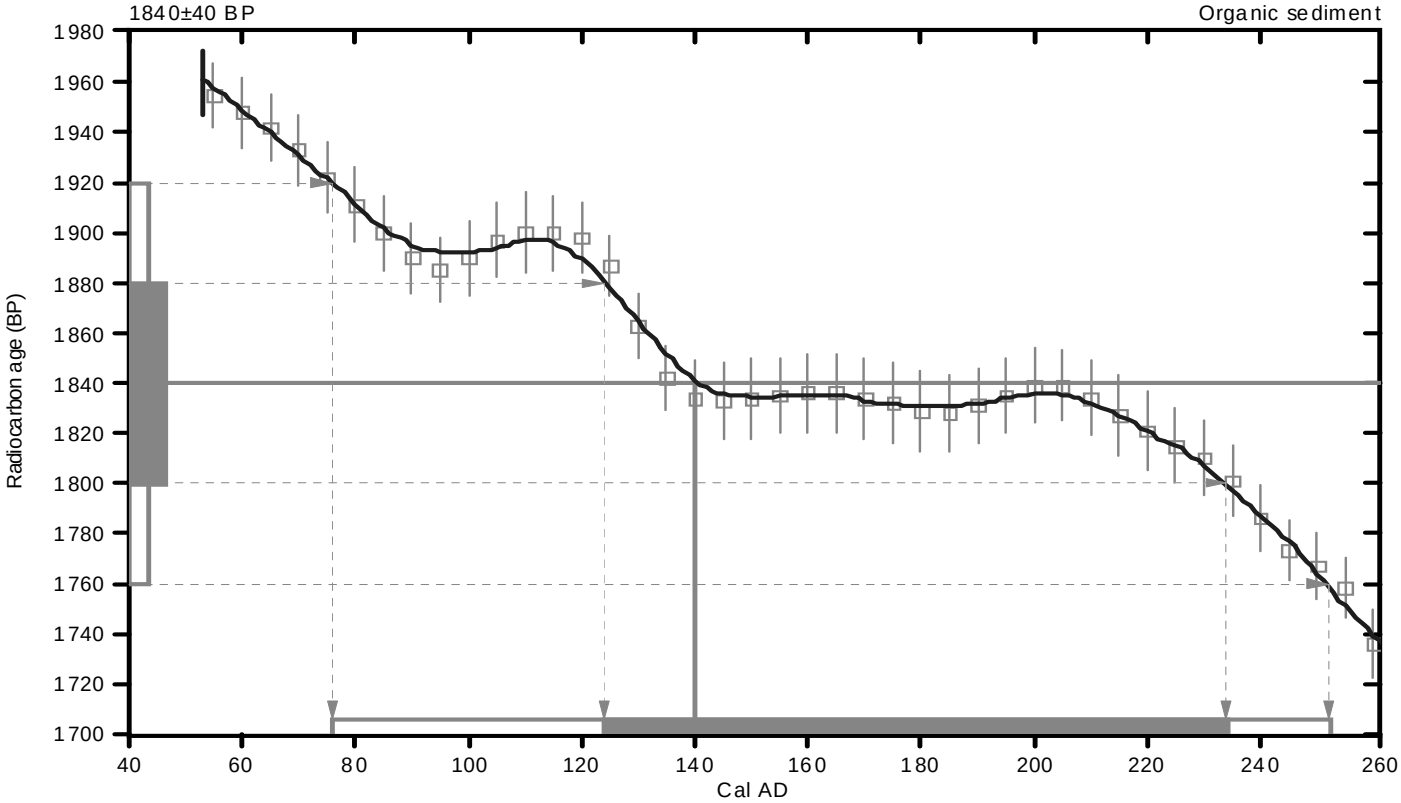
Conventional radiocarbon age: **1840±40 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 80 to 250 (Cal BP 1870 to 1700)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 140 (Cal BP 1810)

1 Sigma calibrated result: (68% probability) Cal AD 120 to 230 (Cal BP 1830 to 1720)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

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Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
ALP-01	1	ALP, Gabbott Meadow	Buried soil	Natural	Highland Creek cutbank, Soil #1	Charcoal	133	150	5940	110	6490	6777	7026	Beta-025153	Peak and Neuenschwander 1991	ROCK OUTCROP (depositional)
ALP-01	1	ALP, Gabbott Meadow Lake	Lacustrine	Natural	Gabbott Meadow Lake Core	Organic Sediment	98	106	2270	80	2044	2255	2488	Beta-016101	Mackey and Sullivan 1991	(Glacial lake)
ALP-01	1	ALP, Gabbott Meadow Lake	Lacustrine	Natural	Gabbott Meadow Lake Core	Organic Sediment	196	204	7570	100	8179	8375	8556	Beta-016102	Mackey and Sullivan 1991	(Glacial lake)
ALP-01	1	ALP, Gabbott Meadow Lake	Lacustrine	Natural	Gabbott Meadow Lake Core	Organic Sediment	378	380	10000	400	10517	11610	12787	Beta-013434	Mackey and Sullivan 1991	(Glacial lake)
ALP-01	1	ALP, Gabbott Meadow Lake	Lacustrine	Natural	Gabbott Meadow Lake Core	Organic Sediment	296	304	10500	140	12026	12444	12816	Beta-016103	Mackey and Sullivan 1991	(Glacial lake)
ALP-01	1	ALP-0109, Gabbott Meadow	Buried alluvium	Cultural	3N 12/13E	Charcoal	100	110	2830	85	2765	2958	3165	Beta-018154	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0109, Gabbott Meadow	Surface deposit	Cultural	4N 11E	Charcoal	80	80	2350	85	2294	2414	2620	Beta-018155	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0149, Gabbott Meadow	Buried alluvium	Cultural	4/5N 7E	Charcoal	110	120	1315	95	1051	1223	1394	Beta-017808	Peak and Neuenschwander 1991	ROCK OUTCROP-Toem (fan)
ALP-01	1	ALP-0149, Gabbott Meadow	Surface deposit	Cultural	4S 7E	Charcoal	100	100	670	80	528	629	733	Beta-017809	Peak and Neuenschwander 1991	ROCK OUTCROP-Toem (fan)
ALP-01	1	ALP-0152, Gabbott Meadow	Surface deposit	Cultural	12N 65E	Charcoal	50	60	370	75	289	410	528	Beta-018156	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0152, Gabbott Meadow	Surface deposit	Cultural	14/15N 64E	Charcoal	60	70	3180	90	3207	3406	3632	Beta-018158	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0152, Gabbott Meadow	Surface deposit	Cultural	18/19N 64E	Charcoal	90	100	4060	90	4383	4574	4833	Beta-018157	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0192, Gabbott Meadow	Buried soil	Cultural	18S 9/10/11E	Charcoal	240	263	9260	140	10173	10460	10800	Beta-018160	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0192, Gabbott Meadow	Buried soil	Cultural	19S 10/11E, Hearth	Charcoal	210	220	9630	125	10650	10955	11245	Beta-017473	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0192, Gabbott Meadow	Buried soil	Cultural	19S 10/11E, Hearth feature	Charcoal	218	218	9750	180	10583	11137	11760	Beta-018159	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-01	1	ALP-0252, Gabbott Meadow	Buried soil	Cultural	Unit 01	Charcoal	110	120	3855	90	4065	4269	4449	Beta-018161	Peak and Neuenschwander 1991	ROCK OUTCROP-Gerle (fan)
ALP-02	2	ALP-0007	Surface deposit	Cultural	B-6	Charcoal	0	30	1090	100	793	1017	1186	UCLA-1959	RCJJ 1983	Joecut
FRE-01	1	FRE, Los Gatos Creek	Surface deposit	Natural	3E1	Charcoal	80	90	100	70	3	128	153	V-1761	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Surface deposit	Natural	3E2	Charcoal	80	90	170	80	-5	172	319	V-1760	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	103A	Charcoal	160	170	330	200	-4	346	565	C-1807	Atwater et al. 1990	Posochanet
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	2A	Charcoal	210	220	750	45	649	691	744	USGS-2023	Atwater et al. 1990	Posochanet
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	2B	Charcoal	230	240	510	50	487	536	565	USGS-2024	Atwater et al. 1990	Posochanet
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	2B1	Charcoal	230	240	1210	190	736	1123	1420	V-1763	Atwater et al. 1990	Posochanet
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	2B2	Charcoal	230	240	510	90	426	537	666	V-1768	Atwater et al. 1990	Posochanet
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	2C	Charcoal	190	200	50	390	-5	277	724	C-1806	Atwater et al. 1990	Posochanet
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	31, sample no.	Charcoal	670	680	900	80	682	822	937	AA-02161	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3A	Charcoal	450	450	665	40	621	625	679	USGS-2034	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3A1	Charcoal	450	450	670	80	528	629	733	V-1762	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3A3	Charcoal	450	450	860	210	507	817	1185	V-1766	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3A4	Charcoal	450	450	700	80	537	654	772	V-1767	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3B	Charcoal	410	450	570	50	519	595	653	USGS-2025	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3D3	Charcoal	230	240	685	95	518	644	787	V-1771	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	3D4	Charcoal	230	240	520	55	491	545	570	V-1770	Atwater et al. 1990	Westhaven
FRE-01	1	FRE, Los Gatos Creek	Buried alluvium	Natural	4a	Charcoal	200	210	310	45	291	387	484	USGS-2026	Atwater et al. 1990	Excelsior
FRE-02	2	FRE, Jacalitos Creek	Buried alluvium	Natural	86-10C7	Charcoal	355	365	2410	120	2297	2490	2751	AA-02166	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Surface deposit	Natural	26E1	Charcoal	70	80	25	100	-5	123	153	V-1813	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Surface deposit	Natural	26E2	Charcoal	70	80	450	220	-4	442	743	V-1814	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	101C	Charcoal	740	750	4830	200	5032	5547	5991	C-1313	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	101F	Charcoal	500	500	4630	300	4517	5284	5950	C-1772	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	101G	Charcoal	360	370	1090	320	503	1031	1635	C-1426	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	101X	Charcoal	240	250	480	310	-5	477	937	C-1423	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	101Z	Charcoal	870	880	5290	230	5587	6062	6557	C-1425	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	102B	Charcoal	320	330	320	70	274	385	512	V-1764	Atwater et al. 1990	Excelsior
FRE-02	2	FRE, Los Gatos Creek	Surface deposit	Natural	102C1	Charcoal	60	60	270	185	-5	298	552	C-1446	Atwater et al. 1990	Excelsior
FRE-02	2	FRE, Los Gatos Creek	Surface deposit	Natural	102C2	Charcoal	60	70	610	170	304	598	910	C-1447	Atwater et al. 1990	Excelsior
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	24A2	Charcoal	780	790	5000	320	4958	5737	6406	C-1427	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	24C	Charcoal	710	720	5210	270	5445	5977	6553	C-1439	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	25B1	Charcoal	460	470	940	230	530	886	1293	C-1831	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	25E	Charcoal	970	980	1970	100	1694	1928	2155	AA-02164	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	26C1	Charcoal	310	320	740	210	308	712	1083	C-1774	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	26C2	Charcoal	310	320	640	190	286	622	961	C-1792	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	26C3	Charcoal	310	320	510	430	-5	540	1180	C-1793	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Surface deposit	Natural	26D1	Charcoal	170	180	260	200	-5	293	555	C-1777	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	27A	Charcoal	500	510	2280	205	1823	2307	2771	C-1775	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	7G	Charcoal	950	960	2900	90	2844	3053	3270	AA-02162	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	7Y1	Charcoal	630	640	2790	340	2101	2930	3723	C-1778	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	7Y2	Charcoal	630	640	3530	360	2968	3859	4823	C-1790	Atwater et al. 1990	Cerini
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-12C5	Charcoal	730	740	5780	140	6296	6589	6902	AA-02167	Atwater et al. 1990	Westhaven
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-1C4	Charcoal	680	690	4710	90	5280	5442	5614	Beta-020766	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-6AC11	Charcoal	740	750	3620	120	3617	3942	4291	Beta-020768	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-6AC22	Charcoal	1080	1090	3630	80	3707	3951	4153	Beta-020769	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-6BC8	Charcoal	870	880	3910	80	4138	4336	4532	Beta-020767	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-CC2	Charcoal	910	920	4210	80	4521	4725	4892	Beta-018395	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-CC21	Charcoal	1290	1300	5570	90	6188	6368	6564	AA-02168	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	86-CC2A	Charcoal	910	920	4020	70	4290	4507	4709	AA-02165	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	8C	Charcoal	450	460	220	400	-5	350	803	C-1436	Atwater et al. 1990	Westhaven
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	9A2	Charcoal	300	310	2900	360	2285	3062	3926	C-1776	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	9Q	Charcoal	650	660	2050	90	1822	2025	2185	USGS-1486	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	9X1	Charcoal	650	660	2700	260	2296	2819	3415	C-1783	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	9X3	Charcoal	650	660	2570	190	2293	2634	3083	C-1784	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	Below surface of Los Gatos Creek alluvial fan, 9X	Charcoal (rounded)	450	450	2550	130	2336	2603	2892	Beta-004239	Atwater et al. 1990	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	Los Gatos Creek, base of Excelsior terrace, T2	Wood (pine cone)	530	530	3880	20	4246	4331	4409	OS-71157	Meyer, Rosenthal, and Young (in progress)	Westhaven

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
FRE-02	2	FRE, Los Gatos Creek	Buried soil	Natural	Los Gatos Creek, north bank, intact root in lowest Ab	Root	1230	1250	3930	25	4287	4367	4437	OS-71156	Meyer, Rosenthal, and Young (in progress)	Excelsior
FRE-02	2	FRE, Los Gatos Creek	Buried alluvium	Natural	Los Gatos Creek, north-side south bank, "black mat"	Organic Sediment	1050	1050	4060	90	4423	4552	4648	OS-70221	Meyer, Rosenthal, and Young (in progress)	Posochanet
FRE-02	2	FRE, Los Gatos Creek	Buried soil	Natural	Los Gatos Creek, west-side north bank, tree stump at base of terrace	Wood (unknown)	1300	1300	4120	40	4528	4651	4713	OS-70215	Meyer, Rosenthal, and Young (in progress)	Excelsior
FRE-02	2	FRE, Los Gatos Creek, site	Buried soil	Cultural	101E, Buried hearth	Charcoal	700	700	4630	390	4288	5269	6209	C-1424	Atwater et al. 1990	Posochanet
FRE-03	3	FRE, Los Gatos Creek	Buried alluvium	Natural	5a	Charcoal	170	180	370	100	267	403	556	USGS-2027	Atwater et al. 1990	Westhaven
FRE-03	3	FRE, Los Gatos Creek	Buried alluvium	Natural	86-3C7	Charcoal	620	630	6920	170	7457	7768	8047	AA-02163	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	100A	Charcoal	560	570	1860	250	1281	1810	2358	C-1432	Atwater et al. 1990	Excelsior
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	100C	Charcoal	460	470	2190	250	1605	2199	2767	C-1435	Atwater et al. 1990	Excelsior
FRE-04	4	FRE, Los Gatos Creek	Surface deposit	Natural	18A	Charcoal	100	110	270	140	55	299	511	USGS-2030	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	1A	Charcoal	620	730	2760	400	1897	2892	3848	C-1449	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	1C	Charcoal	620	730	2240	120	1933	2238	2515	USGS-2022	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	1F2	Charcoal	190	200	1830	240	1302	1776	2327	C-1788	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	1F3	Charcoal	190	200	1720	240	1174	1657	2162	C-1789	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	21A	Charcoal	470	480	2150	80	1985	2147	2337	USGS-2031	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	21A	Charcoal	470	480	3420	310	2921	3711	4450	C-1431	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	21B	Charcoal	230	240	2170	190	1736	2170	2619	C-1443	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	21C1	Charcoal	120	130	1990	170	1562	1955	2340	C-1903	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	21C2	Charcoal	120	130	2040	300	1387	2026	2738	C-1804	Atwater et al. 1990	Westhaven
FRE-04	4	FRE, Los Gatos Creek	Buried alluvium	Natural	22A	Charcoal	410	420	3270	80	3355	3506	3691	USGS-2032	Atwater et al. 1990	Westhaven
FRE-05	5	FRE, Los Gatos Creek	Buried alluvium	Natural	15C	Charcoal	250	260	780	225	422	750	1178	C-1312	Atwater et al. 1990	Excelsior
FRE-05	5	FRE, Los Gatos Creek	Buried alluvium	Natural	16A	Charcoal	280	290	1580	80	1310	1473	1625	USGS-2029	Atwater et al. 1990	Westhaven
FRE-05	5	FRE, Los Gatos Creek	Buried alluvium	Natural	Below surface of Los Gatos Creek alluvial fan, 10A	Charcoal (angular)	150	150	490	60	433	526	568	Beta-004238	Atwater et al. 1990	Westhaven
FRE-06	6	FRE, Los Gatos Creek (upper)	Surface deposit	Natural	Terrace 4, Bk, LG2-1-2AC	Charcoal (Arctostaphylos)	23	46	150	50	56	150	286	Beta-107187	Klinger and Ostenna 1997	Anela
FRE-06	6	FRE, Los Gatos Creek (upper)	Buried soil	Natural	Terrace 4, CBKb3, LG2-1-4MIX (Arctostaphylos/Rhamnus)	Charcoal (see context)	55	73	270	50	269	340	479	Beta-107188	Klinger and Ostenna 1997	Anela
FRE-07	7	FRE-1333	Surface deposit	Cultural	3	Charcoal	40	50	755	50	649	695	779	WSU-3556	Breschini and Haversat 1987; CRD 1996	Roacha
FRE-07	7	FRE-1333	Surface deposit	Cultural	Unit 2; hearth layer	Charcoal	nr	nr	280	60	268	359	496	WSU-3555	Breschini and Haversat 1987; CRD 1996	Roacha
FRE-07	7	FRE-1333	Surface deposit	Cultural	Unit 3	Charcoal	60	70	1010	70	764	922	1062	WSU-3557	Breschini and Haversat 1987; CRD 1996	Roacha
FRE-07	7	FRE-1333	Surface deposit	Cultural	Unit 3	Charcoal	70	80	1420	100	1167	1335	1538	WSU-3558	Breschini and Haversat 1987; CRD 1996	Roacha
FRE-08	8	FRE-1346, Corral Site	Surface deposit	Cultural	Unit 01, north bank of Los Gatos Creek	Charcoal	30	40	495	80	427	527	657	UCR-2398	D. Foster pc; CRD 1996	Anela
FRE-08	8	FRE-1346, Corral Site	Surface deposit	Cultural	Unit 01, north bank of Los Gatos Creek	Charcoal	40	50	760	60	634	701	795	UCR-2397	D. Foster pc; CRD 1996	Anela
FRE-08	8	FRE-1346, Corral Site	Surface deposit	Cultural	Unit 47/13, north bank of Los Gatos Creek	Charcoal	20	40	400	40	424	461	518	UCR-2452	Taylor 1992 - site record	Anela
FRE-08	8	FRE-1346, Corral Site	Surface deposit	Cultural	Unit 47/13, north bank of Los Gatos Creek	Charcoal	10	20	540	90	430	562	678	UCR-2449	Taylor 1992 - site record	Anela
FRE-08	8	FRE-1346, Corral Site	Surface deposit	Cultural	Unit 47/13, north bank of Los Gatos Creek	Charcoal	30	40	1060	80	794	980	1152	UCR-2399	D. Foster pc; CRD 1996	Anela
FRE-09	9	FRE, Salt Creek	Buried soil	Natural	ACb, SC2-3AC	Charcoal (Arctostaphylos)	85	95	1030	60	795	946	1060	Beta-107182	Klinger and Ostenna 1997	Westhaven
FRE-09	9	FRE, Salt Creek	Surface deposit	Natural	Terrace 3o, Bkz, SC3C-2MIX (Arctostaphylos, Atriplex, and Rhamnus)	Charcoal (see context)	50	75	1760	60	1541	1675	1821	Beta-107186	Klinger and Ostenna 1997	Westhaven
FRE-09	9	FRE, Salt Creek	Surface deposit	Natural	Terrace 3y, BCk, SC2-2-2MIX (Arctostaphylos, Atriplex, and Rhamnus)	Charcoal (see context)	45	60	790	60	652	721	800	Beta-107181	Klinger and Ostenna 1997	Westhaven
FRE-09	9	FRE, Salt Creek	Buried soil	Natural	Terrace 3y, CBkb2, SC2-4AC	Charcoal (Arctostaphylos)	125	140	1270	60	1064	1201	1294	Beta-107183	Klinger and Ostenna 1997	Westhaven
FRE-09	9	FRE, Salt Creek	Surface deposit	Natural	Terrace 4, SC3A-1AC	Charcoal (Arctostaphylos)	78	78	300	60	275	378	502	Beta-107184	Klinger and Ostenna 1997	Westhaven
FRE-09	9	FRE, Salt Creek	Surface deposit	Natural	Terrace 4, SC3B-1AT	Charcoal (Atriplex)	53	54	160	50	59	160	289	Beta-107185	Klinger and Ostenna 1997	Westhaven
FRE-10	10	FRE, Cantua Creek	Buried soil	Natural	T-3o, Bkb, CC5-2AT	Charcoal (Atriplex)	60	75	2650	60	2699	2773	2887	Beta-107177	Klinger and Ostenna 1997	Westhaven
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	T-3o, Roadcut, CC7-1AT, no specific location for sample	Charcoal (Atriplex)	67	67	2590	60	2485	2704	2799	Beta-107180	Klinger and Ostenna 1997	(no location)
FRE-10	10	FRE, Cantua Creek	Buried soil	Natural	Terrace 2, 3Bkb2, CC6-3PI	Charcoal (Pinus)	100	115	3530	60	3684	3808	3974	Beta-107178	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Buried soil	Natural	Terrace 2, 3CBkb, CC6-4RH	Charcoal (Rhamnus)	118	123	3350	60	3445	3587	3722	Beta-107179	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Buried deposit	Natural	Terrace 3y(?), CC2-7AC	Charcoal (Arctostaphylos)	265	270	1130	60	930	1045	1178	Beta-107171	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 3y, CC1-2MIX (Arctostaphylos and Rhamnus)	Charcoal (see context)	70	80	1140	60	932	1057	1180	Beta-107167	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 3y, CC2-2AC	Charcoal (Arctostaphylos)	45	50	530	60	497	554	654	Beta-107168	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 3y, CC2-3AT	Charcoal (Atriplex)	70	75	410	60	417	451	531	Beta-107169	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 3y, CC3-2AC	Charcoal (Arctostaphylos)	60	75	870	60	690	791	914	Beta-107172	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 3y, CC3-3SX	Charcoal (Salix)	92	94	410	60	417	451	531	Beta-107173	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 3y, CC3-4SX	Charcoal (Salix)	111	113	390	60	310	433	517	Beta-107174	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek	Surface deposit	Natural	Terrace 4, CC4-2AC	Charcoal (Arctostaphylos)	73	81	210	60	58	192	325	Beta-107175	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek Site 1?	Buried deposit	Natural	Terrace 3y, CC2-5RH, with charred animal tooth fragments	Charcoal (Rhamnus)	140	145	570	60	514	593	657	Beta-107170	Klinger and Ostenna 1997	Anela
FRE-10	10	FRE, Cantua Creek Site 2?	Surface deposit	Natural	T-3o, BCk, CC5-1-2MIX, two calcined bones (Arctostaphylos and Rhamnus)	Charcoal (see context)	30	45	2070	70	1876	2044	2180	Beta-107176	Klinger and Ostenna 1997	Westhaven
FRE-11	11	FRE, Cantua Creek Fan	Buried deposit	Natural	Wood found in tension crack at California aqueduct station 3485 + 50R, "San Luis Canal"	Wood (unknown)	470	470	5180	600	4435	5908	7276	W-2086	Bull 1972	Cerini
FRE-12	12	FRE, Riverdale Man	Buried deposit	Cultural	Obtained by LaJeunesse	Bone (human)	200	200	290	100	244	339	515	UCR-0474	Taylor 1980; CRD 1996	Chino
FRE-13	13	FRE-0257, Arroyo Hondo	Buried soil	Natural	Arroyo Hondo #1, north bank, 3Bkb	Soil (SOM)	170	190	17650	220	20482	20832	21240	OS-70251	Meyer, Rosenthal, and Young (in progress)	Milham
FRE-13	13	FRE-0257, Arroyo Hondo	Buried soil	Natural	Arroyo Hondo, northeast bank, 4Bkb	Soil (SOM)	230	250	26100	160	30896	31340	31784	OS-70220	Meyer, Rosenthal, and Young (in progress)	Milham
FRE-13	13	FRE-0257, Arroyo Hondo	Buried soil	Natural	Arroyo Hondo, northeast bank, 4Bkb below Millham (1 of 2 dates on same sample?)	Soil (SOM)	230	250	14450	60	16909	17365	17789	OS-71414	Meyer, Rosenthal, and Young (in progress)	Milham
FRE-13	13	FRE-0257, Arroyo Hondo	Buried deposit	Cultural	N-arroyo bank, ~5 m E of bridge, 12 m S of fence	Charcoal	430	450	1700	25	1540	1603	1634	OS-67051	Meyer, Rosenthal, and Young (in progress)	Kimberlina

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
FRE-13	13	FRE-0257, Arroyo Hondo	Buried soil	Cultural	One of two buried hearths in S wall of creek, 1,200 ft SW of power lines, coll. by W. Bull in 1958; two hearths exposed in bank (same?) per Davis and Elsasser site record (1958)	Charcoal	320	320	1040	200	650	970	1319	W-0793	Bull 1964b; RCJ 1960	Cerini
FRE-13	13	FRE-0257, Arroyo Hondo	Buried soil	Natural	South cutbank, 2Ab	Bone (elk)	165	180	0	10	-5	-4	0	OS-70857	Meyer, Rosenthal, and Young (in progress)	Cerini
FRE-14	14	FRE, San Joaquin River	Buried soil	Natural	2Ab in south cutbank below Wunjey soil as mapped (T3? Terrace)	Charcoal	170	190	130	30	57	128	275	OS-72582	Meyer, Rosenthal, and Young (in progress)	Wunjey
FRE-15	15	FRE, Tumey Gulch	Buried soil	Natural	2ABkb in N bank of gulch below Millham soil as mapped	Soil (SOM)	80	100	8790	50	9602	9816	9955	OS-72830	Meyer, Rosenthal, and Young (in progress)	Milham
FRE-15	15	FRE, Tumey Gulch	Buried soil	Natural	3Ab near top of south cutbank below Guijarrel soil as mapped	Soil (SOM)	60	70	22400	200	26412	26926	27440	OS-72831	Meyer, Rosenthal, and Young (in progress)	Guijarral
FRE-15	15	FRE, Tumey Gulch	Buried soil	Natural	5ABtkb (?), base of south cutbank below Guijarrel soil as mapped	Soil (SOM)	610	620	11150	65	12926	13051	13184	OS-72832	Meyer, Rosenthal, and Young (in progress)	Guijarral
FRE-16	16	FRE, Panoche/Silver Creek	Buried soil	Natural	Panoche Creek, buried soil (2Ab) near top of south cutbank	Soil (SOM)	120	140	4150	130	4521	4684	4840	OS-70250	Meyer, Rosenthal, and Young (in progress)	Calflax
FRE-16	16	FRE, Panoche/Silver Creek	Buried soil	Natural	Panoche Creek, burn layer at base of south cutbank	Soil (SOM)	1040	1050	6670	150	7433	7541	7656	OS-70249	Meyer, Rosenthal, and Young (in progress)	Calflax
FRE-16	16	FRE, Panoche/Silver Creek	Buried soil	Natural	Panoche Creek, burn layer near center of south cutbank	Soil (SOM)	665	665	4330	20	4846	4872	4893	OS-71160	Meyer, Rosenthal, and Young (in progress)	Calflax
FRE-16	16	FRE-2365, Panoche Creek	Buried soil	Cultural	North cutbank, Feature 01	Charcoal	190	200	1440	60	1268	1344	1420	Beta-105273	Milliken and Meyer 1997	Mugatu
FRE-16	16	FRE-2365, Panoche Creek	Buried soil	Cultural	Unit 03, Feature 03, pit or floor	Charcoal	48	55	400	50	421	449	521	Beta-105272	Milliken and Meyer 1997	Mugatu
FRE-17	17	FRE, Fresno Slough	Buried soil	Natural	2Ab below Merced clay in cut W of RR-tracks, S of James Bypass, E of Fresno Slough	Soil (SOM)	80	100	1060	40	924	971	1057	Beta-255482	Meyer, Rosenthal, and Young (in progress)	Merced
FRE-17	17	FRE-0048, Tranquility Site	Surface deposit	Cultural	Fragments from Burials 3 and 4	Bone (human)	98	100	2550	60	2453	2615	2765	UCLA-1623	Berger et al. 1971	Rossi
FRE-18	18	FRE-0061, Wahtoke Creek	Surface deposit	Cultural	N120/W30	Charcoal	90	100	2880	60	2858	3018	3172	Beta-054362/CAMS-02983	McGuire 1995; CRD 1996	Tivy
FRE-18	18	FRE-0061, Wahtoke Creek	Surface deposit	Cultural	N120/W30	Bone (human)	130	167	5920	60	6628	6747	6910	Beta-054356	McGuire 1995; CRD 1996	Tivy
FRE-18	18	FRE-0061, Wahtoke Creek	Surface deposit	Cultural	N38/W37	Charcoal	20	50	2360	60	2304	2419	2546	Beta-054363/CAMS-02984	McGuire 1995; CRD 1996	Tivy
FRE-18	18	FRE-0061, Wahtoke Creek	Buried soil	Natural	Wahtoke Creek at FRE-61, E bank, 2Ab	Soil (SOM)	190	228	3480	35	3682	3759	3841	OS-70216	Meyer, Rosenthal, and Young (in progress)	Foster
FRE-19	19	FRE, Mendota Area	Buried alluvium	Natural	Arkosic sand/silt overlain by Coast Range fine sand	Wood (unknown)	1700	1710	43800	775	46623	47999	49375	USGS-1199	Lettis 1982, 1985	Posochanet
FRE-19	19	FRE, Mendota Area	Buried alluvium	Natural	San Luis Ranch Alluvium; max. age for probably buried land surface	Plant (organic fragments)	1690	1700	31300	650	35337	36675	38013	USGS-1200	Lettis 1982, 1985	Posochanet
FRE-20	20	FRE, Little Panoche Creek	Buried soil	Natural	2Ab in south bank below Vernalis series	Soil (SOM)	140	160	5330	25	5999	6104	6193	OS-71158	Meyer, Rosenthal, and Young (in progress)	Vernalis
FRE-20	20	FRE, Little Panoche Creek	Buried soil	Natural	5(?)Ab in south bank at base of Vernalis terrace	Soil (SOM)	490	510	7390	30	8163	8236	8326	OS-71197	Meyer, Rosenthal, and Young (in progress)	Vernalis
FRE-20	20	FRE, Little Panoche Creek	Buried soil	Natural	From 4ABtb paleosol at base of west bank, Upper San Luis Ranch?	Soil (SOM)	420	440	8390	25	9399	9440	9483	OS-71213	Meyer, Rosenthal, and Young (in progress)	Vernalis
FRE-21	21	FRE, Mendota Area	Buried alluvium	Natural	Trunk stream near San Joaquin River fan, San Luis Ranch Alluvium	Wood (unknown)	1500	1500	28200	330	32818	33574	34330	USGS-1197	Lettis 1982, 1985; Atwater et al. 1986	Chino
FRE-21	21	FRE, Mendota Area	Buried alluvium	Natural	Trunk stream near San Joaquin River fan, San Luis Ranch Alluvium	Organic Sediment	1500	1500	29970	250	34836	35376	35916	USGS-1198	Lettis 1982, 1985	Chino
FRE-21	21	FRE, Mendota Area	Buried alluvium	Natural	Trunk stream near San Joaquin River fan, San Luis Ranch Alluvium (upper)	Wood (unknown)	1100	1100	22670	200	26709	27233	27757	USGS-1201	Lettis 1982, 1985; Atwater et al. 1986	Chino
FRE-22	22	FRE, Huckleberry Meadow	Surface deposit	Natural	Core #1	Organic Sediment (?)	30	40	200	60	54	184	319	Beta-052698	Anderson and Smith 1997	Cannell
FRE-22	22	FRE, Huckleberry Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	81	95	3770	110	3843	4150	4429	Beta-062504	Anderson and Smith 1997	Cannell
FRE-22	22	FRE, Huckleberry Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	126	135	9430	90	10416	10683	10893	Beta-052699	Anderson and Smith 1997	Cannell
FRE-22	22	FRE, Huckleberry Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	220	230	9890	500	10162	11445	12849	Beta-046163	Anderson and Smith 1997	Cannell
FRE-23	23	FRE-0129, Little Panoche Creek	Surface deposit	Cultural	Feature 05, north of Panoche Creek, NW of reservoir pool	Charcoal	nr	nr	185	10	166	178	284	I-03163	Olsen and Payen 1968/1969; CRD 1996	Vernalis
FRE-24	24	FRE, Kings Canyon	Surface deposit	Natural	Amberat	Packrat Midden	0	1	19130	140	22343	22665	23265	A-2184	Cole 1983	Chualar family
FRE-24	24	FRE, Kings Canyon	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	12500	200	13990	14590	15200	A-2201	Cole 1983	Chualar family
FRE-24	24	FRE, Kings Canyon	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	14190	520	15655	17060	18596	A-2059	Cole 1983	Chualar family
FRE-24	24	FRE, Kings Canyon	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	14600	430	16431	17620	18738	A-2200	Cole 1983	Chualar family
FRE-24	24	FRE, Kings Canyon	Surface deposit	Natural	Packrat midden, KC5A1	Packrat Midden	0	1	20000	520	22551	23908	25367	A-2061	Cole 1983	Chualar family
FRE-24	24	FRE, Kings Canyon	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	17520	540	19764	20795	22141	A-2062	Cole 1983	Chualar family
FRE-25	25	FRE, Hightop Meadow	Surface deposit	Natural	Core #1	Organic Sediment (?)	65	75	1440	60	1268	1344	1420	Beta-034997	Anderson and Smith 1997	Shaver
FRE-25	25	FRE, Hightop Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	155	162	3020	90	2955	3208	3403	Beta-034998	Anderson and Smith 1997	Shaver
FRE-25	25	FRE, Hightop Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	214	225	6840	80	7566	7683	7850	Beta-062502	Anderson and Smith 1997	Shaver
FRE-25	25	FRE, Hightop Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	250	259	8410	100	9135	9404	9544	Beta-062503	Anderson and Smith 1997	Shaver
FRE-25	25	FRE, Hightop Meadow	Buried meadow	Natural	Core #1	Organic Sediment (?)	280	286	10160	90	11392	11814	12137	Beta-031989	Anderson and Smith 1997	Shaver
FRE-26	26	FRE-0632, Jewell Site	Surface deposit	Cultural	Unit 8, with BRMs exposed along Hog Creek	Charcoal	30	40	1650	130	1305	1562	1826	Beta-025348	Langenwalter et al. 1989; CRD 1996	Foster
FRE-26	26	FRE-0633, Pollard Site	Surface deposit	Cultural	Unit 3, with BRMs exposed along Hog Creek	Charcoal	40	50	1400	120	1056	1313	1551	Beta-025276	Langenwalter et al. 1989; CRD 1996	Foster
FRE-27	27	FRE, N Russell Ave	Buried soil	Natural	1.2 miles N of W Nees Ave, E of N Russell Ave, E wall of canal ~130 meters S of Third Lift Canal	Soil (SOM)	30	40	4230	40	4627	4753	4762	Beta-255481	Meyer, Rosenthal, and Young (in progress)	Deldota
FRE-28	28	FRE-1154, Sharer Site	Surface deposit	Cultural	Unit 4	Charcoal	30	40	770	100	622	719	914	Beta-025277	Langenwalter et al. 1989; CRD 1996	Los Robles
FRE-28	28	FRE-1154, Sharer Site	Surface deposit	Cultural	Unit 4	Charcoal	100	110	830	90	652	767	930	Beta-025278	Langenwalter et al. 1989; CRD 1996	Los Robles
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Cultural	N33/E12, "carbon silt" from housefloor	Organic Sediment	60	70	2510	80	2426	2575	2746	Beta-021204	Moratto 1988	Fallbrook
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Cultural	N36/E10	Charcoal	20	40	1290	210	765	1197	1614	Beta-010885	Moratto 1988	Fallbrook
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Natural	N38/E10	Soil (SOM)	50	60	3170	280	2743	3384	4092	Beta-021205	Moratto 1988	Fallbrook
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Natural	N40/E10	Soil (SOM)	70	77	2300	100	2098	2321	2549	Beta-021206	Moratto 1988	Fallbrook
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Natural	N62/E21 (appears to be 2Ab horizon)	Soil (SOM)	80	100	2120	60	1950	2103	2209	Beta-021967	Moratto 1988	Fallbrook

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Natural	N62/E21 (appears to be C horizon)	Soil (SOM)	140	150	2400	80	2312	2478	2731	Beta-021968	Moratto 1988	Fallbrook
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Cultural	N62/E21, dark gray-brown earthern floor (2Ab?)	Soil (SOM)	45	54	2050	100	1818	2027	2315	Beta-021201	Moratto 1988	Fallbrook
FRE-29	29	FRE-1671, Dry Creek	Surface deposit	Cultural	Unit C (from A/C horzion)	Charcoal	50	60	680	100	509	641	793	Beta-010479	Moratto 1988	Fallbrook
FRE-30	30	FRE-0064	Surface deposit	Cultural	Unit 03	Charcoal	70	80	200	130	-4	218	467	Beta-025985	Wallace et al. 1989; CRD 1996	Vista
FRE-30	30	FRE-0064	Surface deposit	Cultural	Unit 04	Charcoal	70	80	910	100	669	831	984	Beta-025986	Wallace et al. 1989; CRD 1996	Vista
FRE-30	30	FRE-0064	Surface deposit	Cultural	Unit 05	Charcoal	30	40	370	70	298	411	521	Beta-025987	Wallace et al. 1989; CRD 1996	Vista
FRE-30	30	FRE-0064	Surface deposit	Cultural	Unit 05	Charcoal	50	60	410	60	417	451	531	Beta-025988	Wallace et al. 1989; CRD 1996	Vista
FRE-30	30	FRE-0064	Surface deposit	Cultural	Unit 05	Charcoal	60	70	700	60	617	655	731	Beta-025989	Wallace et al. 1989; CRD 1996	Vista
FRE-31	31	FRE, Granite Gorge pond	Lacustrine	Natural	Tarn upstream of tioga recessional moraines	Organic sediment (silt)	545	555	15230	470	17038	18350	19378	Beta-052208	Clark, Bierman and Larsen 1995	Lithic Xeropsamments
FRE-31	31	FRE, Granite Gorge pond	Lacustrine	Natural	Tarn upstream of tioga recessional moraines	Organic sediment (gyttja)	267	267	11700	60	13403	13553	13712	CAMS-11388	Clark, Bierman and Larsen 1995	Lithic Xeropsamments
FRE-31	77	FRE, Granite Gorge pond	Lacustrine	Natural	Tarn upstream of tioga recessional moraines	Organic sediment (gyttja)	259	259	11690	60	13394	13543	13705	CAMS-11376	Clark, Bierman and Larsen 1995	Lithic Xeropsamments
FRE-32	32	FRE, Long Meadow Ck (upper)	Buried meadow	Natural	0.1 m diameter fir log	Wood (fir log)	580	580	3770	65	3973	4145	4317	UGa-0605	Wood 1975	Gerle family
FRE-32	32	FRE, Long Meadow Ck (upper)	Buried meadow	Natural	0.2 m diameter fir log	Wood (fir log)	310	310	3320	85	3375	3557	3726	UGa-0604	Wood 1975	Gerle family
FRE-32	32	FRE, Long Meadow Ck (upper)	Buried meadow	Natural	Brackets age of ash layers above and below with UGa-450	Wood (White fir log)	45	45	1175	65	962	1101	1191	UGa-0451	Wood 1975	Gerle family
FRE-32	32	FRE, Long Meadow Ck (upper)	Buried soil	Natural	Outer wood of in situ stump buried by meadow	Wood (White fir stump)	60	60	1210	55	1050	1138	1272	UGa-0450	Wood 1975	Gerle family
FRE-32	32	FRE-0534, Long Meadow Creek	Surface deposit	Cultural	Fire Hearth, Tioga moraine?	Charcoal	43	67	5085	100	5600	5821	6009	I-09617	Wren 1978; CRD 1996	Sirretta family
FRE-32	32	FRE-0534, Long Meadow Creek	Surface deposit	Cultural	Fire Hearth, Tioga moraine?	Charcoal	43	67	5220	105	5745	5999	6216	I-09618	Wren 1978; CRD 1996	Sirretta family
FRE-32	32	FRE-0534, Long Meadow Creek	Surface deposit	Cultural	Tioga moraine?	Charcoal	0	75	2080	85	1875	2060	2212	I-09619	Jackson 1983; CRD 1996	Sirretta family
FRE-32	32	FRE-0534, Long Meadow Creek	Surface deposit	Cultural	Tioga moraine?	Charcoal	0	75	4160	90	4497	4683	4861	I-09616	Jackson 1983; CRD 1996	Sirretta family
FRE-33	33	FRE, Dinkey Meadow	Buried meadow	Natural	Core with volcanic ash layer at 39-40 cm	Organic Sediment	160	165	1980	160	1596	1943	2330	Beta-016109	Davis and Moratto 1988	Shaver family
FRE-33	33	FRE, Dinkey Meadow	Buried meadow	Natural	Core with volcanic ash layer at 39-40 cm	Organic Sediment	205	215	2660	100	2456	2776	3003	Beta-017187	Davis and Moratto 1988	Shaver family
FRE-33	33	FRE, Dinkey Meadow	Buried meadow	Natural	Core with volcanic ash layer at 39-40 cm	Organic Sediment	180	190	2920	90	2855	3079	3275	Beta-017186	Davis and Moratto 1988	Shaver family
FRE-33	33	FRE, Dinkey Meadow	Buried meadow	Natural	Core with volcanic ash layer at 39-40 cm	Organic Sediment	290	300	4850	110	5433	5587	5761	Beta-016110	Davis and Moratto 1988	Shaver family
FRE-33	33	FRE-1357, Dinkey Creek	Surface deposit	Cultural	Unit 01	Charcoal	20	30	470	75	421	507	566	UGA-4142	Kipps 1982; CRD 1996	Cagwin family
FRE-33	33	FRE-1361	Surface deposit	Cultural	Unit 04	Charcoal (or wood?)	20	20	950	185	636	885	1262	UGA-4144	Kipps 1982; CRD 1996	Cagwin family
FRE-33	33	FRE-1361	Surface deposit	Cultural	Unit 06	Wood (post)	20	20	445	65	419	485	556	UGA-4171	Kipps 1982; CRD 1996	Cagwin family
FRE-34	34	FRE, Cabin Meadow (lower)	Surface deposit	Natural	On rhyolitic tephra; heartwood 40-52 yrs older than outer ring	Wood (fir log)	30	30	760	60	634	701	795	UGa-0602	Wood 1975; -46 yrs for heartwood	Cagwin family
FRE-34	34	FRE, Cabin Meadow (upper)	Buried soil	Natural	Buried in basal paleosol of Upper Cabin Meadow on Laurel Creek	Wood (pine)	305	310	8960	90	9742	10051	10251	UGa-0621	Wood 1975	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried meadow	Natural	Core with young Inyo Crater Ash at 50-54, and unidentified ash at 160-170	Organic Sediment	50	60	1870	160	1413	1807	2155	Beta-016111	Davis and Moratto 1988	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried meadow	Natural	Core with young Inyo Crater Ash at 50-54, and unidentified ash at 160-170	Organic Sediment	90	100	2980	80	2945	3159	3365	Beta-17183	Davis and Moratto 1988	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried meadow	Natural	Core with young Inyo Crater Ash at 50-54, and unidentified ash at 160-170	Organic Sediment	165	175	4540	90	4956	5179	5334	Beta-017184	Davis and Moratto 1988	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried meadow	Natural	Core with young Inyo Crater Ash at 50-54, and unidentified ash at 160-170	Organic Sediment	195	215	7070	70	7739	7892	8014	Beta-016112	Davis and Moratto 1988	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried meadow	Natural	Core with young Inyo Crater Ash at 50-54, and unidentified ash at 160-170	Organic Sediment	325	350	10330	380	11069	12057	12961	Beta-016113	Davis and Moratto 1988	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried meadow	Natural	Core with young Inyo Crater Ash at 50-54, and unidentified ash at 160-170	Organic Sediment	375	380	11490	270	12892	13377	13859	Beta-017185	Davis and Moratto 1988	Cagwin family
FRE-34	34	FRE, Exchequer Meadow	Buried soil	Natural	Heartwood from pine stump rooted in paleosol	Wood (pine)	310	310	9855	100	11083	11303	11715	UGa-0622	Wood 1975	Cagwin family
FRE-35	35	FRE-1044, Dinkey Creek	Surface deposit	Cultural	Unit 1	Charcoal	10	20	940	80	690	849	979	UGA-4143	Kipps 1982; CRD 1996	Umpa family
FRE-35	35	FRE-1044, Dinkey Creek	Surface deposit	Cultural	Unit 1	Charcoal	40	50	2450	100	2329	2532	2753	UGA-4145	Kipps 1982; CRD 1996	Umpa family
FRE-36	36	FRE, Balsam Meadow	Surface deposit	Natural	Core A	Soil (SOM)	30	40	470	90	312	501	568	1.8	Davis et al.1985	Gerle family
FRE-36	36	FRE, Balsam Meadow	Surface deposit	Natural	Core A	Soil (SOM)	50	60	2350	120	2121	2415	2738	8.1	Davis et al.1985	Gerle family
FRE-36	36	FRE, Balsam Meadow	Buried meadow	Natural	Core A	Soil (SOM)	110	125	2920	120	2837	3081	3359	8.3	Davis et al.1985	Gerle family
FRE-36	36	FRE, Balsam Meadow	Surface deposit	Natural	Core B	Soil (SOM)	75	85	3160	140	2986	3373	3696	8.5	Davis et al.1985	Gerle family
FRE-36	36	FRE, Balsam Meadow	Buried meadow	Natural	Core B	Soil (SOM)	140	150	6160	140	6719	7046	7330	10.4	Davis et al.1985	Gerle family
FRE-36	36	FRE, Balsam Meadow	Buried meadow	Natural	Core C	Soil (SOM)	210	240	9420	200	10234	10699	11202	11.1	Davis et al.1985	Gerle family
FRE-36	36	FRE-0798, Stevenson Creek	Surface deposit	Cultural	Unit T-3, hearth	Charcoal	83	85	1325	80	1063	1238	1373	UCR-1244	Moratto and Riley 1980; CRD 1996	Shaver family
FRE-36	36	FRE-0811, Balsam Creek	Surface deposit	Cultural	Unit T-2, near base of cultural deposit 10-20 cm above bedrock	Charcoal	90	100	7330	260	7612	8151	8642	UCR-1245	Moratto and Riley 1980; CRD 1996	Gerle family
FRE-36	36	FRE-0811, Balsam Meadow	Surface deposit	Cultural	S102/E99	Charcoal	38	38	1120	60	928	1035	1175	Beta-008518	Goldberg and Moratto 1984; CRD 1996	Gerle family
FRE-36	36	FRE-0812, Balsam Meadow	Surface deposit	Natural	S148/E92, from Cu horizon below midden	Soil (SOM)	60	70	1290	70	1057	1210	1319	Beta-008522	Goldberg and Moratto 1984; CRD 1996	Gerle family
FRE-36	36	FRE-0812, Balsam Meadow	Surface deposit	Natural	S148/E92, from Cu horizon below midden	Soil (SOM)	90	100	1640	90	1340	1541	1737	Beta-008523	Goldberg and Moratto 1984; CRD 1996	Gerle family
FRE-36	36	FRE-0812, Balsam Meadow	Buried deposit	Natural	S148/E93, truncated 2Ab/2Cu	Charcoal	70	70	4080	80	4419	4603	4827	Beta-008519	Goldberg and Moratto 1984; CRD 1996	Gerle family
FRE-36	36	FRE-0812, Balsam Meadow	Surface deposit	Cultural	Unit T-1	Charcoal	68	68	200	10	150	165	289	UCR-1246	Moratto and Riley 1980; CRD 1996	Gerle family
FRE-36	36	FRE-0812, Balsam Meadow	Surface deposit	Cultural	Unit T-3	Charcoal	50	50	920	75	694	836	956	UCR-1243	Moratto and Riley 1980; CRD 1996	Gerle family
FRE-36	36	FRE-0818, Balsam Meadow	Surface deposit	Cultural	S97/E79	Soil (SOM)	30	40	100	80	-5	132	155	Beta-008524	Goldberg and Moratto 1984; CRD 1996	Gerle family
FRE-37	37	FRE, Upper Mills Creek Lake	Surface deposit	Natural	?	Soil (SOM)	9	11	700	60	617	655	731	USGS-0120	Price 1982 (#431-434); collected by Yount	Rock outcrop-Rubble land 2
FRE-37	37	FRE, Upper Mills Creek Lake	Surface deposit	Natural	?	Soil (SOM)	26	26	1170	55	963	1094	1185	USGS-0119	Price 1982 (#431-434); collected by Yount	Rock outcrop-Rubble land 2
FRE-37	37	FRE, Upper Mills Creek Lake	Surface deposit	Natural	?	Soil (SOM)	16	18	1740	35	1549	1650	1728	USGS-0121	Price 1982 (#431-434); collected by Yount	Rock outcrop-Rubble land 2
FRE-37	37	FRE, Upper Mills Creek Lake	Buried soil	Natural	?	Soil (SOM)	27	29	7120	45	7915	7950	8017	USGS-0122	Price 1982 (#431-434); collected by Yount	Rock outcrop-Rubble land 2
INY-01	1	INY-5083, Burro Canyon	Surface deposit	Cultural	Feature 01, S4/W2.75, midden and fire-affected rock	Charcoal	20	37	780	70	640	718	803	Beta-128687	Gilreath and King 2003	CALVISTA
INY-01	1	INY-5083, Burro Canyon	Surface deposit	Cultural	Feature 08, N6/W4.8, midden, millingstones, flakedstone, FAR	Charcoal	25	30	170	60	56	167	301	Beta-128686	Gilreath and King 2003	CALVISTA
INY-01	1	INY-5084, Burro Canyon	Buried deposit	Cultural	Feature 07, buried pit with flat bottom and dense charcoal	Charcoal	10	40	670	60	539	627	698	Beta-129576	Gilreath and King 2003	Cajon

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-01	1	INY-5086, Burro Canyon	Surface deposit	Cultural	Feature 02, S3/E8, glass trade beads, ash-filled hearth, wind-screen	Charcoal	14	16	270	70	256	329	501	Beta-128689	Gilreath and King 2003	Cajon
INY-01	1	INY-5086, Burro Canyon	Surface deposit	Cultural	Feature 03, S1/E1, housefloor	Charcoal	10	20	190	50	60	177	233	Beta-128688	Gilreath and King 2003	Cajon
INY-01	1	INY-5093, Burro Canyon	Surface deposit	Cultural	Feature 01, fire-affected cobbles, hearth or cooking feature	Charcoal	2	20	190	70	-4	180	319	Beta-128693	Gilreath and King 2003	Cajon
INY-01	1	INY-5093, Burro Canyon	Surface deposit	Cultural	Feature 02, two millingstone and charcoal smear	Charcoal	0	10	100	10	87	119	256	Beta-128692	Gilreath and King 2003	Cajon
INY-01	1	INY-5093, Burro Canyon	Surface deposit	Cultural	Feature 03, two millingstones, cobble tool, and fire-affected rock	Charcoal	0	19	210	70	55	197	332	Beta-128691	Gilreath and King 2003	Cajon
INY-01	1	INY-5093, Burro Canyon	Surface deposit	Cultural	Feature 04, millingstones, beads, bone, flakedstone, and FAR	Charcoal	2	24	190	60	52	178	315	Beta-128690	Gilreath and King 2003	Cajon
INY-01	1	INY-5095, Burro Canyon	Surface deposit	Cultural	Feature 02, wedge-chaped charcoal concentration and FAR	Charcoal	10	25	300	50	284	382	489	Beta-128695	Gilreath and King 2003	CALVISTA
INY-01	1	INY-5095, Burro Canyon	Surface deposit	Cultural	Feature 03, charcoal and FAR-ring concentration	Charcoal	12	28	450	50	426	501	552	Beta-128694	Gilreath and King 2003	CALVISTA
INY-01	1	INY-5096, Burro Canyon	Surface deposit	Cultural	Feature 01, 1.25N/0.75E/W, millingstones, core tool, and FAR	Charcoal	5	15	30	70	10	111	150	Beta-128696	Gilreath and King 2003	CALVISTA
INY-02	2	INY-5825, Charley Range	Lacustrine	Natural	S48/W30.5, Stain 1, Spring Peat, at Basalt Ridge	Organic Sediment	37	47	9870	50	11198	11269	11397	Beta-170210	Basgall 2004	Playa
INY-02	2	INY-5825, Charley Range	Surface deposit	Natural	S48/W30.5, Stain 1, Spring Peat, at Basalt Ridge	Organic Sediment	2	6	10010	110	11233	11544	11840	Beta-170208	Basgall 2004	Playa
INY-02	2	INY-5825, Charley Range	Buried soil	Natural	S50/W17, Buried Soil Unit, at Basalt Ridge	Organic Sediment	35	45	8390	130	9022	9361	9557	Beta-170209	Basgall 2004	Playa
INY-02	2	INY-5825, Charley Range	Surface deposit	Natural	Site 1, beside Collection Area A, Mammoth #6, Basalt Ridge	Organic Sediment	0	10	10800	310	11760	12687	13312	GX-03446	Davis 1978	Playa
INY-03	3	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB27	Organic sediment	3169	3229	17380	50	20297	20512	20840	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
INY-04	4	INY-3033, Coso Trans. Line	Surface deposit	Cultural	Unit 01, basalt tablelands	Charcoal	10	20	400	50	421	449	521	Beta-052552	Hildebrandt and Wohlgemuth 1995	Cajon
INY-04	4	INY-3455, Coso Trans. Line	Surface deposit	Cultural	Unit 01, Locus of INY-3017, basalt tablelands	Charcoal	30	50	101	9	96	120	256	Beta-052553	Hildebrandt and Wohlgemuth 1995	Rock outcrop
INY-05	5	INY-3433, Coso Trans. Line	Surface deposit	Cultural	S8/E9, Feature 04, circular rock hearth w/millingstones	Charcoal	10	20	90	60	8	120	151	Beta-039767	Hildebrandt and Wohlgemuth 1995	Rock outcrop
INY-06	6	INY-5830, Airport Lake	Surface deposit	Cultural	Locus A, N63/W54, Feature B, basalt cobble concentration	Charcoal	0	20	830	50	672	747	802	?	Rosenthal and Eerkens 2003	Playa
INY-07	7	INY, Little Lake	Buried marsh	Natural	Whole sediment core, Mehringer and Davis 1974	Peat (Scirpus/Typha)	591	601	3020	120	2875	3198	3456	WSU-1474	Mehringer and Sheppard 1974; Shepard and Chatters 1976 (RCJ)	Cartago
INY-07	7	INY, Little Lake	Buried marsh	Natural	Whole sediment core, Mehringer and Davis 1974	Peat (Scirpus/Typha)	796	806	3920	120	4065	4353	4652	WSU-1466	Shepard and Chatters 1976 (RCJ)	Cartago
INY-07	7	INY, Little Lake	Buried marsh	Natural	Whole sediment core, Mehringer and Davis 1974	Peat (Scirpus/Typha)	1130	1137	5060	140	5581	5810	6182	WSU-1464	Shepard and Chatters 1976 (RCJ)	Cartago
INY-07	7	INY, Little Lake Site	Buried soil	Cultural	Buried hearth ~400 m NW of Little Lake Hotel; collected 1970 by C.V. Haynes	Charcoal	150	150	1420	70	1230	1333	1421	TX-1195	Mehringer and Sheppard 1974; RCJ 1975	Cartago
INY-07	7	INY, Little Lake Site	Buried soil	Cultural	Buried hearth on S-side of gravel pit near Little Lake Hotel; collected 1976 by G.I. Smith	Charcoal	75	75	1440	130	1063	1355	1615	USGS-0068	Robinson and Trimble 1983 (RCJ) RD 1996	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-2, from surface soil below artificial fill	Charcoal	90	100	1230	40	1063	1163	1266	Beta-186885	Byrd and Reddy 2004	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-2, from surface soil below artificial fill	Charcoal	70	80	1320	40	1176	1254	1302	Beta-186884	Byrd and Reddy 2004	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-2, from surface soil below artificial fill	Charcoal	47	60	1290	40	1167	1229	1297	Beta-186883	Byrd and Reddy 2004	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-4, Strat. 2, from artificial fill over intact soil	Charcoal	20	30	1140	40	963	1045	1150	Beta-186886	Byrd and Reddy 2004	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-4, Strat. 2, from artificial fill over intact soil	Charcoal	40	50	1320	50	1168	1247	1332	Beta-186887	Byrd and Reddy 2004	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-4, Strat. 3, ash lens, from intact surface soil below artificial fill	Charcoal	70	70	1370	80	1078	1287	1412	Beta-186888	Byrd and Reddy 2004	Cartago
INY-07	7	INY-3826, Pagunda	Surface deposit	Cultural	CU-4, Strat. 6, from intact subsoil below artificial fill	Charcoal	100	110	1220	70	1047	1146	1285	Beta-186889	Byrd and Reddy 2004	Cartago
INY-08	8	INY-1815	Surface deposit	Cultural	N30/W25, Feature 02	Charcoal	8	12	160	70	-3	161	300	Beta-039765	Gilreath and Hildebrandt 1995	Rock outcrop
INY-09	9	INY-5840, Airport Lake	Surface deposit	Cultural	Feature 01, circular rock ring	Charcoal	0	20	710	40	637	667	726	?	Rosenthal and Eerkens 2003	Cajon
INY-09	9	INY-5840, Airport Lake	Surface deposit	Cultural	Feature 02, circular rock ring	Charcoal	0	20	660	40	553	615	676	?	Rosenthal and Eerkens 2003	Cajon
INY-09	9	INY-5840, Airport Lake	Surface deposit	Cultural	Feature 03, disturbed rock ring	Charcoal	0	10	460	50	428	508	557	?	McGuire and Gilreath 1998	Cajon
INY-09	9	INY-5840, Airport Lake	Surface deposit	Cultural	Feature 08, circular rock ring	Charcoal	0	20	930	40	763	849	927	?	McGuire and Gilreath 1998	Cajon
INY-09	9	INY-5840, Airport Lake	Surface deposit	Cultural	Feature 09, circular rock ring	Charcoal	0	20	510	40	500	533	560	?	McGuire and Gilreath 1998	Cajon
INY-10	13	INY, Rose Valley	Buried deposit	Natural	Auger 4, Cinder Flat	Organic sediment	60	80	9180	100	10238	10344	10440	Beta-260151	Young 2009 (in progress)	Cartago
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 01 and 02, carbonized matter on large mammal bone	Organic Matter (sinew or flesh?)	50	60	8900	65	9765	10018	10205	AA-10536	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 01 and 02, carbonized matter on large mammal bone	Organic Matter (sinew or flesh?)	80	90	7060	60	7757	7888	8000	AA-10537	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 04	Shell-m (Olivella A1)	70	80	8670	85	8620	9001	9346	AA-08620	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 06	Charcoal	160	170	630	50	543	604	669	UCR-2655	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 06	Shell-m (Olivella A1)	160	170	8400	85	8367	8649	8980	AA-08622	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 06 and 07	Bone (unknown)	160	170	2300	70	2123	2310	2493	UCR-2654	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Surface deposit	Cultural	Trench 20, Unit 06, part of late prehistoric hearth	Charcoal	60	70	300	40	288	384	474	UCR-2622	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried deposit	Cultural	Trench 20, Unit 09	Shell-m (Olivella A1)	110	120	8625	110	8538	8931	9323	AA-08621	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried soil	Cultural	Trench 21, Unit 01, carbonized matter on large mammal bone	Organic Matter (sinew or flesh?)	50	60	4390	50	4849	4966	5067	AA-10534	Schroth 1994	Rock outcrop
INY-10	10	INY-0182, Stahl Site	Buried soil	Cultural	Trench 21, Unit 01, carbonized matter on large mammal bone	Organic Matter (sinew or flesh?)	80	90	8625	60	9494	9597	9737	AA-10535	Schroth 1994	Rock outcrop
INY-11	11	INY, Death Valley (west)	Lacustrine	Natural	Core 6	Organic Sediment	1760	1760	17550	80	20433	20709	21081	Beta-097797	Anderson and Wells 2003a	Playa
INY-11	11	INY, Death Valley (west)	Lacustrine	Natural	Core 6	Organic Sediment	2540	2540	26200	150	31016	31448	31880	Beta-093296	Anderson and Wells 2003a	Playa
INY-12	4	INY, Rose Valley	Buried deposit	Natural	Auger 7, Dead Chevy Flat	Organic sediment	80	100	9720	100	11071	11161	11242	Beta-260156	Young 2009 (in progress)	Cartago
INY-13	13	INY, Rose Valley	Surface deposit	Natural	Auger 2, Rose Valley Flat	Organic sediment	10	20	7320	80	8018	8113	8196	Beta-260150	Young 2009 (in progress)	Cartago
INY-13	13	INY, Rose Valley	Buried soil	Natural	Column Sample, Lava End; 2Ab horizon below Cartago soil	Organic sediment	50	70	4440	80	4876	5050	5083	Beta-260152	Young 2009 (in progress)	Cartago
INY-13	12	INY, Rose Valley	Buried deposit	Natural	Column Sample, Lava End; black mat below Cartago soil	Organic sediment	175	185	8120	100	8980	9067	9262	Beta-260154	Young 2009 (in progress)	Cartago

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-13	13	INY, Rose Valley	Buried deposit	Natural	Column Sample, Lava End; black mat below Cartago soil	Organic sediment	160	170	9410	100	10511	10640	10756	Beta-260153	Young 2009 (in progress)	Cartago
INY-13	4	INY, Rose Valley	Buried soil	Natural	Lava End Rose Valley Flat; 2Ab horizon below Cartago soil	Organic sediment	40	60	6770	100	7565	7624	7689	Beta-260155	Young 2009 (in progress)	Cartago
INY-14	14	INY-1816, Coso Volcanic	Surface deposit	Cultural	N30/W25, Area C, Locus 2, Feature 02, hearth	Charcoal	8	12	160	70	-3	161	300	?	Gilreath and Hildebrandt 1995	UPSPRING
INY-14	14	INY-1824	Surface deposit	Cultural	N174/E107, Feature 01	Charcoal	40	60	2450	90	2345	2532	2738	Beta-033258	Gilreath and Hildebrandt 1995	Rock outcrop
INY-14	14	INY-1906	Surface deposit	Cultural	N28/W151, Feature 010	Charcoal	0	10	110	70	-4	132	153	Beta-036258	Gilreath and Hildebrandt 1995	Rock outcrop
INY-14	14	INY-1906	Surface deposit	Cultural	N78/E335, Feature 09	Charcoal	0	10	110	70	-4	132	153	Beta-036259	Gilreath and Hildebrandt 1995	Rock outcrop
INY-14	14	INY-1907	Surface deposit	Cultural	N18/E38, Feature 01	Charcoal	40	48	3080	70	3136	3288	3445	Beta-036261	Gilreath and Hildebrandt 1995	Rock outcrop
INY-14	14	INY-2103	Surface deposit	Cultural	S56/W18, Feature 01	Charcoal	0	20	370	70	298	411	521	Beta-039766	Gilreath and Hildebrandt 1995	UPSPRING
INY-14	14	INY-4243	Surface deposit	Cultural	N34/W69, Feature 01	Charcoal	0	10	130	80	-4	145	292	Beta-039763	Gilreath and Hildebrandt 1995	Rock outcrop
INY-14	14	INY-4627, Coso Volcanic	Surface deposit	Cultural	S60/W20, Feature 01, fire-affected rock concentration	Charcoal	0	10	101	6	112	123	255	?	Gilreath and Hildebrandt 1995	Rock outcrop
INY-15	15	INY-3415, Rochester Cave	Surface deposit	Cultural	Hearth	Charcoal	?	?	150	15	6	187	224	?	Yohe and Parr 1987; Yohe 1992	Cartago
INY-16	16	INY-1928, East Flank	Surface deposit	Cultural	Locus 1, Unit N0.8/E19, Feature 02	Charcoal	10	20	0	50	27	76	140	?	McGuire and Gilreath 1998	Rock outcrop
INY-16	16	INY-1928, East Flank	Surface deposit	Cultural	Locus 1, Unit N3/W9, Feature 03	Charcoal	8	15	80	50	11	113	150	?	McGuire and Gilreath 1998	Rock outcrop
INY-16	16	INY-1928, East Flank	Surface deposit	Cultural	Locus 1, Unit N7.5/E82, Feature 01	Charcoal	10	20	60	50	13	107	148	?	McGuire and Gilreath 1998	Rock outcrop
INY-16	16	INY-1965, East Flank	Surface deposit	Cultural	Unit N63/W30, Feature 08	Charcoal	10	20	790	60	652	721	800	?	McGuire and Gilreath 1998	Rock outcrop
INY-16	16	INY-1969, East Flank	Surface deposit	Cultural	Locus 1, Unit S26/W31, Feature 01	Charcoal	10	20	620	50	540	602	666	?	McGuire and Gilreath 1998	Rock outcrop
INY-16	16	INY-4266, East Flank	Surface deposit	Cultural	Unit N32/W19	Charcoal	20	30	1330	90	1056	1240	1404	?	McGuire and Gilreath 1998	Rock outcrop
INY-17	17	INY, Owens Lake, south	Surface deposit	Natural	Packrat midden from incised buried fan north of Highway 178 (178.1)	Packrat Midden	0	1	200	15	148	168	188	OS-71198	Meyer, Rosenthal, and Young (in progress)	Arizo
INY-18	18	INY, Panamint Valley	Lacustrine	Natural	Core DH-1 in Ballarat Basin, wetlands	Plant (unknown)	3017	3017	24880	160	29270	29842	30414	CAMS-?	Jayco et al. 2005, 2008	BUNKERHILL
INY-18	18	INY, Panamint Valley	Lacustrine	Natural	Core DH-1 in Ballarat Basin, wetlands	Crustacean (ostracodes)	3901	3992	40710	760	43955	45349	46743	CAMS-?	Jayco et al. 2005, 2008	BUNKERHILL
INY-19	19	INY, Sugarloaf Mtn. Site	Surface deposit	Cultural	EU-12	Charcoal	10	10	270	100	243	312	505	Beta-026918	Cleland et al. 1990	UPSPRING
INY-19	19	INY, Sugarloaf Mtn. Site	Surface deposit	Cultural	EU-7	Charcoal	30	30	500	65	436	532	654	Beta-027319 (ETH-4422)	Cleland et al. 1990	UPSPRING
INY-19	19	INY, Sugarloaf Mtn. Site	Surface deposit	Cultural	EU-9	Charcoal	60	60	1240	120	928	1153	1354	Beta-026434	Cleland et al. 1990	UPSPRING
INY-19	19	INY, Sugarloaf Mtn. Site	Surface deposit	Cultural	TU-1	Charcoal	70	70	840	80	669	772	920	Beta-021383	Cleland et al. 1990	UPSPRING
INY-19	19	INY, WP 75-12, Sugarloaf Mtn.	Surface deposit	Cultural	Test Unit 1, geothermal well pad, fire hearth, loose charcoal	Charcoal	60	80	840	80	669	772	920	Beta-021383	Kelley et al. 1987; Faull 2006 - SCA	UPSPRING
INY-19	19	INY-1923	Surface deposit	Cultural	Test Unit 4, hearth	Charcoal	40	50	900	90	675	823	962	Beta-021014	Kelly et al. 1987; Cleland et al. 1990	UPSPRING
INY-19	19	INY-2062, Coso Geothermal	Surface deposit	Cultural	Test Unit 2 at top of knoll, 30 to 40 cm wide hearth	Charcoal	10	20	102	9	96	120	256	Beta-021015	Kelly et al. 1987; Yohe 1992	UPSPRING
INY-19	19	INY-3004/5	Surface deposit	Cultural	Locus 1, S288/E191, Feature 04	Charcoal	0	10	860	65	684	783	914	Beta-036260	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-3004/5	Surface deposit	Cultural	S360/E49.8, Feature 01	Charcoal	0	10	110	60	6	128	152	Beta-039361	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4322/H, Coso Volcanic	Surface deposit	Cultural	N84.5/W56.9, Feature 01	Charcoal	10	20	99	7	112	123	255	?	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4325	Surface deposit	Cultural	Locus B, S17/E80, Feature 02	Charcoal	0	15	930	80	689	843	969	Beta-039764	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4329	Surface deposit	Cultural	N122/W57, Feature 017	Charcoal	30	40	290	50	281	376	490	Beta-039364	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4329	Surface deposit	Cultural	N176/W157, Feature 01 and 1a	Charcoal	0	30	580	60	518	596	660	Beta-039357	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4329	Surface deposit	Cultural	N22/W189.5, Feature 02	Charcoal	10	20	140	50	54	142	283	Beta-039360	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4329	Surface deposit	Cultural	N74/W83, Feature 06	Charcoal	0	30	360	30	316	414	499	Beta-039359	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4329	Surface deposit	Cultural	N9/W56;N7/W55, Feature 020	Charcoal	4	20	310	50	288	386	493	Beta-039358	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4329	Surface deposit	Cultural	S29/W122, Feature 014	Charcoal	8	17	530	60	497	554	654	Beta-039356	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4330	Surface deposit	Cultural	N11/E3, Feature 02	Charcoal	20	30	600	50	533	601	662	Beta-039362	Gilreath and Hildebrandt 1995	UPSPRING
INY-19	19	INY-4330	Surface deposit	Cultural	N11/W5, Feature 03	Charcoal	30	40	3600	280	3261	3941	4651	Beta-030427	Gilreath and Hildebrandt 1995	UPSPRING
INY-20	20	INY-2284, Portuguese Bench	Surface deposit	Cultural	housefloor	Charcoal (or wood?)	0	40	960	160	652	887	1185	?	Faull 2006 - SCA via A. Gold	Cartago
INY-20	20	INY-2284, Portuguese Bench	Surface deposit	Cultural	housefloor	Charcoal (or wood?)	0	40	1810	70	1562	1741	1884	?	Faull 2006 - SCA via A. Gold	Cartago
INY-20	20	INY-2284, Portuguese Bench	Surface deposit	Cultural	housefloor	Charcoal (or wood?)	0	40	1900	90	1609	1840	2057	?	Faull 2006 - SCA via A. Gold	Cartago
INY-21	21	INY-1534, Chapman Cave 1	Surface deposit	Cultural	Unit B, with human burials, cache pits, Desert Side-notched	Charcoal	152	168	760	60	634	701	795	Beta-136691	Gilreath 2000	BLACKTOP
INY-21	21	INY-1534, Chapman Cave 1	Surface deposit	Cultural	Unit F, with human burials, cache pits, Desert Side-notched	Charcoal	107	122	320	60	285	388	502	Beta-136689	Gilreath 2000	BLACKTOP
INY-21	21	INY-1534, Chapman Cave 1	Surface deposit	Cultural	Unit H, with human burials, cache pits, Desert Side-notched	Charcoal	0	76	580	70	512	594	666	Beta-136690	Gilreath 2000	BLACKTOP
INY-21	21	INY-1534, Chapman Cave 2	Surface deposit	Cultural	Unit B, with human burials, Desert Side-notched points	Charcoal	0	46	230	60	131	224	338	Beta-136692	Gilreath 2000	BLACKTOP
INY-21	21	INY-1534, Chapman Cave 2	Surface deposit	Cultural	Unit B, with human burials, Desert Side-notched points	Charcoal	107	122	470	80	420	505	567	Beta-136693	Gilreath 2000	BLACKTOP
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1 (north end), Feature 15 or Hearth A, base of Stratum 3 or 4, top of Stratum 4 or 5?	Charcoal	300	300	5460	80	6169	6250	6407	UCR-2325	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1, Feature 16 or Hearth B, on top of lower midden, Stratum 3 or 4?	Charcoal	230	230	3240	60	3358	3466	3593	UCR-2328	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1, Stratum 2?	Charcoal	152	164	2240	145	1924	2244	2618	UCLA-1093A	Berger and Libby 1967 - RCJ; Clewlow et al. 1970	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1, Stratum 2?	Charcoal	182	213	2900	80	2848	3051	3266	UCLA-1093B	Berger and Libby 1967 - RCJ; Clewlow et al. 1970	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1, Stratum 3 or 4?	Charcoal	213	225	3520	80	3585	3798	3988	UCLA-1093C	Berger and Libby 1967 - RCJ; Clewlow et al. 1970	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1, Stratum 3 or 4?	Charcoal	244	255	3580	80	3686	3883	4090	UCLA-1093D	Berger and Libby 1967 - RCJ; Clewlow et al. 1970	Cartago

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Backhoe Trench 1, Stratum 3 or 4?	Charcoal	274	305	3900	180	3871	4328	4830	UCLA-1093E	Berger and Libby 1967 - RCJ; Clewlow et al. 1970	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	E-5, Feature 11, roasting feature below Feat. 2, Strat. 3 or 4?	Charcoal	270	280	4030	100	4280	4528	4826	UCR-2341	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	E-5, Feature 11, roasting feature below Feat. 2, Strat. 3 or 4?	Charcoal	260	270	4460	110	4838	5106	5326	UCR-2536	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Locus 1, X-1, base of Stratum 1 and top of Stratum 2	Charcoal	42	48	330	50	302	393	496	UCR-2388	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried soil	Cultural	Locus 1, X-1, Feature 12, upper rock-lined pit hearth, Strat. 2	Charcoal	140	140	1400	50	1258	1316	1401	UCR-2324	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried soil	Cultural	Locus 1, X-1, Feature 12, upper rock-lined pit hearth, Strat. 2	Charcoal	80	90	1360	70	1167	1280	1402	UCR-2335	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried deposit	Cultural	Locus 1, X-1, loose charcoal concentration, Stratum 2	Charcoal	200	210	2070	90	1865	2049	2214	UCR-2513	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Surface deposit	Cultural	Locus 1, X-3, Feature 10, rock-lined hearth, Stratum 1	Charcoal	50	50	110	50	8	123	151	UCR-2323	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried soil	Cultural	W-1, Feature 13 and 14, reused pit hearth, Stratum 2 top	Charcoal	70	70	280	50	272	365	485	UCR-2327	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried soil	Cultural	W-1, Feature 13 and 14, reused pit hearth, Stratum 2 top	Charcoal	100	100	330	60	289	392	504	UCR-2537	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 1	Buried soil	Cultural	W-1, Feature 13 and 14, reused pit hearth, Stratum 2 top	Charcoal	65	65	590	60	522	598	663	UCR-2333	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 2	Surface deposit	Cultural	Locus 2, TU-14, midden	Charcoal	40	50	900	60	722	823	927	UCR-2533	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Locus 3	Surface deposit	Cultural	Locus 3, TU-1, hearth	Charcoal	40	50	2240	100	1987	2233	2491	UCR-2373	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Spring Locus	Surface deposit	Cultural	Spring Locus, SL-2, hearth within housepit	Charcoal	40	50	150	10	8	191	223	UCR-2534	Yohe 1992, 1998; CRD 1996	Cartago
INY-22	22	INY-0372, Rose Spring, Spring Locus	Surface deposit	Cultural	Spring Locus, SL-2, hearth within housepit	Charcoal	30	40	150	10	8	191	223	UCR-2535	Yohe 1992, 1998; CRD 1996	Cartago
INY-23	23	INY-4711, Cactus Flat	Surface deposit	Cultural	Locus 1, midden near granite boulder	Charcoal	40	60	460	70	421	499	562	Beta-070348	Wohlgemuth et al.1994	MEXISPRING
INY-24	8	INY, Warm Sulpher Springs	Surface deposit	Natural	Scripus sp. seed fragments and charcoal picked from core placed in salt marsh; agrees with other dated seed from salt marsh deposits in region per P.J. Mehringer	Plant (Scripus sp.)	67	78	3450	500	2465	3769	5048	A-0952	RCJ 1969	Rock outcrop
INY-25	25	INY-2535, Nopah Cave	Surface deposit	Cultural	Hearth B	Bone (Ovis)	nr	nr	635	245	254	616	1061	UGA-5277	Sutton and Yohe; CRD 1996	BLACKMOUNT
INY-25	25	INY-2535, Nopah Cave	Surface deposit	Cultural	Hearth B	Charcoal	nr	nr	2115	110	1870	2102	2344	UGA-4816	Sutton and Yohe; CRD 1996	BLACKMOUNT
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	270	70	256	329	501	USGS-1400	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	290	50	281	376	490	USGS-1403	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	400	45	422	454	520	USGS-1530	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	740	120	535	697	912	USGS-1534	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	1340	40	1178	1273	1313	USGS-1402	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	2105	45	1966	2079	2159	USGS-1398	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	2125	50	1988	2107	2208	USGS-1397	Cole and Webb 1985	Arizo
INY-26	26	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	2235	35	2153	2232	2278	USGS-1401	Cole and Webb 1985	Arizo
INY-27	27	INY-3812	Surface deposit	Cultural	House structure, post 2	Charcoal	92	92	1600	60	1354	1485	1618	Beta-038750	Delacorte et al.1993	Timosea
INY-27	27	INY-3812	Surface deposit	Cultural	Locus 1, housefloor, post 10	Charcoal	128	128	1340	50	1172	1268	1346	Beta-040162	Delacorte et al.1993	Timosea
INY-28	28	INY, Death Valley, Badwater fan	Buried deposit	Natural	Core 68-10 on valley floor west of Badwater fan	Organic Sediment (humate)	1320	1400	11900	200	13293	13759	14203	Y-2470	Hooke 1972	Playa
INY-29	29	INY, Death Valley (west)	Lacustrine	Natural	Core 9	Organic Sediment	800	800	9780	60	11088	11207	11316	Beta-097593	Anderson and Wells 2003a	Playa
INY-29	29	INY, Death Valley (west)	Lacustrine	Natural	Core 9	Organic Sediment	1070	1070	14450	60	16909	17365	17789	Beta-094205	Anderson and Wells 2003a	Playa
INY-29	29	INY, Death Valley, Tule Spring	Buried deposit	Natural	Core 68-7 on valley floor east of Hanapuah fan	Organic Sediment (humate)	800	890	12980	700	13413	15302	17194	Y-2467	Hooke 1972	Playa
INY-29	29	INY, Death Valley, Tule Spring	Buried deposit	Natural	Core 68-7 on valley floor east of Hanapuah fan	Organic Sediment (humate)	1460	1550	21500	700	23962	25788	27614	Y-2468	Hooke 1972	Playa
INY-30	30	INY, Franklin Lake	Lacustrine	Natural	Well 14	Organic Sediment?	140	140	25600	530	29473	30763	32053	DE-242	RCJ 1988	BESHERM
INY-31	31	INY, Franklin Lake	Lacustrine	Natural	Well 10	Organic Sediment?	1220	1220	13100	150	15047	15502	16022	DE-239	RCJ 1988	BLACKMOUNT
INY-31	31	INY, Franklin Lake	Lacustrine	Natural	Well 5	Organic Sediment?	1700	1700	28700	840	32332	34088	35844	DE-238	RCJ 1988	BLACKMOUNT
INY-32	32	INY, Greenwater Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	41300	750	44494	45866	47238	USGS-1399	Cole and Webb 1985	Rock outcrop
INY-33	33	INY, Death Valley	Surface deposit	Natural	Woodrat (Neotoma sp.) dung in small cave in alluvial gravel near Bennett's Well	Packrat Midden	0	1	990	110	689	901	1095	I-03380	Buckley and Willis, 1969	Rock outcrop
INY-34	34	INY-1317, Olanche/Cartago	Surface deposit	Cultural	Locus 1, CU-18, Strat. 2, intact deposit	Charcoal	60	70	1730	40	1538	1641	1726	Beta-170732	Byrd and Hale 2003	Arizo
INY-34	34	INY-1317, Olanche/Cartago	Surface deposit	Cultural	Locus 1, CU-18, Strat. 2, intact deposit	Charcoal	50	60	2330	40	2303	2347	2470	Beta-170731	Byrd and Hale 2003	Arizo
INY-34	34	INY-1317, Olanche/Cartago	Surface deposit	Cultural	Locus 2, CU-24	Charcoal	20	30	330	70	281	390	513	Beta-170734	Byrd and Hale 2003	Arizo
INY-34	34	INY-1317, Olanche/Cartago	Surface deposit	Cultural	Locus 2, CU-24	Charcoal	20	30	340	40	308	395	488	Beta-170733	Byrd and Hale 2003	Arizo
INY-34	34	INY-1317, Olanche/Cartago	Surface deposit	Cultural	Locus 3, STU-2	Charcoal	40	60	240	40	143	285	331	Beta-170730	Byrd and Hale 2003	Arizo
INY-34	34	INY-1991, Olanche/Cartago	Surface deposit	Cultural	CSC-6; soot from pottery sherd	Organic Matter (soot)	nr	nr	180	40	131	176	230	Beta-179629	Byrd and Hale 2003	Cajon
INY-34	34	INY-1991, Olanche/Cartago	Buried soil	Cultural	Locus 3, CU-8, Strat. 7	Charcoal	120	130	5840	40	6533	6657	6745	Beta-170736	Byrd and Hale 2003	Cajon
INY-34	34	INY-1991, Olanche/Cartago	Surface deposit	Cultural	Locus 5, CU-10, Feature 1, hearth	Charcoal	10	20	320	40	302	389	481	Beta-170737	Byrd and Hale 2003	Cajon
INY-34	34	INY-1991, Olanche/Cartago	Surface deposit	Cultural	Locus 5, CU-10, Feature 1, hearth	Charcoal	10	20	420	70	308	455	543	Beta-170738	Byrd and Hale 2003	Cajon
INY-34	34	INY-1991, Olanche/Cartago	Surface deposit	Cultural	Unit 01	Charcoal	10	20	154	10	172	192	221	Beta-087336	Markos et al. 1998	Cajon
INY-34	34	INY-1991, Olanche/Cartago	Surface deposit	Cultural	Unit 01, Level 3, Feature 03, bulk sediment	Organic Sediment	120	130	1690	80	1410	1601	1742	Beta-087337	Markos et al. 1998	Cajon
INY-34	34	INY-1991, Olanche/Cartago	Surface deposit	Cultural	Unit 07	Charcoal	100	100	840	70	673	768	911	Beta-087338	Markos et al. 1998	Cajon
INY-34	34	INY-5967, Olanche/Cartago	Surface deposit	Cultural	CU-1, Strat. 1, Feature 2, pit hearth	Charcoal	10	20	90	40	12	112	148	Beta-170740	Byrd and Hale 2003	Arizo
INY-34	34	INY-5967, Olanche/Cartago	Buried soil	Cultural	CU-2, Strat. 3, Feature 01, hearth	Charcoal	70	80	1610	40	1403	1488	1571	Beta-170739	Byrd and Hale 2003	Arizo
INY-34	34	INY-5967, Olanche/Cartago	Buried soil	Cultural	CU-2, Strat. 3, Feature 01, hearth	Charcoal	70	80	1740	40	1541	1650	1738	Beta-170741	Byrd and Hale 2003	Arizo
INY-34	34	INY-5967, Olanche/Cartago	Surface deposit	Cultural	STU-3, Feature 01, housefloor/hearth	Charcoal	25	37	720	40	642	673	729	Beta-170742	Byrd and Hale 2003	Cajon
INY-34	34	INY-5967, Olanche/Cartago	Surface deposit	Cultural	STU-3, Feature 01, housefloor/hearth	Charcoal	32	34	880	40	725	794	915	Beta-170743	Byrd and Hale 2003	Cajon
INY-34	34	INY-6021, Olanche/Cartago	Buried soil	Cultural	CU-1, Strat. 3, housefloor, charcoal and ash	Charcoal	60	70	1920	40	1769	1867	1949	Beta-170745	Byrd and Hale 2003	Arizo

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-34	34	INY-6021, Olanche/Cartago	Buried soil	Cultural	CU-1, Strat. 3, housefloor, charcoal and ash	Charcoal	90	100	2020	40	1883	1972	2065	Beta-170746	Byrd and Hale 2003	Arizo
INY-34	34	INY-6021, Olanche/Cartago	Buried soil	Cultural	CU-4, hearth	Charcoal	70	80	1520	40	1333	1405	1520	Beta-170747	Byrd and Hale 2003	Arizo
INY-34	34	INY-6021, Olanche/Cartago	Buried soil	Cultural	CU-4, Strat. 2, Feature 02, hearth	Charcoal	80	90	1520	40	1333	1405	1520	Beta-170744	Byrd and Hale 2003	Arizo
INY-34	34	INY-6263, Olanche/Cartago	Surface deposit	Cultural	STU-3, disturbed hearth or refuse pile	Charcoal	40	60	1640	40	1413	1537	1620	Beta-170748	Byrd and Hale 2003	Arizo
INY-35	35	INY-0019, Panamint Valley	Buried marsh	Natural	Trench 2, North end of Lake Hill, underlies cultural	Wood (reeds)	35	36	10520	140	12045	12467	12822	UCLA-0990	Berger and Libby 1966 (RCJ)	BADLAND
INY-35	35	INY-0020, Panamint Valley	Lacustrine	Natural	Below fan surface following curve of former lake bed	Organic Sediment	120	180	10020	120	11228	11565	11986	UCLA-0989	Berger and Libby 1966 (RCJ)	BADLAND
INY-36	36	INY, Owens Valley (east)	Lacustrine	Natural	Eastern Owens Lake	Shell-f (freshwater)	?	?	20000	60	23732	23961	24231	?	Orme and Orme 2000; Bacon et al. 2006	Yellowrock
INY-36	36	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	9600	60	9687	9934	10149	?	Orme and Orme 1993; Bacon et al. 2006	Yellowrock
INY-36	36	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	10000	60	10239	10407	10543	?	Orme and Orme 1993; Bacon et al. 2006	Yellowrock
INY-36	36	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	10940	60	11322	11628	11933	?	Orme and Orme 1993; Bacon et al. 2006	Yellowrock
INY-36	36	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	11450	60	12370	12638	12804	?	Orme and Orme 1993; Bacon et al. 2006	Yellowrock
INY-36	36	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	12200	60	13096	13220	13337	?	Orme and Orme 1993; Bacon et al. 2006	Yellowrock
INY-36	36	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	13000	60	13825	13999	14158	?	Orme and Orme 1993; Bacon et al. 2006	Yellowrock
INY-37	37	INY, Death Valley, Devil's Speedway	Lacustrine	Natural	Core 10	Organic Sediment	300	300	12420	60	14149	14452	14853	Beta-097595	Anderson and Wells 2003a	Playa
INY-37	37	INY, Death Valley, Devil's Speedway	Lacustrine	Natural	Core 10	Organic Sediment	1440	1440	45800	650	49617	50917	52217	Beta-093413	Anderson and Wells 2003a	Playa
INY-37	37	INY, Death Valley, Trail Fan	Buried deposit	Natural	Core 67-16 on valley floor east of Trail fan	Organic Sediment	330	410	17400	450	19769	20626	21893	GX-01076A	Hooke 1972	Playa
INY-37	37	INY, Death Valley, Trail Fan	Buried deposit	Natural	Core 67-16 on valley floor east of Trail fan	Organic Sediment	435	455	<26000	na				GX-01076	Hooke 1972	Playa
INY-38	38	INY, Owens Lake, south	Lacustrine	Natural	2Cg, uppermost buried lacustrine shell/death bed, south lakeshore	Bone (fish)	370	400	7440	75	8154	8263	8395	OS-72752	Meyer, Rosenthal, and Young (in progress)	Yellowrock
INY-38	38	INY, Owens Lake, south	Buried soil	Natural	3Ab, Strat. IV, E wall of gully, stratum underlies buried hearth	Soil (SOM)	120	130	5950	40	6677	6778	6883	OS-72855	Meyer, Rosenthal, and Young (in progress)	Yellowrock
INY-38	38	INY, Owens Lake, south	Lacustrine	Natural	5Cg, Strat II, upper lacustrine in E wall of gully	Soil (SOM)	180	190	9310	50	10371	10514	10609	OS-72583	Meyer, Rosenthal, and Young (in progress)	Yellowrock
INY-38	38	INY, Owens Lake, south	Lacustrine	Natural	6Cg, Strat I, lower lacustrine in E wall of gully	Soil (SOM)	220	240	9230	55	10250	10396	10522	OS-72584	Meyer, Rosenthal, and Young (in progress)	Yellowrock
INY-38	38	INY, Owens Valley, Hearth Gully	Buried soil	Cultural	Buried hearth in inset fan west of S.R. 170 (190.1)	Charcoal	50	50	405	20	451	488	510	OS-71199	Meyer, Rosenthal, and Young (in progress)	Yellowrock
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	372	372	3320	70	1803	2001	2257	CAMS-04662	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	402	402	3390	70	1883	2087	2300	CAMS-04663	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	382	382	4080	70	2734	2924	3154	CAMS-06317	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	429	429	4130	60	2779	2985	3199	CAMS-06319	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	382	382	4280	70	2938	3179	3382	CAMS-06318	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	429	429	4400	60	3126	3326	3532	CAMS-06320	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	465	465	4660	100	3363	3635	3913	CAMS-06316	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	502	502	5010	80	3843	4095	4371	CAMS-06326	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	502	502	5010	100	3805	4096	4409	CAMS-06327	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	512	512	5090	80	3923	4206	4447	CAMS-04664	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	480	480	5300	70	4262	4496	4776	CAMS-06314	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Carbonate (oolites)	480	480	5310	70	4279	4510	4782	CAMS-06315	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	523	523	8280	120	7549	7795	8049	CAMS-06310	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	527	527	8930	70	8262	8447	8647	CAMS-04672	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	599	599	9980	70	9515	9741	10038	CAMS-04675	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	711	711	11140	70	10909	11189	11405	CAMS-04657	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	721	721	11360	70	11221	11507	11770	CAMS-04671	Bischoff, Stafford, and Meyer 1997	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	537	537	12570	80	12933	13112	13262	CAMS-13469	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	567	567	13080	60	13399	13578	13753	CAMS-13527	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	594	594	13680	70	13990	14293	14774	CAMS-13470	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	609	609	15400	110	16248	16745	17212	CAMS-13471	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	692	692	16540	180	18001	18491	18858	CAMS-13528	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	797	797	16990	190	18618	18903	19273	CAMS-13529	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	898	898	17890	20	19519	19683	19840	CAMS-13472	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	996	996	18730	390	19780	20578	21684	CAMS-13524	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	1194	1194	19490	270	20757	21545	22231	CAMS-13473	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2	Organic Sediment (humate)	1095	1095	19760	360	20791	21812	22617	CAMS-13526	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1494	1494	21290	240	25262	25648	26000	CAMS-13474	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1397	1397	21640	360	25031	26001	26971	CAMS-13525	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1299	1299	22990	680	26012	27592	29172	CAMS-13523	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1645	1645	24420	20	28969	29203	29437	CAMS-21537	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1599	1599	24510	180	28812	29316	29820	CAMS-13475	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1609	1609	25340	350	29555	30473	31391	CAMS-20221	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1734	1734	27710	250	32445	33059	33673	CAMS-21542	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1832	1832	29640	360	34299	35055	35811	CAMS-20222	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	1996	1996	29930	350	34618	35336	36054	CAMS-20223	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	2099	2099	31430	440	35861	36803	37745	CAMS-20224	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL90-2	Lacustrine	Natural	Core OL90-2; reservoir correction of -600 years	Organic Sediment (humate)	2238	2238	33850	60	38896	39222	39548	CAMS-20225	Benson et al. 1997, 2002	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97A	Organic Sediment (mud)	113	117	1200	50	0	0	0	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97A	Organic Sediment (mud)	175	180	2090	50	555	697	849	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97A	Organic Sediment (mud)	225	230	2430	60	883	1034	1224	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97A	Organic Sediment (mud)	230	235	2390	50	830	992	1162	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97C	Organic Sediment (mud)	115	120	2280	50	719	869	1031	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97C	Organic Sediment (mud)	160	165	2580	50	1021	1186	1318	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97C	Organic Sediment (mud)	270	275	3240	50	1724	1904	2088	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97C	Organic Sediment (mud)	405	410	4600	50	3375	3555	3735	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97C	Organic Sediment (mud)	410	415	4330	50	3045	3246	3415	CAMS-?	Smoot et al. 2000	Playa

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97PC-2	Organic Sediment (mud)	5	10	1050	40	0	0	0	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97PC-2	Organic Sediment (mud)	70	75	1370	50	0	0	0	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, Core OL97	Lacustrine	Natural	Core OL97PC-2	Organic Sediment (mud)	155	160	2390	50	830	992	1162	CAMS-?	Smoot et al. 2000	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	4040	60	2712	2875	3080	CAMS-?	Benson et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Carbonate (oolites)	?	?	5100	60	3980	4221	4419	?	Smith et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	9700	60	9223	9418	9554	CAMS-?	Benson et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	10450	60	10198	10356	10519	CAMS-?	Benson et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	11280	60	11179	11352	11688	CAMS-?	Benson et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	12000	60	12555	12699	12836	?	Smith et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	12850	60	13200	13343	13531	CAMS-?	Benson et al. 1997; Bacon et al. 2006	Playa
INY-39	39	INY, Owens Valley, playa	Lacustrine	Natural	Owens Playa	Organic Sediment	?	?	15510	60	16445	16885	17318	CAMS-?	Benson et al. 1997; Bacon et al. 2006	Playa
INY-40	40	INY, Panamint Valley	Lacustrine	Natural	Lake Panamint beach bar	Organic Sediment	500	500	32900	850	36567	38287	40007	LJ-0991	Hubbs, Bien, and Suess 1965 (RCJ)	BUNKERHILL
INY-40	40	INY, Panamint Valley Site	Lacustrine	Natural	West side of Lake Hill, lowest shoreline, with stone tools	Carbonate (tufa)	0	1	13000	700	12788	14278	16208	LJ-0977	Hubbs, Bien, and Suess 1965 (RCJ)	BUNKERHILL
INY-41	41	INY-0444, Ray Cave	Buried deposit	Cultural	Charcoal under larger boulder	Charcoal	107	122	3390	50	3547	3636	3728	UCLA-1850A	Panlaqui 1974; Gilreath 2000	Cajon
INY-41	41	INY-0444, Ray Cave	Surface deposit	Cultural	From ash lens in center of shelter, Unit C?	Charcoal	81	81	1500	95	1262	1406	1613	I-03619	Panlaqui 1974; Gilreath 2000	Cajon
INY-41	41	INY-1428, Ash Creek	Surface deposit	Cultural	N7/W8, under millingstone	Charcoal	30	40	990	80	734	893	1059	Beta-067637	Gilreath 1995	Arizo
INY-41	41	INY-1428, Ash Creek	Surface deposit	Cultural	S3/W12	Charcoal	40	50	1270	70	1054	1196	1305	Beta-134083	Gilreath and Holanda 2000	Arizo
INY-41	41	INY-1430	Surface deposit	Cultural	N4.13/W12.75	Charcoal	2	10	280	60	268	359	496	Beta-066962	Gilreath 1995	Arizo
INY-41	41	INY-1430	Surface deposit	Cultural	N50/E293	Charcoal	10	30	130	90	-5	151	313	Beta-067639	Gilreath 1995	Arizo
INY-41	41	INY-1430	Surface deposit	Cultural	N74/E255.5	Charcoal	10	16	10	60	14	99	147	Beta-066965	Gilreath 1995	Arizo
INY-41	41	INY-1434	Surface deposit	Cultural	N0/W20	Charcoal	0	20	470	80	420	505	567	Beta-066959	Gilreath 1995	Arizo
INY-41	41	INY-1434	Surface deposit	Cultural	N44/E45	Charcoal	10	20	450	80	308	483	561	Beta-067638	Gilreath 1995	Arizo
INY-41	41	INY-4554, Ash Creek	Buried soil	Natural	Ash Creek Arroyo	Organic Sediment	80	105	8390	90	9196	9388	9536	Beta-132587	Gilreath and Holanda 2000	Arizo
INY-41	41	INY-4554, Ash Creek	Buried soil	Natural	Locus 1, N2/E10, E of S.R. 395, faulted?	Organic Sediment	80	83	6740	90	7435	7602	7746	Beta-063637	McGuire and Burke 1994	Arizo
INY-41	41	INY-4554, Ash Creek	Buried soil	Natural	Trench 14	Organic Sediment	85	85	7780	90	8393	8571	8785	Beta-132585	Gilreath and Holanda 2000	Arizo
INY-41	41	INY-4554, Ash Creek	Buried soil	Natural	Trench 16	Organic Sediment	105	105	7010	100	7663	7838	8011	Beta-132586	Gilreath and Holanda 2000	Arizo
INY-42	42	INY, Owens Valley, Centennial	Lacustrine	Natural	Centennial shore, beach ridge, sample 2	Shell-f (Anodonta)	0	1	30630	340	35297	36001	36705	Beta-106046	Orme and Orme 2008	Yellowrock
INY-42	42	INY, Owens Valley, Centennial	Lacustrine	Natural	Centennial shore, beach ridge, sample 4	Shell-f (Anodonta)	0	1	12760	80	13558	13768	13983	Beta-082062	Orme and Orme 2008	Mazourka
INY-42	42	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Centennial shore, death bed, sample 1	Shell-f (gastropod)	0	1	34540	500	38870	39900	40930	Beta-106047	Orme and Orme 2008	Cartago
INY-42	42	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Owens River, fan delta, sample 6 (from gully cutbank?)	Shell-f (Anodonta)	0	1	11700	110	12648	12846	13066	Beta-082061	Orme and Orme 2008	Mazourka
INY-43	43	INY, Death Valley, Pyramid Peak	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	11600	160	13181	13466	13779	UCLA-0755	Wells and Berger 1967	Rock outcrop
INY-44	44	INY, Owens Valley, Bartlett Well	Lacustrine	Natural	Below surface of Owens Lake Playa, 50 yards East of Barlett Salt Plant Well No.2	Organic Sediment (?)	875	900	4100	800	1136	2995	4961	A-0554	Haynes et al. 1966 (RCJ)	Typic Psammaquents
INY-44	44	INY-1447	Surface deposit	Cultural	N10/E0	Charcoal	14	36	390	90	282	422	556	Beta-066966	Gilreath 1995	Arizo
INY-44	44	INY-1451	Surface deposit	Cultural	Locus 1, N1017/E1012	Charcoal	20	30	990	80	734	893	1059	Beta-066790	Gilreath 1995	Cajon
INY-44	44	INY-1452	Surface deposit	Cultural	N981/E1010	Charcoal	50	60	440	70	310	476	555	Beta-067198	Gilreath 1995	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	Hearth (Feature 06)	Charcoal	?	?	1180	70	963	1107	1264	?	Faull 2006 - SCA via A. Gold	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	House Feature 01 charcoal	Charcoal	?	?	1340	60	1167	1263	1359	?	Faull 2006 - SCA via A. Gold	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	House Feature 02 post	Charcoal (or wood?)	?	?	1490	70	1293	1388	1525	?	Faull 2006 - SCA via A. Gold	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	House Feature 03, hearth	Charcoal	?	?	1160	60	956	1082	1185	?	Faull 2006 - SCA via A. Gold	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	Structure 1	Charcoal (or wood?)	?	?	1160	60	956	1082	1185	?	Delacorte 1999	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	Structure 2	Charcoal (or wood?)	?	?	1400	80	1171	1316	1445	?	Delacorte 1999	Cajon
INY-44	44	INY-3806/H	Surface deposit	Natural	Unit 02	Shell-f (freshwater)	80	90	12300	90	13112	13304	13491	Beta-066967	Gilreath 1995	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	Unit 02, charcoal concentration	Charcoal	80	90	1600	100	1307	1498	1709	Beta-038751	Delacorte et al.1993	Cajon
INY-44	44	INY-3806/H	Surface deposit	Cultural	Unit 02, composite charcoal	Charcoal	90	100	1160	90	930	1088	1273	Beta-041115	Delacorte et al.1993	Cajon
INY-45	45	INY, Panamint Valley	Lacustrine	Natural	Auger in Lake Hill Basin, base of black mat, transition from lake to spring	Shell-f (gastropod)	308	316	12575	40	13427	13574	13717	CAMS-?	Jayco et al. 2005, 2008	Rock outcrop
INY-45	45	INY, Panamint Valley	Lacustrine	Natural	Auger in Lake Hill Basin, lacustrine	Crustacean (ostracodes)	402	402	16735	50	18929	19058	19250	CAMS-?	Jayco et al. 2005, 2008	Rock outcrop
INY-46	46	INY-0002, Cottonwood Creek	Surface deposit	Cultural	Unit 05-L1, along Diaz Creek near confluence	Bone (unknown)	15	15	300	10	378	403	427	UCLA-1957	H. Riddell Jr.; RCJ 1983	Rock outcrop-Rubble land 2
INY-47	24	INY, Cottonwood Lakes	Lacustrine	Natural	Meadow behond tioga recessional moraine (i.e., Recess Peak?)	Wood	nr	nr	10640	160	12106	12601	12889	Beta-013569	Clark, Bierman and Larsen 1995	Cryumbrepts
INY-48	48	INY-2546, Panamint Dunes	Surface deposit	Cultural	exposed cremation	Charcoal	0	1	800	100	632	744	927	UCR-1755	McCarthy, UCR 1986; CRD 1996	BUNKERHILL
INY-49	31	INY, Cirque Peak	Surface deposit	Natural	Relict log of Foxtail pine 65 m above present timberline	Wood (pine)	0	1	3530	50	3688	3805	3929	UCLA-2463C	Scuderi 1987	Rock outcrop-Rubble land 2
INY-49	49	INY, Cirque Peak	Surface deposit	Natural	Relict log of Foxtail pine 68 m above present timberline	Wood (pine)	0	1	6300	300	6477	7157	7707	UCLA-2418A	Scuderi 1987	Rock outcrop-Rubble land 2
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Carbonate (tufa)	0	1	10970	70	10702	10980	11182	Beta-166890	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Carbonate (tufa)	0	1	11320	70	11187	11442	11749	Beta-166888	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Shell-f (Anodonta)	0	1	13340	40	14225	14583	14933	WW-4782	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Carbonate (tufa)	0	1	14805	40	15613	15984	16403	WW-4045	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Carbonate (tufa)	0	1	16320	90	17961	18286	18627	Beta-166887	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Shell-f (freshwater)	0	1	20680	120	23347	23754	24152	Beta-166889	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Keeler	Lacustrine	Natural	Near Keeler (east Owens Lake)	Shell-f (freshwater)	0	1	21300	100	24116	24468	24832	WW-4044	Bacon et al. 2006	Yermo 3
INY-50	50	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 13b, Trench 4	Charcoal	95	105	9300	60	10282	10494	10608	Beta-165600	Bacon, Pezzopane, and Burke 2003	Yermo 3
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	66	66	1460	70	-1	144	285	CAMS-21925	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	79	79	1560	90	40	241	429	CAMS-21926	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	99	99	1960	60	481	591	710	CAMS-21927	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	110	110	2000	60	499	619	747	CAMS-22055	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	131	131	2150	70	613	755	924	CAMS-21928	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	148	148	2950	70	1358	1563	1776	CAMS-21929	Benson et al. 1997, 2002	Playa

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	185	185	3510	60	2012	2224	2423	CAMS-21540	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	213	213	4000	50	2695	2829	3009	CAMS-22383	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	242	242	6290	50	5577	5709	5874	CAMS-20023	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	242	242	6320	50	5592	5741	5888	CAMS-22384	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	336	336	6900	50	6219	6366	6529	CAMS-22386	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	384	384	7110	60	6404	6594	6776	CAMS-22387	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	336	336	7140	60	6436	6629	6823	CAMS-20024	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	479	479	9170	60	8540	8747	8973	CAMS-20025	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	558	558	9520	60	9013	9217	9406	CAMS-20026	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	558	558	9540	60	9027	9243	9423	CAMS-22388	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	732	732	9680	60	9204	9398	9536	CAMS-20027	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	709	709	10050	50	9604	9845	10111	CAMS-59870	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	725	725	10870	50	10629	10863	11097	CAMS-59871	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	789	789	11520	60	11385	11804	12101	CAMS-20028	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	829	829	12230	50	12791	12863	12947	CAMS-59872	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	853	853	12650	70	12994	13179	13321	CAMS-20128	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	913	913	13270	70	13580	13779	13987	CAMS-21541	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	907	907	13360	70	13701	13868	14052	CAMS-20219	Benson et al. 1997, 2002	Playa
INY-51	51	INY, Owens Valley, Core OL84B	Lacustrine	Natural	Core OL84B	Organic Sediment (humate)	943	943	15020	10	15925	16273	16681	CAMS-20220	Benson et al. 1997, 2002	Playa
INY-52	52	INY, Owens Valley, Keeler	Buried deposit	Natural	Swansea (east Owens Lake)	Shell-f (freshwater)	?	?	9870	90	10069	10281	10520	Beta-158755	Bacon et al. 2006	Yermo 1
INY-52	52	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Swansea Bay (N), low barrier beach, sample 8	Shell-f (Anodonta)	0	1	10940	70	11294	11629	11947	Beta-052398	Orme and Orme 2008	Yermo 1
INY-52	52	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Swansea Bay (S), high barrier beach, sample 5	Shell-f (Anodonta)	0	1	12210	130	12948	13227	13463	Beta-051957	Orme and Orme 2008	Yermo 1
INY-52	52	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Swansea Bay (S), intermediate beach, sample 7	Shell-f (Anodonta)	0	1	11450	70	12350	12628	12813	Beta-054341	Orme and Orme 2008	Yermo 1
INY-52	52	INY-6503, Keeler Dunes	Surface deposit	Cultural	?	Charcoal	0	10	290	50	281	376	490	Beta-185470	Halford and Carpenter 2005	Playa
INY-52	52	INY-6503, Keeler Dunes	Surface deposit	Cultural	Carin 5, Unit 01/2	Charcoal	53	53	520	40	503	538	562	Beta-185469	Halford and Carpenter 2005	Playa
INY-53	53	INY, Slate Canyon, Keeler	Surface deposit	Natural	Fault fissure in south wall of natural wash exposure	Organic Sediment	180	190	9502	75	10579	10820	11100	WW-5327 L	Bacon, Jayko, and McGeehin 2005	Yermo 2
INY-53	53	INY, Slate Canyon, Keeler	Surface deposit	Natural	Fault fissure in south wall of natural wash exposure	Organic Sediment	180	190	12460	170	14014	14539	15094	WW-5327 H	Bacon, Jayko, and McGeehin 2005	Yermo 2
INY-53	53	INY, Slate Canyon, Keeler	Surface deposit	Natural	South wall of natural wash exposure, Inyo Mtn Fault	Organic Sediment	180	190	11010	100	12832	12957	13113	WW-5328 L	Bacon, Jayko, and McGeehin 2005	Yermo 2
INY-53	53	INY, Slate Canyon, Keeler	Surface deposit	Natural	South wall of natural wash exposure, Inyo Mtn Fault	Organic Sediment	95	105	11346	95	13059	13219	13401	WW-5329 L	Bacon, Jayko, and McGeehin 2005	Yermo 2
INY-53	53	INY, Slate Canyon, Keeler	Surface deposit	Natural	South wall of natural wash exposure, Inyo Mtn Fault	Organic Sediment	95	105	15690	450	17853	18932	19863	WW-5329 H	Bacon, Jayko, and McGeehin 2005	Yermo 2
INY-53	53	INY, Slate Canyon, Keeler	Surface deposit	Natural	South wall of natural wash exposure, Inyo Mtn Fault	Organic Sediment	180	190	15940	580	17774	19159	20359	WW-5328 H	Bacon, Jayko, and McGeehin 2005	Yermo 2
INY-54	54	INY, Owens Valley, Dolomite Site	Lacustrine	Natural	From silty sand below 50 cm of sandy overburden	Shell-f (Anodonta)	45	55	11400	60	12290	12538	12789	Beta-067673	Koehler 1995	Dune land
INY-54	54	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Swansea Bay (N), gravel pit, death bed, sample 10	Shell-f (gastropod)	60	80	9580	100	9575	9891	10168	Beta-058386	Orme and Orme 2008	Cajon
INY-54	54	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Swansea Bay (N), gravel pit, deep water silts, sample 3 (perennial water species)	Shell-f (gastropod)	280	300	19670	260	21538	22365	23200	Beta-061076	Orme and Orme 2008	Cajon
INY-54	54	INY, Owens Valley, Swansea Bay	Lacustrine	Natural	Swansea Bay (N), gravel pit, low barrier beach, sample 9	Shell-f (Anodonta)	100	120	10840	80	11204	11479	11759	Beta-082063	Orme and Orme 2008	Cajon
INY-55	55	INY, Lubkin Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	2800	100	2747	2931	3169	Beta-055881	Koehler and Anderson 1995	Lithic Torriorthents
INY-55	55	INY, Lubkin Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	5090	90	5606	5823	6001	Beta-055879	Koehler and Anderson 1995	Lithic Torriorthents
INY-55	55	INY, Lubkin Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	5610	60	6287	6390	6504	Beta-054712	Koehler and Anderson 1995	Lithic Torriorthents
INY-55	55	INY, Lubkin Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	7840	100	8445	8672	8983	Beta-055880	Koehler and Anderson 1995	Lithic Torriorthents
INY-55	55	INY, Lubkin Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	7990	50	8696	8860	9007	Beta-054713	Koehler and Anderson 1995	Lithic Torriorthents
INY-55	55	INY, Lubkin Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	9460	50	10567	10703	10804	Beta-054714	Koehler and Anderson 1995	Lithic Torriorthents
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Feat. 5, pit, U-14	Charcoal	80	90	760	100	551	710	833	Beta-012664	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Feat. 5, U-14	Charcoal	60	65	960	100	687	867	1059	Beta-012663	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Feat. 7, U-22B	Charcoal	32	45	830	100	640	770	935	Beta-020525	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 1, 2N	Charcoal	61	61	470	70	422	508	565	Beta-012661	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 1, 5N	Charcoal	63	65	310	70	269	379	509	Beta-012662	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 10, 1W	Charcoal	58	58	390	90	282	422	556	Beta-012667	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 10, 4W	Charcoal	70	70	330	60	289	392	504	Beta-012668	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 11, U-3	Charcoal	55	55	1220	70	1047	1146	1285	Beta-012660	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 11, U-3	Charcoal	48	48	1600	70	1346	1488	1628	Beta-012659	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 12, U-42	Charcoal	73	73	1530	80	1293	1431	1569	Beta-020519	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 12, U-42	Charcoal	75	75	1860	70	1613	1794	1949	Beta-020518	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 13, NWQ	Charcoal	38	40	710	70	544	663	744	Beta-022294	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 14, U-20	Charcoal	60	63	1840	80	1567	1772	1934	Beta-020516	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 14, U22B	Charcoal	55	60	1650	100	1347	1555	1742	Beta-020697	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 15, SWQ	Charcoal	69	71	1460	60	1284	1359	1423	Beta-022293	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 5, 4N	Charcoal	47	57	410	80	296	441	553	Beta-020699	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 7, 3N	Charcoal	35	40	480	60	429	519	565	Beta-012665	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 8, 2N, upper floor	Charcoal	32	35	270	70	256	329	501	Beta-020523	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 8, 3N, lower floor	Charcoal	35	51	470	50	432	514	559	Beta-020524	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	Structure 9, 4N	Charcoal	51	53	180	60	55	172	307	Beta-020521	Basgall and McGuire 1988	Lubkin
INY-55	55	INY-0030, Lubkin Creek	Surface deposit	Cultural	U-35, sub-midden red sand/clay stratum	Charcoal	105	115	870	230	496	829	1285	Beta-020526	Basgall and McGuire 1988	Lubkin

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-56	56	INY, Owens Valley, north	Lacustrine	Natural	Northern Owens Lake	Shell-f (freshwater)	0	1	11400	60	12290	12538	12789	?	Koehler, 1995; Bacon et al. 2006	Yermo 1
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	900	130	638	830	1073	GX-07809	Wells and Woodcock 1985	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	1990	160	1601	1955	2335	GX-07808	Wells and Woodcock 1985	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	9090	300	9534	10246	11092	GX-07805	Woodcock, 1986	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	9455	310	9887	10757	11752	GX-07804	Woodcock, 1986	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	10230	320	11088	11943	12844	GX-07812	Woodcock, 1986	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	11210	380	12230	13127	13897	GX-07806	Woodcock, 1986	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	13060	460	14029	15412	16665	GX-07807	Woodcock, 1986	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	17130	550	19194	20340	21778	GX-07810	Woodcock, 1986	Rock outcrop
INY-57	57	INY, Death Valley	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	19550	650	21778	23333	25329	GX-07811	Woodcock, 1986	Rock outcrop
INY-58	58	INY, Haystack Mountain	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	14870	130	17631	18153	18610	Beta-039274	Koehler and Anderson 1995	Lithic Torriorthents
INY-58	58	INY, Haystack Mountain	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	16010	330	18727	19223	19844	Beta-036732	Koehler and Anderson 1995	Lithic Torriorthents
INY-58	58	INY, Haystack Mountain	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	17680	150	20457	20872	21344	Beta-035503	Koehler and Anderson 1995	Lithic Torriorthents
INY-58	58	INY, Haystack Mountain	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	20960	240	24557	25191	25790	Beta-034833	Koehler and Anderson 1995	Lithic Torriorthents
INY-58	58	INY, Haystack Mountain	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	22900	270	26826	27494	28162	Beta-039273	Koehler and Anderson 1995	Lithic Torriorthents
INY-58	58	INY, Haystack Mountain	Surface deposit	Natural	Packrat midden, HAM1A	Packrat Midden	0	1	20590	210	24159	24722	25404	Beta-040000	Koehler and Anderson 1995	Lithic Torriorthents
INY-58	58	INY, Owens Valley, Lone Pine	Buried deposit?	Natural	From Holocene-age fan, Qg5, SW of Lone Pine	Charcoal	nr	nr	4030	60	4401	4516	4659	TO-1666	Bierman et al. 1995; Bacon et al. 2006	Goodale
INY-58	58	INY, Owens Valley, Lone Pine	Surface deposit	Natural	From Holocene-age fan, Qg5, SW of Lone Pine	Charcoal	nr	nr	610	60	520	601	673	QL-4361	Bierman et al. 1995	Goodale
INY-59	59	INY, Corsair	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	8700	80	9528	9689	9929	Beta-059783	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	2830	90	2762	2961	3169	Beta-030023	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	3720	80	3843	4073	4297	Beta-033427	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	7700	60	8400	8489	8591	Beta-054715	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	7840	70	8452	8646	8796	Beta-033103	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	9540	100	10641	10885	11172	Beta-030156	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	13350	110	15396	15846	16317	Beta-028115	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	17760	120	20565	20970	21386	Beta-030776	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	19070	190	22242	22628	23320	Beta-030024	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	20310	220	23729	24331	24984	Beta-033428	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	21130	480	24290	25268	26000	Beta-033104	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	25660	520	29586	30836	32086	Beta-030775	Koehler and Anderson 1995	Movieflat
INY-59	59	INY, Two Goblin	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	31450	510	35750	36824	37898	Beta-029078	Koehler and Anderson 1995	Movieflat
INY-60	60	INY, Owens River Bluff	Buried soil	Natural	2Cu, carbon layer, S bank of T3 terrace below sand layer mapped as Mazourka-Eclipse; same age as lithofacies 4a of Bacon	Soil (SOM)	150	160	12650	220	14292	14873	15232	OS-72826	Meyer, Rosenthal, and Young (in progress)	Mazourka
INY-60	60	INY, Owens River Bluff	Buried marsh	Natural	lithofacies 4b	Organic Sediment	290	310	9560	40	10729	10932	11092	Beta-163553	Bacon, Pezzopane, and Burke 2003	Mazourka
INY-60	60	INY, Owens River Bluff	Buried marsh	Natural	lithofacies 4b	Organic Sediment	290	310	10480	40	12338	12499	12673	Beta-163552	Bacon, Pezzopane, and Burke 2003	Mazourka
INY-60	60	INY, Owens River Bluff	Buried marsh	Natural	lithofacies 4b, west bank Owens River ~600 m ESE of Quaker	Charcoal	nr	nr	9990	40	11269	11454	11622	Beta-163551	Bacon, Pezzopane, and Burke 2003	Mazourka
INY-60	60	INY, Owens Valley, Alabama Hills	Lacustrine	Natural	Lithoid tufa from beach gravels near top of shoreline deposit N of Lone Pine; approximate highstand age, max. age of Yermo fan surface	Carbonate (tufa)	0	1	21000	130	22820	23477	23904	USGS-609	Wagner et al. 1981; Fullerton 1986; Lubetkin and Clark, 1988; Bacon et al. 2006	Yermo 2
INY-60	60	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 4a, Pit 4	Charcoal	310	320	12580	60	14402	14798	15117	Beta-168600	Bacon, Pezzopane, and Burke 2003	Division
INY-60	60	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 4a, Pit 4	Charcoal	310	320	12590	60	14424	14817	15127	Beta-168601	Bacon, Pezzopane, and Burke 2003	Division
INY-60	60	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 4a, Pit 4	Charcoal	310	320	12730	60	14747	15032	15273	Beta-168602	Bacon, Pezzopane, and Burke 2003	Division
INY-60	60	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 4b, Trench 4	Organic Sediment	195	205	9160	50	10230	10328	10435	Beta-163556	Bacon, Pezzopane, and Burke 2003	Division
INY-60	60	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 4b, Trench 4	Organic Sediment	195	205	9680	50	11065	11109	11218	Beta-163557	Bacon, Pezzopane, and Burke 2003	Division
INY-60	60	INY, Owens Valley, Quaker	Buried marsh	Natural	lithofacies 4b, Trench 4	Charcoal	195	205	9920	50	11225	11325	11412	Beta-163558	Bacon, Pezzopane, and Burke 2003	Division
INY-60	60	MNO-3465, Sherwin Grade	Surface volcanic	Cultural	Feature 01, hearth	Charcoal?	nr	nr	10	60	14	99	147	Beta-161513	Eerkens and King 2002	Division
INY-61	61	INY, Owens Valley, Alabama Gates	Buried marsh	Natural	lithofacies 4b, Trench 2	Organic Sediment	265	275	9030	60	10116	10203	10293	Beta-163555	Bacon, Pezzopane, and Burke 2003	Pokonahbe
INY-61	61	INY, Owens Valley, Alabama Gates	Buried marsh	Natural	lithofacies 4b, Trench 2	Charcoal	265	275	9060	40	10179	10224	10260	Beta-163554	Bacon, Pezzopane, and Burke 2003	Pokonahbe
INY-61	61	INY, Owens Valley, Alabama Gates	Buried marsh	Natural	lithofacies 4b, Trench 3	Organic Sediment	110	120	10190	70	11601	11881	12150	USGS-2339	Beanland and Clark, 1994; Bacon et al. 2003	Pokonahbe
INY-61	61	INY-0328/H, Owens Valley	Buried lacustrine	Natural	Locus D, BHT 1, organic soil, Stratum Iva	Organic Sediment (bulk)	52	80	9440	150	8670	9107	9463	Beta-055681	Delacorte 1999	Mazourka
INY-61	61	INY-0328/H, Owens Valley	Surface deposit	Cultural	Locus D, S30/W7, Feature 02, rock concentration, hearth	Charcoal	10	20	290	50	281	376	490	Beta-112087	Delacorte 1999	Mazourka
INY-61	61	INY-0328/H, Owens Valley	Surface deposit	Cultural	Locus?, Feature 02, rock concentration, hearth	Charcoal	nr	nr	1280	80	1051	1199	1335	?	Faull 2006 - SCA via A. Gold	Mazourka
INY-61	61	INY-2750	Surface deposit	Cultural	Locus A, N121/W62.5, Feature 06	Charcoal	40	42	1330	70	1074	1247	1353	Beta-113022	Delacorte 1999	Yermo 2
INY-61	61	INY-2750	Surface deposit	Cultural	Locus B, Feature 01	Shell-f (Anodonta)	?	?	1650	70	628	753	910	?	Faull 2006 - SCA via A. Gold	Yermo 2
INY-61	61	INY-2750	Surface deposit	Cultural	N121/W62.5	Shell-f (Anodonta)	0	10	920	60	-1	107	243	Beta-055684	Delacorte 1999	Yermo 2
INY-61	61	INY-3778	Surface deposit	Cultural	S8/W8	Charcoal	40	50	80	70	7	122	151	Beta-113023	Delacorte 1999	Pokonahbe
INY-61	61	INY-3778	Surface deposit	Cultural	S9/E4	Charcoal	30	40	200	80	-4	192	332	Beta-113025	Delacorte 1999	Pokonahbe
INY-62	62	INY, Owens Valley, Manzanar Site	Surface deposit	Cultural	MANZ 1993 A-2 Unit 24	Charcoal	20	40	470	60	427	512	562	Beta-092763	Burton et al. 1996	Cartago
INY-62	62	INY, Owens Valley, Manzanar Site	Surface deposit	Cultural	MANZ 1993 A-2 Unit 24	Charcoal	30	40	1430	90	1177	1344	1526	Beta-069482	Burton et al. 1996	Cartago
INY-62	62	INY, Owens Valley, Manzanar Site	Surface deposit	Cultural	MANZ 1993 A-2, Unit 24	Charcoal	20	30	1050	90	765	969	1176	Beta-069481	Burton et al. 1996	Cartago
INY-62	62	INY-4862, Manzanar	Surface deposit	Cultural	composite charcoal (Locus A U24)**	Charcoal	0	60	1050	90	765	969	1176	?	Faull 2006 - SCA via A. Gold	Cartago
INY-62	62	INY-4862, Manzanar	Surface deposit	Cultural	housefloor (LocusA U24) MANZ 1993 A-2	Charcoal (or wood?)	0	60	1430	90	1177	1344	1526	?	Faull 2006 - SCA via A. Gold	Cartago
INY-62	62	INY-4899/H	Surface deposit	Cultural	charcoal at base of deposit (Locus B EU-20)	Charcoal	?	?	710	60	617	664	737	?	Faull 2006 - SCA via A. Gold	Goodale
INY-62	62	INY-4903, Bairs Creek	Surface deposit	Cultural	charcoal from level (Locus A)	Charcoal	?	?	1040	50	900	957	1062	?	Faull 2006 - SCA via A. Gold	Morey family
INY-62	62	INY-4903, Bairs Creek	Surface deposit	Cultural	housefloor Hearth (Locus 10 F10)	Charcoal	?	?	1780	70	1547	1704	1866	?	Faull 2006 - SCA via A. Gold	Morey family
INY-62	62	INY-4903, Bairs Creek	Surface deposit	Cultural	remnant housefloor (Locus B EU-15)	Charcoal (or wood?)	0	30	1450	60	1278	1351	1422	?	Faull 2006 - SCA via A. Gold	Morey family
INY-62	62	INY-4903, Bairs Creek	Surface deposit	Cultural	remnant housefloor (Locus B EU-15)	Charcoal (or wood?)	0	30	1500	50	1305	1388	1447	?	Faull 2006 - SCA via A. Gold	Morey family
INY-62	62	INY-5207	?	Cultural	Structure 1	Charcoal (or wood?)	?	?	270	60	266	335	492	?	Delacorte 1999	Goodale
INY-63	63	INY-0222, Colville	Surface deposit	Cultural	Unit C-8	Charcoal	15	30	1910	60	1714	1852	1954	UCLA-1955	Meighan/Baumhoff; RCJ 1983	THERIOT

Appendix B. Radiocarbon Database

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-64	64	INY, Death Valley/Titus Canyon	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	9680	300	10238	11066	12047	UCR-0347	Wells and Woodcock 1985	Rock outcrop
INY-65	65	INY-5397/H	Surface deposit	Cultural	Locus 1, N2/W5, Feature 01, bulk carbon	Charcoal	0	10	640	50	545	605	671	Beta-154723	Basgall et al. 2002	Inyo
INY-65	65	INY-5761, Independence	Buried deposit	Cultural	Locus 2, S8/W62.5, Feature 02, housefloor	Charcoal	88	95	1330	60	1166	1251	1348	Beta-154727	Basgall et al. 2002	Shabbell
INY-65	65	INY-5761, Independence	Buried deposit	Cultural	S12.5/W62.5, Feature 02, housefloor	Charcoal	85	100	1500	40	1307	1383	1422	Beta-154726	Basgall et al. 2002	Shabbell
INY-66	66	INY, Death Valley/Titus Canyon	Surface lacustrine	Natural	Stratigraphic unit QLM4	Carbonate (tufa)	?	?	13450	80	14288	14793	15129	?	Klinger 2001	CARRIZO
INY-67	67	INY-5759	Surface deposit	Cultural	N3/E16	Charcoal	0	10	240	70	244	277	478	Beta-154725	Basgall et al. 2002	Tinemaha
INY-67	67	INY-5763	Surface deposit	Cultural	Locus 1, S80/W30, Feature 02, burned rock	Charcoal	8	12	820	70	665	750	835	Beta-154728	Basgall et al. 2002	Lubkin
INY-67	67	INY-5764	Surface deposit	Cultural	N4/W5.5	Charcoal	3	20	250	50	261	298	464	Beta-154729	Basgall et al. 2002	Lubkin
INY-67	67	INY-5764	Surface deposit	Cultural	S18/W98.5	Charcoal	20	50	80	50	11	113	150	Beta-154731	Basgall et al. 2002	Lubkin
INY-67	67	INY-5764	Surface deposit	Cultural	S9.5/W134.5	Charcoal	16	30	50	60	11	110	149	Beta-154732	Basgall et al. 2002	Lubkin
INY-68	68	INY-5875	Surface deposit	Cultural	S148/E38.5	Charcoal	30	35	150	40	58	151	284	Beta-156155	Zeanah and Leigh 2002	Cartago
INY-68	68	INY-5875	Buried deposit	Cultural	S39/E57	Charcoal	28	38	190	70	-4	180	319	Beta-156156	Zeanah and Leigh 2002	Cartago
INY-69	69	INY-5276	Buried deposit	Cultural	N4/W5.5	Charcoal	126	136	3390	50	3547	3636	3728	Beta-156160	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Surface deposit	Cultural	N4/W7	Charcoal	20	30	280	40	282	370	465	Beta-156161	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Buried deposit	Cultural	N4/W7	Charcoal	136	146	3290	40	3442	3519	3630	Beta-156162	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Buried deposit	Cultural	S2/W4	Charcoal	107	110	3390	40	3554	3636	3723	Beta-156158	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Buried deposit	Cultural	S5/W75	Charcoal	50	64	3200	40	3349	3421	3484	Beta-156157	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Surface deposit	Cultural	S6/W76	Charcoal	16	30	2180	40	2103	2217	2327	Beta-156159	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5876	Buried deposit	Cultural	N88/E4.5, charcoal lens	Charcoal	30	60	180	60	55	172	307	Beta-153499	Zeanah and Leigh 2002	Cartago
INY-70	70	INY-5877	Buried soil	Cultural	N40.5/E24.5, Feature 1	Charcoal	20	30	530	60	497	554	654	Beta-156163	Zeanah and Leigh 2002	Taboose
INY-71	71	INY-5275/H	Surface deposit	Cultural	N24/W73.5	Bone (collagen)	0	20	3070	50	3144	3288	3391	Beta-158024	Zeanah and Leigh 2002	Hesperia
INY-71	71	INY-5275/H	Surface deposit	Cultural	N30.5/W93	Bone (collagen)	30	40	560	70	504	586	663	Beta-158023	Zeanah and Leigh 2002	Hesperia
INY-71	71	INY-5280	Surface deposit	Cultural	N6.5/E2, F-1	Charcoal	0	80	50	40	24	96	141	Beta-153498	Zeanah and Leigh 2002	Pokonahbe
INY-71	71	INY-5281	Surface deposit	Cultural	N0/W63, Feature 04	Charcoal	20	30	1280	40	1167	1221	1292	Beta-156167	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5281	Surface deposit	Cultural	N25/W45, Feature 6	Charcoal	23	30	520	50	497	543	567	Beta-156164	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5281	Buried soil	Cultural	N54/W59, Feature 5, Strat. III, charcoal smear	Charcoal	40	50	2550	40	2489	2628	2643	Beta-156165	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5281	Surface deposit	Cultural	S3/W90, Feature 02	Charcoal	20	30	1590	40	1389	1471	1557	Beta-156166	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5285/H	Surface deposit	Cultural	N0/W5, Feature 01	Charcoal	60	68	1210	60	1049	1138	1275	Beta-156168	Zeanah and Leigh 2002	Taboose
INY-71	71	INY-5873/H	Buried soil	Cultural	N7/E17.5	Bone (artiodactyl)	60	70	2050	40	1922	2015	2122	Beta-156154	Zeanah and Leigh 2002	Taboose
INY-72	72	INY-3769	Surface deposit	Cultural	197° @ 32.3M	Charcoal	0	1	250	70	252	295	489	Beta-112084	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	Locus 5, Feature 01, Structure 1, housefloor	Charcoal (or wood?)	?	?	780	110	620	729	923	?	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	Locus 6, Feature 01, housefloor	Charcoal (or wood?)	?	?	1180	80	956	1107	1276	?	Faull 2006 - SCA via A. Gold	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	N0.5/E3.5	Charcoal	40	50	180	60	55	172	307	Beta-055690	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	N1/E8	Charcoal	30	40	270	60	266	335	492	Beta-112085	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	S15.5/E9.5	Charcoal	0	10	110	70	-4	132	153	Beta-112083	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	Structure 1	Charcoal	nr	nr	430	40	428	491	536	Beta-112086	Delacorte 1999	Hesperia
INY-72	72	INY-5273/H	Buried deposit	Cultural	S719/E24	Charcoal	60	70	400	40	424	461	518	Beta-158021	Zeanah and Leigh 2002	Shondow
INY-72	72	INY-5273/H	Buried deposit	Cultural	S720.5/E23	Charcoal	60	80	360	90	269	399	544	Beta-158022	Zeanah and Leigh 2002	Shondow
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M2, S1/E10	Charcoal	20	30	390	80	289	425	543	UCR-1558	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M2, S8/E5	Charcoal	10	20	390	90	282	422	556	UCR-1559	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M2, Struc 7 (L3)	Charcoal	nr	nr	880	130	636	816	1059	UCR-1557	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M3, N3/E5	Bone (unknown)	30	40	1940	100	1689	1890	2143	UCR-1561	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M3, Struc 16	Charcoal	20	30	425	100	285	449	567	UCR-1560	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-74	74	INY, Death Valley, Ubehebe	Buried deposit	Natural	sand bed in gravel pit, Big Pine Rd, 1.7 miles N of Junction, below airfall Ubehebe Crater tephra	Charcoal (Atriplex)	33	35	210	30	144	180	216	nr	Klinger in Machette et al. 2001	BLACKMOUNT
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 01, rock concentration	Charcoal	0	10	1300	70	1063	1218	1330	Beta-143640	Burton, Bloomer, and Johnson 2000	Arizo
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 02, Locus 2, rock concentration	Charcoal	0	10	650	50	547	609	675	Beta-143641	Burton, Bloomer, and Johnson 2000	Arizo
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 03, rock concentration	Charcoal	0	10	1300	60	1074	1224	1306	Beta-143642	Burton, Bloomer, and Johnson 2000	Arizo
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 04, rock concentration	Charcoal	0	13	1890	60	1698	1830	1952	Beta-143643	Burton, Bloomer, and Johnson 2000	Arizo
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Hurd Peak-G, lateral moraine	Organic (aeolian biome)	nr	nr	1330	60	1166	1251	1348	CAMS-11532	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Hurd Peak-G, lateral moraine	Organic (aeolian biome)	nr	nr	1460	60	1284	1359	1423	TO-1628	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 1-I, sample from inner terminal moraine loop	Organic (aeolian biome)	nr	nr	140	50	54	142	283	Beta-067935	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 1-I, sample from inner terminal moraine loop	Wood	nr	nr	160	60	56	159	295	Beta-067091	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 2-H, sample from outer terminal moraine loop	Wood	nr	nr	560	80	482	583	675	Beta-067098	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 2-H, sample from outer terminal moraine loop	Organic (aeolian biome)	nr	nr	600	60	526	600	666	CAMS-12413	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Treaure Lakes-F, terminal moraine	Organic (aeolian biome)	nr	nr	100	60	8	124	280	CAMS-12412	Dorn 1996	Typic Cryorthents 2
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Treaure Lakes-F, terminal moraine	Organic (aeolian biome)	nr	nr	2350	60	2300	2402	2543	CAMS-12411	Dorn 1996	Typic Cryorthents 2
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Treaure Lakes-F, terminal moraine	Organic (aeolian biome)	nr	nr	2660	60	2703	2782	2896	CAMS-12410	Dorn 1996	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1	Organic Sediment (gyttja)	150	151	10120	80	11391	11735	12047	CAMS-BL-C-13G	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1	Charcoal	150	151	10170	170	11245	11836	12397	CAMS-BL-C-13A	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1	Organic Sediment (gyttja)	160	161	10880	60	12807	12864	12930	CAMS-BL-C-14	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1, cirque tarn upstream from Recess Peak moraines, upper Middle Fork of Bishop Creek	Organic sediment (gyttja)	nr	nr	11190	70	12943	13092	13219	CAMS-11382	Clark, Bierman and Larsen 1995	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Wood (chip)	40	40	7050	70	7722	7878	8000	CAMS-BL-C-5	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Organic Sediment (gyttja)	83	83	7890	60	8583	8722	8981	CAMS-BL-C-12	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Wood (twig)	83	83	7900	60	8591	8738	8818	CAMS-BL-C-11	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Wood (chip)	95	95	8490	60	9405	9497	9550	CAMS-BL-C-3	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Charcoal	107	107	9450	50	10557	10688	10796	CAMS-BL-C-2	Clark and Gillespie 1997	Typic Cryorthents 2

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-64	64	INY, Death Valley/Titus Canyon	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	9680	300	10238	11066	12047	UCR-0347	Wells and Woodcock 1985	Rock outcrop
INY-65	65	INY-5397/H	Surface deposit	Cultural	Locus 1, N2/W5, Feature 01, bulk carbon	Charcoal	0	10	640	50	545	605	671	Beta-154723	Basgall et al. 2002	Inyo
INY-65	65	INY-5761, Independence	Buried deposit	Cultural	Locus 2, S8/W62.5, Feature 02, housefloor	Charcoal	88	95	1330	60	1166	1251	1348	Beta-154727	Basgall et al. 2002	Shabbell
INY-65	65	INY-5761, Independence	Buried deposit	Cultural	S12.5/W62.5, Feature 02, housefloor	Charcoal	85	100	1500	40	1307	1383	1422	Beta-154726	Basgall et al. 2002	Shabbell
INY-66	66	INY, Death Valley/Titus Canyon	Surface lacustrine	Natural	Stratigraphic unit QLM4	Carbonate (tufa)	?	?	13450	80	14288	14793	15129	?	Klinger 2001	CARRIZO
INY-67	67	INY-5759	Surface deposit	Cultural	N3/E16	Charcoal	0	10	240	70	244	277	478	Beta-154725	Basgall et al. 2002	Tinemaha
INY-67	67	INY-5763	Surface deposit	Cultural	Locus 1, S80/W30, Feature 02, burned rock	Charcoal	8	12	820	70	665	750	835	Beta-154728	Basgall et al. 2002	Lubkin
INY-67	67	INY-5764	Surface deposit	Cultural	N4/W5.5	Charcoal	3	20	250	50	261	298	464	Beta-154729	Basgall et al. 2002	Lubkin
INY-67	67	INY-5764	Surface deposit	Cultural	S18/W98.5	Charcoal	20	50	80	50	11	113	150	Beta-154731	Basgall et al. 2002	Lubkin
INY-67	67	INY-5764	Surface deposit	Cultural	S9.5/W134.5	Charcoal	16	30	50	60	11	110	149	Beta-154732	Basgall et al. 2002	Lubkin
INY-68	68	INY-5875	Surface deposit	Cultural	S148/E38.5	Charcoal	30	35	150	40	58	151	284	Beta-156155	Zeanah and Leigh 2002	Cartago
INY-68	68	INY-5875	Buried deposit	Cultural	S39/E57	Charcoal	28	38	190	70	-4	180	319	Beta-156156	Zeanah and Leigh 2002	Cartago
INY-69	69	INY-5276	Buried deposit	Cultural	N4/W5.5	Charcoal	126	136	3390	50	3547	3636	3728	Beta-156160	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Surface deposit	Cultural	N4/W7	Charcoal	20	30	280	40	282	370	465	Beta-156161	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Buried deposit	Cultural	N4/W7	Charcoal	136	146	3290	40	3442	3519	3630	Beta-156162	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Buried deposit	Cultural	S2/W4	Charcoal	107	110	3390	40	3554	3636	3723	Beta-156158	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Buried deposit	Cultural	S5/W75	Charcoal	50	64	3200	40	3349	3421	3484	Beta-156157	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5276	Surface deposit	Cultural	S6/W76	Charcoal	16	30	2180	40	2103	2217	2327	Beta-156159	Zeanah and Leigh 2002	Winerton
INY-69	69	INY-5876	Buried deposit	Cultural	N88/E4.5, charcoal lens	Charcoal	30	60	180	60	55	172	307	Beta-153499	Zeanah and Leigh 2002	Cartago
INY-70	70	INY-5877	Buried soil	Cultural	N40.5/E24.5, Feature 1	Charcoal	20	30	530	60	497	554	654	Beta-156163	Zeanah and Leigh 2002	Taboose
INY-71	71	INY-5275/H	Surface deposit	Cultural	N24/W73.5	Bone (collagen)	0	20	3070	50	3144	3288	3391	Beta-158024	Zeanah and Leigh 2002	Hesperia
INY-71	71	INY-5275/H	Surface deposit	Cultural	N30.5/W93	Bone (collagen)	30	40	560	70	504	586	663	Beta-158023	Zeanah and Leigh 2002	Hesperia
INY-71	71	INY-5280	Surface deposit	Cultural	N6.5/E2, F-1	Charcoal	0	80	50	40	24	96	141	Beta-153498	Zeanah and Leigh 2002	Pokonahbe
INY-71	71	INY-5281	Surface deposit	Cultural	N0/W63, Feature 04	Charcoal	20	30	1280	40	1167	1221	1292	Beta-156167	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5281	Surface deposit	Cultural	N25/W45, Feature 6	Charcoal	23	30	520	50	497	543	567	Beta-156164	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5281	Buried soil	Cultural	N54/W59, Feature 5, Strat. III, charcoal smear	Charcoal	40	50	2550	40	2489	2628	2643	Beta-156165	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5281	Surface deposit	Cultural	S3/W90, Feature 02	Charcoal	20	30	1590	40	1389	1471	1557	Beta-156166	Zeanah and Leigh 2002	Cartago
INY-71	71	INY-5285/H	Surface deposit	Cultural	N0/W5, Feature 01	Charcoal	60	68	1210	60	1049	1138	1275	Beta-156168	Zeanah and Leigh 2002	Taboose
INY-71	71	INY-5873/H	Buried soil	Cultural	N7/E17.5	Bone (artiodactyl)	60	70	2050	40	1922	2015	2122	Beta-156154	Zeanah and Leigh 2002	Taboose
INY-72	72	INY-3769	Surface deposit	Cultural	197° @ 32.3M	Charcoal	0	1	250	70	252	295	489	Beta-112084	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	Locus 5, Feature 01, Structure 1, housefloor	Charcoal (or wood?)	?	?	780	110	620	729	923	?	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	Locus 6, Feature 01, housefloor	Charcoal (or wood?)	?	?	1180	80	956	1107	1276	?	Faull 2006 - SCA via A. Gold	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	N0.5/E3.5	Charcoal	40	50	180	60	55	172	307	Beta-055690	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	N1/E8	Charcoal	30	40	270	60	266	335	492	Beta-112085	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	S15.5/E9.5	Charcoal	0	10	110	70	-4	132	153	Beta-112083	Delacorte 1999	Hesperia
INY-72	72	INY-3769	Surface deposit	Cultural	Structure 1	Charcoal	nr	nr	430	40	428	491	536	Beta-112086	Delacorte 1999	Hesperia
INY-72	72	INY-5273/H	Buried deposit	Cultural	S719/E24	Charcoal	60	70	400	40	424	461	518	Beta-158021	Zeanah and Leigh 2002	Shondow
INY-72	72	INY-5273/H	Buried deposit	Cultural	S720.5/E23	Charcoal	60	80	360	90	269	399	544	Beta-158022	Zeanah and Leigh 2002	Shondow
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M2, S1/E10	Charcoal	20	30	390	80	289	425	543	UCR-1558	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M2, S8/E5	Charcoal	10	20	390	90	282	422	556	UCR-1559	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M2, Struc 7 (L3)	Charcoal	nr	nr	880	130	636	816	1059	UCR-1557	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M3, N3/E5	Bone (unknown)	30	40	1940	100	1689	1890	2143	UCR-1561	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-73	73	INY-1700, Crater Middens	Surface deposit	Cultural	M3, Struc 16	Charcoal	20	30	425	100	285	449	567	UCR-1560	Bettinger 1989; UCR 1986 per CRD 1996	Whitewolf family
INY-74	74	INY, Death Valley, Ubehebe	Buried deposit	Natural	sand bed in gravel pit, Big Pine Rd, 1.7 miles N of Junction, below airfall Ubehebe Crater tephra	Charcoal (Atriplex)	33	35	210	30	144	180	216	nr	Klinger in Machette et al. 2001	BLACKMOUNT
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 01, rock concentration	Charcoal	0	10	1300	70	1063	1218	1330	Beta-143640	Burton, Bloomer, and Johnson 2000	Arizo
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 02, Locus 2, rock concentration	Charcoal	0	10	650	50	547	609	675	Beta-143641	Burton, Bloomer, and Johnson 2000	Arizo
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 03, rock concentration	Charcoal	0	10	1300	60	1074	1224	1306	Beta-143642	Burton, Bloomer, and Johnson 2000	Arizo
INY-75	75	INY-2489, Eureka Dunes	Surface deposit	Cultural	Feature 04, rock concentration	Charcoal	0	13	1890	60	1698	1830	1952	Beta-143643	Burton, Bloomer, and Johnson 2000	Arizo
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Hurd Peak-G, lateral moraine	Organic (aeolian biome)	nr	nr	1330	60	1166	1251	1348	CAMS-11532	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Hurd Peak-G, lateral moraine	Organic (aeolian biome)	nr	nr	1460	60	1284	1359	1423	TO-1628	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 1-I, sample from inner terminal moraine loop	Organic (aeolian biome)	nr	nr	140	50	54	142	283	Beta-067935	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 1-I, sample from inner terminal moraine loop	Wood	nr	nr	160	60	56	159	295	Beta-067091	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 2-H, sample from outer terminal moraine loop	Wood	nr	nr	560	80	482	583	675	Beta-067098	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Mt. Johnson 2-H, sample from outer terminal moraine loop	Organic (aeolian biome)	nr	nr	600	60	526	600	666	CAMS-12413	Dorn 1996	Typic Cryorthents
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Treaure Lakes-F, terminal moraine	Organic (aeolian biome)	nr	nr	100	60	8	124	280	CAMS-12412	Dorn 1996	Typic Cryorthents 2
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Treaure Lakes-F, terminal moraine	Organic (aeolian biome)	nr	nr	2350	60	2300	2402	2543	CAMS-12411	Dorn 1996	Typic Cryorthents 2
INY-76	76	INY, Bishop Creek (upper)	Surface glacial	Natural	Treaure Lakes-F, terminal moraine	Organic (aeolian biome)	nr	nr	2660	60	2703	2782	2896	CAMS-12410	Dorn 1996	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1	Organic Sediment (gyttja)	150	151	10120	80	11391	11735	12047	CAMS-BL-C-13G	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1	Charcoal	150	151	10170	170	11245	11836	12397	CAMS-BL-C-13A	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1	Organic Sediment (gyttja)	160	161	10880	60	12807	12864	12930	CAMS-BL-C-14	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-1, cirque tarn upstream from Recess Peak moraines, upper Middle Fork of Bishop Creek	Organic sediment (gyttja)	nr	nr	11190	70	12943	13092	13219	CAMS-11382	Clark, Bierman and Larsen 1995	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Wood (chip)	40	40	7050	70	7722	7878	8000	CAMS-BL-C-5	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Organic Sediment (gyttja)	83	83	7890	60	8583	8722	8981	CAMS-BL-C-12	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Wood (twig)	83	83	7900	60	8591	8738	8818	CAMS-BL-C-11	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Wood (chip)	95	95	8490	60	9405	9497	9550	CAMS-BL-C-3	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Charcoal	107	107	9450	50	10557	10688	10796	CAMS-BL-C-2	Clark and Gillespie 1997	Typic Cryorthents 2

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2	Organic Sediment	115	116	11190	70	12943	13092	13219	CAMS-BL-C-1	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	47	INY, Baboon Lakes	Lacustrine	Natural	BL-2, cirque tarn upstream from Recess Peak moraines, upper Middle Fork of Bishop Creek	Organic sediment (gyttja)	nr	nr	10880	60	12807	12864	12930	CAMS-11883	Clark, Bierman and Larsen 1995	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-2, gray green	Organic Sediment (gyttja)	95	96	9360	70	10373	10579	10756	CAMS-BL-C-4	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Buried marsh	Natural	BL-3	Peat (basal)	83	83	5580	90	6203	6376	6567	CAMS-BL-C-10	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Buried marsh	Natural	BL-3	Peat	114	115	5710	90	6306	6509	6677	CAMS-BL-C-9	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Lacustrine	Natural	BL-3	Wood (chip)	139	139	6950	50	7679	7780	7868	CAMS-BL-C-7	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Buried marsh	Natural	BL-3	Peat	140	140	7020	30	7792	7866	7935	CAMS-BL-C-8	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	INY, Baboon Lakes	Buried marsh	Natural	BL-3	Peat	151	152	9040	110	9885	10188	10500	CAMS-BL-C-6	Clark and Gillespie 1997	Typic Cryorthents 2
INY-77	77	MNO, Powell Glacier	Lacustrine	Natural	Sediment core immediately downstream of LIA rock glacier	Wood (splinter)	32	34	3680	60	3845	4018	4156	CAMS-25360	Konrad and Clark 1998	Typic Cryorthents 2
INY-77	77	MNO, Powell Glacier	Lacustrine	Natural	Sediment core immediately downstream of LIA rock glacier	Plant (twig)	94	96	5290	60	5927	6078	6209	CAMS-25361	Konrad and Clark 1998	Typic Cryorthents 2
INY-77	77	MNO, Powell Glacier	Lacustrine	Natural	Sediment core immediately downstream of LIA rock glacier	Wood (splinter)	24	26	3710	70	3849	4055	4248	CAMS-25362	Konrad and Clark 1998	Typic Cryorthents 2
INY-77	77	MNO, Powell Glacier	Lacustrine	Natural	Sediment core immediately downstream of LIA rock glacier	Plant (twig)	54	56	3010	70	2996	3203	3370	CAMS-25363	Konrad and Clark 1998	Typic Cryorthents 2
INY-77	77	MNO, Powell Glacier	Lacustrine	Natural	Sediment core immediately downstream of LIA rock glacier	Wood (chunk)	46	48	3655	45	3857	3979	4091	QL-4807	Konrad and Clark 1998	Typic Cryorthents 2
INY-78	78	INY, Bishop Creek (upper)	Surface glacial	Natural	South Lake-E, eroded till, original surface not preserved	Organic (aeolian biome)	nr	nr	7351	83	8006	8168	8347	NZA-3887	Dorn 1996	Stecum family
INY-78	78	INY, Bishop Creek (upper)	Surface glacial	Natural	South Lake-E, eroded till, original surface not preserved	Organic (aeolian biome)	nr	nr	7753	74	8392	8531	8663	NZA-3885	Dorn 1996	Stecum family
INY-78	78	INY, Bishop Creek (upper)	Surface glacial	Natural	South Lake-E, eroded till, original surface not preserved	Organic (aeolian biome)	nr	nr	10618	89	12380	12658	12837	NZA-3886	Dorn 1996	Stecum family
INY-79	79	INY-4646, Big Pine	Surface deposit	Natural	sediment sample (EU E111/N208); now sewer pond	Soil (SOM)	0	70	1120	60	928	1035	1175	?	Faull 2006 - SCA via A. Gold	Hesperia
INY-79	79	INY-4646, Big Pine	Surface deposit	Natural	sediment sample (EU E112/N207); now sewer pond	Soil (SOM)	0	70	1290	60	1072	1216	1301	?	Faull 2006 - SCA via A. Gold	Hesperia
INY-79	79	INY-4646, Big Pine	Surface deposit	Natural	sediment sample (EU E113/N204); now sewer pond	Soil (SOM)	0	70	1190	70	968	1117	1268	?	Faull 2006 - SCA via A. Gold	Hesperia
INY-79	79	INY-4646, Big Pine	Surface deposit	Natural	sediment sample (EU E80/N200); now sewer pond	Soil (SOM)	0	70	1380	60	1220	1300	1390	?	Faull 2006 - SCA via A. Gold	Hesperia
INY-80	80	INY-1756	Surface deposit	Cultural	Structure 8	Charcoal	10	20	100	10	88	119	256	UCR-1556	Bettinger 1989; UCR 1986 per CRD 1996	Badland
INY-81	81	INY, Funnel Lake	Lacustrine	Natural	Core from lake bed	Plant (twig)	286	286	8460	70	9392	9474	9545	Beta-155616	Petel 2006	(Glacial Lake)
INY-81	81	INY, Funnel Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	325	325	10330	130	11695	12172	12679	Beta-168125	Petel 2006	(Glacial Lake)
INY-81	81	INY, Funnel Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	401	403	11050	50	12887	12973	13079	NSRL-12024	Petel 2006	(Glacial Lake)
INY-81	81	INY, Funnel Lake	Lacustrine	Natural	Core from lake bed	Plant (moss)	353	353	11170	40	12956	13076	13172	Beta-153813	Petel 2006	(Glacial Lake)
INY-82	82	INY, Bishop Creek (upper)	Surface glacial	Natural	Shreve-D, lateral moraine, terminal at 2350 m	Organic (aeolian biome)	nr	nr	13870	60	16148	16526	16909	CAMS-12047	Dorn 1996	Nanamkin family
INY-82	82	INY, Bishop Creek (upper)	Surface glacial	Natural	Shreve-D, lateral moraine, terminal at 2350 m	Organic (aeolian biome)	nr	nr	15750	70	18831	18960	19103	CAMS-11535	Dorn 1996	Nanamkin family
INY-83	83	INY, Pinyon House Site	Surface deposit	Cultural	Beam 3	Charcoal	nr	nr	1630	80	1355	1527	1708	UCR-1108	Bettinger, UCR 1986; CRD 1996	Theriot
INY-83	83	INY, Pinyon House Site	Surface deposit	Cultural	Beam 5	Charcoal	nr	nr	440	80	306	471	560	UCR-1107	Bettinger, UCR 1986; CRD 1996	Theriot
INY-84	84	INY-2146, Partridge Ranch	Surface deposit	Cultural	N46/W41-42, with 4 subsurface Elko points	Bone (deer scapula)	30	50	1500	100	1258	1408	1618	UCR-1770	Bettinger et al. 1984; UCR 1986; CRD 1996	Cartago
INY-85	45	INY, Bishop Creek (lower)	Surface deposit	Natural	Terminal Sand Canyon Stage of Dorn, equivalent to older Tioga of Bateman (1965)	Organic (aeolian biome)	0	1	35420	470	39798	40734	41670	CAMS-11533	Dorn 1996	Pizona family
INY-85	45	INY, Bishop Creek (lower)	Surface deposit	Natural	Terminal Sand Canyon Stage of Dorn, equivalent to older Tioga of Bateman (1965)	Organic (aeolian biome)	0	1	36600	560	40752	41786	42820	CAMS-11534	Dorn 1996	Pizona family
INY-85	85	INY, Bishop Creek (lower)	Surface deposit	Natural	Terminal Sand Canyon Stage of Dorn, equivalent to older Tioga of Bateman (1965)	Organic (aeolian biome)	0	1	31900	480	36263	37283	38303	Beta-067103	Dorn 1996	Pizona family
INY-85	85	INY, Bishop Creek (upper)	Surface glacial	Natural	Little Egypt-B, maximum lateral, terminal not preserved	Organic (aeolian biome)	nr	nr	23590	170	27799	28273	28747	Beta-067105	Dorn 1996	Pizona family
INY-85	85	INY, Bishop Creek (upper)	Surface glacial	Natural	Little Egypt-C, recessional stage, only moraine with trees	Organic (aeolian biome)	nr	nr	10540	210	11751	12434	12902	NZA-3889	Dorn 1996	Pizona family
INY-85	85	INY, Bishop Creek (upper)	Surface glacial	Natural	Little Egypt-C, recessional stage, only moraine with trees	Organic (aeolian biome)	nr	nr	19600	140	22769	23396	23835	NZA-3888	Dorn 1996	Pizona family
INY-85	85	INY, Bishop Creek (upper)	Surface glacial	Natural	Little Egypt-C, recessional stage, only moraine with trees	Organic (aeolian biome)	nr	nr	20660	200	24258	24821	25437	NZA-3910	Dorn 1996	Pizona family
INY-86	86	INY, McKee Creek-south	Buried deposit	Natural	Trench MS-1B on south side of creek, from gravelly stratified sand post-Tioga alluvium Tioga glacier;	Charcoal	95	105	7080	110	7682	7898	8060	?	Berry 1990, 1997	Kilburn family
INY-87	87	INY, Deep Springs Valley Site	Buried soil	Cultural	Buried fire hearth (Charcoal and stones) in s-bank of Antelope Springs channel	Charcoal	181	183	1380	250	789	1296	1822	W-1069	Ives et al. 1964, RCJ; Lustig 1965	VEET
INY-88	88	INY, Eureka View	Surface deposit	Natural	Larrea tridentata twigs	Packrat Midden	0	1	535	150	281	541	786	GX-06226	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	1580	140	1262	1493	1822	GX-06224	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	2635	140	2352	2731	3063	GX-06222	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	5435	220	5720	6212	6678	GX-06229	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	8330	250	8591	9275	9914	GX-06231	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Organic Debris	Packrat Midden	0	1	3930	180	3896	4370	4841	GX-06225	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Wood (Atriplex confertifolia)	Packrat Midden	0	1	5595	210	5922	6398	6859	GX-06227	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Wood (Atriplex confertifolia)	Packrat Midden	0	1	6795	190	7322	7662	7982	GX-06228	Spaulding 1980	THERIOT
INY-88	88	INY, Eureka View	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	14720	530	16312	17741	18933	GX-06230	Spaulding 1980	THERIOT
INY-88	88	INY, Horse Thief Hills	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	10690	280	11744	12555	13185	GX-06217	Spaulding 1980	THERIOT

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-89	89	INY, Deep Springs Overlook	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	820	60	667	744	804	A-4980	Jennings, 1989	Bondranch
INY-89	89	INY, Deep Springs Overlook	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	3290	70	3379	3523	3646	A-4979	Jennings and Elliott-Fisk, 1993	Bondranch
INY-90	90	INY, Deep Springs Valley	Buried deposit	Natural	Below surface of stratigraphic unit Qf1, west of Soldier Pass	Charcoal	100	100	1960	55	1777	1912	2045	95-54c	Lee et al. 2001	MEXISPRING
INY-90	90	INY, Deep Springs Valley	Surface deposit	Natural	Stratigraphic unit Qdf deposited across Qf1 and youngest fault scarps	Wood (Pinon log)	?	?	445	55	423	492	552	95-78b	Lee et al. 2001	MEXISPRING
INY-91	91	INY-1384/H	Buried deposit?	Cultural	Locus 10, Feature 04, housefloor	Charcoal (or wood?)	?	?	1740	80	1513	1657	1866	?	Faull 2006 - SCA via A. Gold	Goodale
INY-92	92	INY, Double Boulder	Surface deposit	Natural	Fecal material	Packrat Midden	0	1	1660	85	1369	1565	1740	GX-14174	Jennings, 1989	MEXISPRING
INY-93	93	INY, Owens Valley, Willow Dip	Lacustrine	Natural	Maximum age of sand-tufa berm from lake highstand, Willow Dip Arroyo wall; w/obsidian flake	Carbonate (tufa)	50	80	5910	35	5109	5307	5460	CAMS-98308	Stine in Bryd and Hale 2003	Bartine
INY-93	93	INY, White Mountains	Surface deposit	Natural	Bristlecone Pine rings 990-1000 (TRL 63-92E)	Wood (Bristlecone)	0	1	6510	100	7252	7419	7581	SI-0469	Mielke and Long 1969 (RCJ)	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Bristlecone segment provided by C. W. Ferguson from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	890	60	698	815	923	OxA-0528	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Bristlecone segment provided by C. W. Ferguson from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1030	50	898	948	1058	OxA-0546	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Bristlecone segment provided by C. W. Ferguson from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1000	80	733	908	1065	OxA-0614	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Bristlecone segment provided by C. W. Ferguson from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1020	60	793	935	1056	OxA-0659	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Bristlecone segment provided by C. W. Ferguson from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	980	60	741	875	982	OxA-0677	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Floater collected and submitted by Michael 1962 (P-SW-INY-10; TRL 62-81b)	Wood (Bristlecone)	0	1	2602	35	2701	2742	2783	P-604	Ralph et al. 1965 - RCJ	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Floater collected and submitted by Michael 1962 (P-SW-INY-13b)	Wood (Bristlecone)	0	1	1952	36	1825	1903	1953	P-603	Ralph et al. 1965 - RCJ	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Floater collected and submitted by Michael 1962 (P-SW-INY-9; TRL 62-80b)	Wood (Bristlecone)	0	1	3225	47	3366	3445	3559	P-605	Ralph et al. 1965 - RCJ	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	From stump of tree felled in 1956, Methuselah Walk area (P-SW-INY-2 or WHTB255474779)	Wood (Bristlecone)	0	1	3237	55	3359	3461	3585	P-415	Ralph et al. 1965 - RCJ	Basket
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7704	23	8427	8485	8542	A-2341	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7729	29	8429	8504	8561	A-2342	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7724	25	8427	8499	8557	A-2343	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7593	24	8373	8398	8421	A-2344	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7547	23	8343	8375	8402	A-2521	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7463	21	8276	8285	8353	A-2525	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7452	24	8197	8265	8343	A-2526	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7502	22	8302	8347	8384	A-2527	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7427	24	8187	8260	8325	A-2527	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7485	27	8285	8324	8377	A-2528	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7521	27	8308	8358	8398	A-2529	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7472	27	8278	8301	8369	A-2530	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7457	23	8198	8270	8346	A-2540	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7478	24	8284	8315	8372	A-2541	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7469	23	8278	8298	8363	A-2542	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7563	21	8353	8384	8408	A-2543	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7507	25	8302	8349	8387	A-2544	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7441	29	8190	8263	8340	A-2544	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7461	27	8197	8280	8355	A-2557	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7428	22	8188	8260	8324	A-2558	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7404	23	8178	8254	8314	A-2559	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7348	27	8038	8162	8204	A-2560	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6959	22	7703	7789	7846	A-2734	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6901	27	7675	7725	7791	A-2735	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6985	26	7737	7823	7871	A-2736	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6992	26	7747	7832	7873	A-2737	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6987	21	7755	7825	7869	A-2738	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6986	22	7747	7824	7869	A-2739	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7701	24	8425	8483	8541	A-2740	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6943	21	7699	7767	7832	A-2741	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6844	23	7615	7673	7715	A-2742	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6847	23	7617	7675	7721	A-2743	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6827	23	7612	7659	7690	A-2749	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6832	22	7614	7664	7692	A-2750	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6874	22	7662	7697	7760	A-2751	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6777	21	7587	7627	7666	A-2752	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6702	23	7560	7576	7611	A-2753	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6682	22	7507	7549	7589	A-2754	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6668	22	7501	7537	7583	A-2755	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7643	25	8387	8423	8461	A-2862	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7602	24	8376	8401	8425	A-2863	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6998	25	7781	7840	7876	A-3009	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6853	23	7620	7680	7731	A-3018	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6876	24	7663	7700	7762	A-3019	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6836	24	7612	7667	7702	A-3020	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6797	20	7606	7639	7674	A-3021	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6705	19	7563	7578	7610	A-3036	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6718	22	7563	7585	7619	A-3037	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6694	24	7556	7570	7609	A-3038	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6682	22	7507	7549	7589	A-3039	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6650	21	7488	7534	7574	A-3040	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6661	22	7494	7535	7579	A-3041	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6654	19	7493	7535	7575	A-3042	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6608	19	7456	7500	7520	A-3043	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6518	19	7419	7433	7472	A-3053	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6461	17	7324	7371	7401	A-3054	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6464	17	7325	7373	7399	A-3055	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6502	18	7415	7427	7463	A-3056	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6504	20	7415	7428	7467	A-3057	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6506	19	7416	7428	7468	A-3058	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6484	19	7328	7396	7433	A-3059	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6442	18	7322	7369	7422	A-3060	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6617	17	7464	7510	7524	A-3066	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6613	17	7460	7505	7524	A-3067	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6627	17	7476	7523	7567	A-3068	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6588	19	7434	7479	7511	A-3069	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6475	17	7327	7380	7397	A-3072	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6477	19	7327	7381	7397	A-3073	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6457	17	7324	7370	7402	A-3074	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6421	21	7291	7365	7421	A-3075	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7425	25	8185	8260	8325	A-3214	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7501	23	8302	8345	8383	A-3215	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7350	26	8040	8166	8205	A-3216	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7320	25	8039	8110	8181	A-3217	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7342	26	8037	8137	8199	A-3218	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7298	26	8030	8105	8173	A-3223	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7368	25	8156	8186	8221	A-3224	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7284	25	8025	8102	8167	A-3225	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7324	26	8039	8112	8183	A-3226	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7258	23	8012	8090	8160	A-3227	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7224	20	7971	8021	8063	A-3228	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7250	24	8006	8071	8078	A-3229	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7720	20	8431	8496	8546	A-3796	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7794	31	8514	8573	8636	A-3797	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7753	23	8506	8540	8591	A-3798	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7737	23	8449	8514	8585	A-3799	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7694	30	8418	8478	8542	A-3800	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7615	29	8376	8408	8450	A-3801	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7586	20	8374	8395	8415	A-3883	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7510	22	8308	8353	8387	A-3884	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7578	21	8367	8392	8413	A-3885	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7496	25	8297	8339	8382	A-3886	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7338	27	8037	8125	8196	A-3887	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7372	24	8158	8190	8223	A-3895	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7758	24	8507	8546	8592	A-3926	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7691	24	8420	8474	8540	A-3928	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7763	25	8508	8552	8594	A-3929	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6447	21	7322	7370	7423	A-3976	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7557	22	8348	8381	8405	A-3995	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7485	22	8293	8328	8375	A-4028	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	7782	22	8536	8568	8602	A-4204	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	High-precision tree-ring dating to calibrate 14C age from Methuselah Walk, Inyo National Forest, Inyo National Forest	Wood (Bristlecone)	0	1	7592	23	8374	8397	8419	A-4205	Linick et al. 1986; -BC = Dendro-yr mid-point	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1960	60	1769	1912	2056	OxA-0001	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	90	60	8	120	151	OxA-0763	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	5220	80	5863	5996	6206	OxA-0764	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	120	70	-4	136	155	OxA-0767	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1910	80	1690	1852	2044	OxA-0779	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	2040	80	1822	2010	2160	OxA-0795	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	2840	80	2778	2969	3167	OxA-0796	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1010	80	733	921	1080	OxA-0826	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1600	90	1319	1495	1697	OxA-0874	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	5140	100	5657	5889	6123	OxA-0875	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	2810	60	2770	2920	3078	OxA-0901	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6070	70	6778	6935	7159	OxA-0909	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1890	50	1711	1833	1933	OxA-0987	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	1960	70	1729	1912	2063	OxA-1032	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Sample submitted for tree-ring calibration from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	6030	80	6676	6883	7029	OxA-1104	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Segment of bristlecone provided by C. W. Ferguson from Methuselah Walk, Inyo National Forest	Wood (Bristlecone)	0	1	980	60	741	875	982	OxA-0506	Oxford Datelist 1986 and 1987	Bartine
INY-93	93	INY, White Mountains	Surface plant	Natural	Snag top of down/dead tree near trail from Schulman Grove to Methuselah Walk, (P-SW-INY-11A)	Wood (Bristlecone)	0	1	2367	46	2315	2415	2505	P-811	Ralph et al. 1965 - RCJ	Bartine
INY-93	93	KER, China Lake	Lacustrine	Natural	Drill hole 10 ft N of Smith and Pratt 1957 core MD-1, with cattail, sedge, and otheraquatic plant pollen	Shell-f (Anodonta)	746	747	28500	2150	29299	33823	38347	A-0451	Damon, Haynes, and Long 1964 -RCJ	Bartine
INY-93	93	MNO, White Mountains	Surface plant	Natural	Erect stub of dead Bristlecone Pine tree above modern treeline collected by La Marche and Mooney 1965	Wood (*Pinus aristata*)	0	1	840	80	669	772	920	UCLA-1070F	Berger and Libby 1967 - RCJ; location approximate	Bartine
INY-93	93	MNO, White Mountains	Surface plant	Natural	Fallen Bristlecone Pine tree above modern treeline collected by La Marche and Mooney 1965	Wood (*Pinus aristata*)	0	1	4000	80	4237	4481	4709	UCLA-1070A	Berger and Libby 1967 - RCJ; location approximate	Bartine
INY-93	93	MNO, White Mountains	Surface plant	Natural	Fallen Bristlecone Pine tree above modern treeline collected by La Marche and Mooney 1965	Wood (*Pinus aristata*)	0	1	2540	80	2362	2593	2761	UCLA-1070B	Berger and Libby 1967 - RCJ; location approximate	Bartine
INY-93	93	MNO, White Mountains	Surface plant	Natural	Fallen Bristlecone Pine tree above modern treeline collected by La Marche and Mooney 1965	Wood (*Pinus aristata*)	0	1	3565	80	3682	3862	4085	UCLA-1070G	Berger and Libby 1967 - RCJ; location approximate	Bartine
INY-93	93	MNO, White Mountains	Surface plant	Natural	Fallen Bristlecone Pine tree above modern treeline collected by La Marche and Mooney 1965; same tree as UCLA-1070A	Wood (*Pinus aristata*)	0	1	3910	80	4138	4336	4532	UCLA-1070H/A	Berger and Libby 1967 - RCJ; location approximate	Bartine
INY-93	93	MRP, JB Swale, Yosemite NP	Surface marsh	Natural	Core 3	Organic Sediment	25	30	730	100	763	849	927	Beta-034999	Anderson and Smith 1997	Bartine
INY-93	93	MRP, JB Swale, Yosemite NP	Buried meadow	Natural	Core 3	Organic Sediment	75	85	2560	70	8452	8718	8998	Beta-035000	Anderson and Smith 1997	Bartine
INY-93	93	MRP, JB Swale, Yosemite NP	Buried meadow	Natural	Core 3	Organic Sediment	106	114	7870	110	2434	2619	2780	Beta-031990	Anderson and Smith 1997	Bartine

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
INY-94	94	INY, Owens River Terrace	Surface deposit	Natural	From Bqk-horizon in Q2 (i.e., T2) terrace, soil pit 203	Carbonate (clast coating)	50	100	7170	100	6991	7245	7437	Beta-053846	Pinter, Keller, and West 1994	Poleta
INY-94	94	INY, Owens Valley, Horton Creek	Buried soil	Natural	2Ob, W wall of T2 terrace below site/soil buried by Torriofluents	Peat (peaty clay)	105	115	4490	35	5038	5167	5297	OS-72698	Meyer, Rosenthal, and Young (in progress)	Torrifluvents
INY-94	94	INY-1386, Sawmill Road	Surface deposit	Cultural	AA15	Charcoal	46	61	1250	130	924	1161	1397	UCR-1866	Bouscaren 1985; CRD 1996	Millpond
INY-94	94	INY-1386, Sawmill Road	Surface deposit	Cultural	Locus 1, U-20, "intrusive charcoal"	Charcoal	15	31	995	160	669	920	1188	UCR-1867	Bouscaren 1985; CRD 1996	Millpond
INY-95	95	INY, Pine Creek	Buried glacial	Natural	Sandy peat from 2Bq1-horizon on crest of left lateral Tioga moraine with A/AB/Bw/Cox profile	Peat (sandy peat)	60	62	19570	420	22321	23322	24374	Beta-039038	Bach and Elliot-Fisk 1996	Xeric Haplargids
INY-95	85	INY, Pine Creek	Surface deposit	Natural	Varnish on boulders from small moraines down canyon from Tioga-maximum with crests charper than Tahoe and boulders more weathered than Tioga	Organic (aeolian biome)	0	1	30630	410	35168	36004	36840	NZA-2179	Bach and Elliot-Fisk 1996	Xeric Haplargids
INY-96	96	INY, Silver Canyon	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	5640	70	6294	6426	6567	A-4982	Jennings, 1996	Supervisor
INY-96	96	INY, White Mountains	Surface plant	Natural	From stump of tree felled in 1956, 4000 ft W of Goat Springs (Schulman WHTw4779)	Wood (Bristlecone)	0	1	4042	69	4405	4541	4822	P-407	Ralph et al. 1965 - RCJ	Bartine
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 12	Organic Sediment (with roots)	247	248	160	40	60	167	233	AA-28793	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 4	Charcoal (detrital)	47	48	395	45	421	448	517	AA-28795	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 5	Charcoal (detrital)	123	124	340	50	306	396	497	AA-28792	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 5	Wood (log)	120	121	490	55	451	526	566	AA-09990	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 5, burn layer	Organic Sediment	147	148	415	40	427	477	527	AA-28790	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 7	Charcoal (detrital)	160	161	400	45	422	454	520	AA-28791	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 7	Charcoal (detrital)	177	178	405	40	425	466	520	AA-28794	Lindvall et al. 2002	Oak Glen
KER-01	1	KER, Cuddy Canyon	Buried deposit	Natural	San Andreas Fault trench, stratum 9	Charcoal (detrital)	200	201	465	45	437	513	555	AA-28789	Lindvall et al. 2002	Oak Glen
KER-01	1	LAN, Tejon Pass, I-5	Buried deposit	Natural	Tree trunk(s) buried by debris flow in roadcut near summit sign W of I-5	Wood (Cedar)	nr	nr	41850	120	45887	46349	46811	GrN-8581	Berger and Kaufman 1980 (RCJ)	Gorman
KER-02	2	KER, Rosamond/Rogers Lake	Buried deposit	Natural	Core TL1, small pan near junction of Branch Memorial Park Rd with Lancaster Blvd, in Buckhorn corridor between Rosamond and Rogers Dry Lakes	Organic sediment	457	457	20190	90	23910	24171	24439	Beta-166450	Orme 2004	
KER-02	2	KER, Rosamond/Rogers Lake	Buried deposit	Natural	Core TL1, small pan near junction of Branch Memorial Park Rd with Lancaster Blvd, in Buckhorn corridor between Rosamond and Rogers Dry Lakes	Organic sediment	914	914	29570	280				Beta-166451	Orme 2004	
KER-02	2	KER, Rosamond/Rogers Lake	Buried deposit	Natural	Core TL1, small pan near junction of Branch Memorial Park Rd with Lancaster Blvd, in Buckhorn corridor between Rosamond and Rogers Dry Lakes	Organic sediment	1402	1402	29140	260				Beta-166452	Orme 2004	
KER-02	2	KER, Rosamond/Rogers Lake	Buried deposit	Natural	Core TL1, small pan near junction of Branch Memorial Park Rd with Lancaster Blvd, in Buckhorn corridor between Rosamond and Rogers Dry Lakes	Organic sediment	1859	1859	25850	200				Beta-166453	Orme 2004	
KER-03	3	KER-0307, Tejon Lake	Surface deposit	Cultural	Village of Kashtiq, D. Jennings excavated in 1970s,	Charcoal	137	137	405	50	421	454	525	UCLA-1963	Jennings 1976; CRD 1996	Steuber
KER-04	2	KER, Rosamond Lake	Buried deposit	Natural	Core RW2, beach ridge west of Rosamond Dry Lake, 1.6 km north of Division St intersection with Ave. A	Organic sediment	1311	1311	30860	340				Beta-166448	Orme 2004	
KER-04	2	KER, Rosamond Lake	Buried deposit	Natural	Core RW2, beach ridge west of Rosamond Dry Lake, 1.6 km north of Division St intersection with Ave. A	Organic sediment	1646	1646	18540	80	21947	22147	22346	Beta-166449	Orme 2004	
KER-04	4	KER, Rosamond Lake	Buried deposit	Natural	Core RW2, beach ridge west of Rosamond Dry Lake, 1.6 km north of Division St intersection with Ave. A	Organic sediment	274	274	6830	40	7587	7660	7738	Beta-166446	Orme 2004	
KER-04	4	KER, Rosamond Lake	Buried deposit	Natural	Core RW2, beach ridge west of Rosamond Dry Lake, 1.6 km north of Division St intersection with Ave. A	Organic sediment	518	518	17600	70	20481	20768	21128	Beta-166447	Orme 2004	
KER-04	4	KER, Rosamond Lake	Buried deposit	Natural	Core RW2, beach ridge west of Rosamond Dry Lake, 1.6 km north of Division St intersection with Ave. A	Organic sediment	610	610	20220	70	23966	24203	24440	Beta-165108	Orme 2004	
KER-04	4	KER, Rosamond Lake	Buried deposit	Natural	Core RW2, beach ridge west of Rosamond Dry Lake, 1.6 km north of Division St intersection with Ave. A	Organic sediment	1189	1189	21340	80	25545	25756	26000	Beta-165110	Orme 2004	
KER-05	5	KER-0526, Rogers Lake	Surface deposit	Cultural	Phase 2, Unit 07, fairly compact pale brown sand	Charcoal	30	40	3670	70	308	395	488	Beta-064177 (CAMS-7890)	Byrd et al.1994	Leuhman
KER-05	5	KER-0526, Rogers Lake	Surface deposit	Cultural	Phase 2, Unit 07, fairly compact pale brown sand	Charcoal	50	60	3770	70	281	390	513	Beta-064178 (CAMS-7891)	Byrd et al.1994	Leuhman
KER-05	5	KER-0533, Rogers Lake	Surface deposit	Cultural	Unit 01, hearth on fairly compact white sand	Charcoal	10	20	1890	80	1682	1829	2001	Beta-064179	Byrd et al.1994	Leuhman
KER-05	5	KER-1180, Rogers Lake	Surface deposit	Cultural	Locus A, Unit 01, FAR concentration	Charcoal	20	30	180	130	-5	204	341	Beta-064180	Byrd et al.1994	Leuhman
KER-05	5	KER-1180, Rogers Lake	Surface deposit	Cultural	Locus A, Unit 04, disturbed FAR concentration	Charcoal	0	10	690	50	620	649	712	Beta-064181	Byrd et al.1994	Leuhman
KER-06	6	KER-0490, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 01, lower part of Feature 11B hearth, below loose sand	Charcoal	10	25	600	70	518	599	670	Beta-081025	Byrd 1996	Leuhman
KER-06	6	KER-0490, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 01, upper part of Feature 11A hearth, below loose sand	Charcoal	10	25	690	80	532	646	744	Beta-081024	Byrd 1996	Leuhman

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-06	6	KER-0490, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 05	Charcoal	30	40	230	60	131	224	338	Beta-081798/CAMS-19949	Byrd 1996	Leuhman
KER-06	6	KER-0490, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 05	Charcoal	50	60	840	70	673	768	911	Beta-081799/CAMS-19950	Byrd 1996	Leuhman
KER-06	6	KER-0490, Rogers Lake	Surface deposit	Cultural	Locus A, Unit 06, from loose sand 20-cm above hard clay	Charcoal	40	50	1150	100	909	1078	1289	Beta-081026	Byrd 1996	Leuhman
KER-06	6	KER-0500, Rogers Lake	Buried soil/dune	Cultural	Locus F, Unit 03, loose charcoal, some FAR	Charcoal	30	40	320	60	285	388	502	Beta-081027/CAMS-19200	Byrd 1996	Leuhman
KER-06	6	KER-0501, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 02	Charcoal	60	70	1910	60	1714	1852	1954	Beta-081030/CAMS-19203	Byrd 1996	Cajon
KER-06	6	KER-0501, Rogers Lake	Surface deposit	Cultural	Locus A, Unit 02, associated with upper C-horizon	Charcoal	30	40	800	50	663	722	796	Beta-081029/CAMS-19202	Byrd 1996	Cajon
KER-06	6	KER-0501, Rogers Lake	Buried soil/dune	Cultural	Locus B, Unit 01, most artifacts with "humic-enriched" stratum	Charcoal	50	60	1760	60	1541	1674	1821	Beta-081800/CAMS-19951	Byrd 1996	Cajon
KER-06	6	KER-0501, Rogers Lake	Buried soil/dune	Cultural	Locus B, Unit 01, most artifacts with "humic-enriched" stratum	Charcoal	30	40	1910	60	1714	1852	1954	Beta-081028/CAMS-19201	Byrd 1996	Cajon
KER-06	6	KER-2378, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 03, refuse layer	Charcoal	30	45	640	60	537	607	678	Beta-081031/CAMS-19204	Byrd 1996	Hi Vista
KER-06	6	KER-2378, Rogers Lake	Buried soil/dune	Cultural	Locus A, Unit 05, fire-affected rock layer	Charcoal	20	30	940	60	734	849	955	Beta-081032/CAMS-19205	Byrd 1996	Hi Vista
KER-07	7	KER, Pescadero Creek	Buried marsh	Natural	Antelope Valley, La Liebre Ranch, arroyo wall	Peat	200	250	2720	110	2681	2846	3161	UM-2157	Crabtree and Stipp 1981 (RCJ)	Chino
KER-07	7	KER, Pescadero Creek	Buried marsh	Natural	Antelope Valley, La Liebre Ranch, arroyo wall	Peat	300	350	3950	100	4141	4397	4651	UM-2115	Crabtree and Stipp 1981 (RCJ)	Chino
KER-08	8	KER, Willow Springs Fault	Buried colluvium	Natural	From deposits displaced ~70 cm on steep reverse fault	Charcoal	nr	nr	4590	120	4960	5263	5584	USGS-0607	Robinson and Trimble 1983 (RCJ) (RCJ)	Hesperia
KER-09	9	KER-0303, AVC-10	Surface deposit	Cultural	Antelope Valley College Site #10	Bone (unknown)	0	1	300	10	378	403	427	UCLA-1884A	CRD 1996	Dune land
KER-09	9	KER-0303, AVC-10	Surface deposit	Cultural	Antelope Valley College Site #10	Bone (unknown)	nr	nr	1360	40	1233	1288	1344	UCLA-1884B	Sutton 1998b; CRD 1996	Dune land
KER-09	9	KER-0303, AVC-10	Surface deposit	Cultural	Antelope Valley College Site #10, surface bone	Bone (unknown)	0	1	1195	220	696	1110	1518	UCLA-1699	Sutton 1998b; CRD 1996	Dune land
KER-09	9	KER-0303, AVC-10	Surface deposit	Cultural	Base of cemetery	Charcoal	nr	nr	2200	40	2123	2231	2331	UCLA-1927	Sutton 1998b; CRD 1996	Dune land
KER-09	9	KER-0303, AVC-10	Surface deposit	Cultural	S8/E6, Feature 027	Charcoal	60	60	2140	90	1932	2133	2337	UCR-1742	UCR 1986; CRD 1996	Dune land
KER-09	9	KER-0303, AVC-10	Surface deposit	Cultural	S8/E6, Feature 027	Charcoal	60	60	2370	90	2299	2444	2719	UCR-1741	UCR 1986; CRD 1996	Dune land
KER-09	9	KER-0733, AVC-40	Surface deposit	Cultural	Unit 2, from hearth, next to creek channel	Charcoal	60	60	460	75	417	496	563	UCR-0970	Sutton 1984; CRD 1996	Dune land
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Post-Q4, Trench 7, both walls, soil on Q4 terrace, minimum age for Q4	Charcoal	120	180	2510	125	2320	2571	2859	UW-0772	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Q4?, creek cutbank near south end of Trench 2A, from eolian? silt, Kirk Canyon	Charcoal	350	400	8320	180	8759	9277	9664	UW-0776	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q6, east wall of creek cutbank, from laminated sandy silt in fluvial terrace	Charcoal	170	180	1465	80	1262	1371	1538	Beta-001669	Hall 1984	Badlands
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q6, southwest wall of creek cutbank, detrital from mudflow	Charcoal	280	300	150	40	58	151	284	UW-0783	Hall 1984	Badlands
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q6, southwest wall of creek cutbank, detrital from mudflow (not mapped)	Charcoal	120	160	380	45	420	434	509	UW-0775	Hall 1984	(no location)
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q6, southwest wall of creek cutbank, detrital from mudflow (not mapped)	Charcoal	120	140	930	85	684	843	979	Beta-001670	Hall 1984	(no location)
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Q6, Trench 1A N-end, Trench 18 S-end, youngest terrace cut by Pleito fault	Charcoal	210	230	2160	90	1949	2157	2343	UW-0785	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q6, Trench 1B, west wall, from youngest fluvial terrace cut by Pleito fault	Charcoal	150	170	1340	40	1178	1273	1313	UW-0779	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Q6, Trench 1C, both walls, from youngest fluvial terrace cut by Pleito fault	Charcoal	60	180	1630	120	1309	1537	1743	UW-0777	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Q6, Trench 1C, both walls, from youngest fluvial terrace cut by Pleito fault	Charcoal	420	430	2330	40	2303	2347	2470	UW-0773	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Q6, Trench 1C, east wall, from youngest fluvial terrace cut by Pleito fault	Charcoal	200	220	1380	120	1054	1292	1533	UW-0778	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Buried deposit	Natural	Q6, Trench 6, south wall, from youngest fluvial terrace cut by Pleito fault	Charcoal	120	140	1790	120	1478	1714	1951	UW-0780	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q6, Trench 8, south wall, from youngest fluvial terrace cut by Pleito fault	Charcoal	60	80	1560	65	1311	1455	1568	UW-0774	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q7, east wll of creek cutbank, rounded chunk from mudflow	Wood (unknown)	130	130	345	65	291	398	510	Beta-001604	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q7, east wll of creek cutbank, small detrital fragments from mudflow	Wood (unknown)	50	100	370	45	417	422	505	USGS-1173	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q7, Trench 1C, detrital limb or root from mudflow	Wood (unknown)	30	50	215	40	137	187	317	UW-0784	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Q7, west wall of creek cutbank, location uncertain, probably same mudflow	Wood (unknown)	56	58	185	10	166	178	284	I-10531	Hall 1984	(no location)
KER-10	10	KER, Tecuya Creek	Surface deposit	Natural	Roadcut, same geologic setting as Pit 1 sample	Charcoal	40	80	1255	75	1051	1180	1301	Beta-001605	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek (site)	Surface deposit	Cultural	Post-Q4, Pit 1, associated with stone pestle	Charcoal	60	120	1200	60	1045	1127	1268	UW-0781	Hall 1984	Guijarral
KER-10	10	KER, Tecuya Creek (site?)	Surface deposit	Natural	Q6, southwest cutbank, associated with bone frament s in fluvial terrace (Indian?)	Charcoal	210	210	130	50	4	135	152	USGS-1174	Hall 1984	Badlands
KER-10	10	KER, Tecuya Creek (site?)	Surface deposit	Natural	Q6, southwest cutbank, associated with bone frament s in fluvial terrace (Indian?)	Charcoal	210	210	475	60	428	515	564	Beta-001603	Hall 1984	Badlands
KER-10	10	KER, Tecuya Creek (site?)	Surface deposit	Natural	Q6, southwest cutbank, associated with bone frament s in fluvial terrace (Indian?)	Charcoal	210	210	660	45	552	615	677	UW-0782	Hall 1984	Badlands

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-10	10	KER, Tecuya Creek (west)	Buried deposit	Natural	Q4, from west wall of arroyo cutbank west of Tecuya Creek	Charcoal	150	250	23000	2875	20636	27538	34440	SJSU-?	Hall 1984	Guijarral
KER-11	11	KER, San Emigdio Creek	Buried deposit	Natural	Q2 - geomorphic surface, SELB #1	Charcoal (and/or wood)	?	?	730	150	495	695	961	ISGS-1249	Keller et al.2000	Riverwash
KER-11	11	KER, San Emigdio Creek	Buried deposit	Natural	Q2 - geomorphic surface, SE-MS-1	Charcoal (and/or wood)	?	?	960	80	723	862	1005	ISGS-1373	Keller et al.2000	Riverwash
KER-11	11	KER, San Emigdio Creek	Buried deposit	Natural	Q2 - geomorphic surface, SEQ-2	Charcoal (and/or wood)	?	?	640	70	526	608	688	ISGS-1276	Keller et al.2000	Riverwash
KER-11	11	KER, San Emigdio Creek	Buried deposit	Natural	Q3 - geomorphic surface, SEQ-3	Charcoal	300	400	4270	110	4521	4834	5072	ISGS-1338	Keller et al.2000	Calcic Haploxerepts
KER-12	12	KER, Twin Lakes	Buried deposit	Natural	Seismic Trench TW1, W-end of sag ponds	Charcoal	95	96	1345	40	1223	1277	1330	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried deposit	Natural	Seismic Trench TW1, W-end of sag ponds	Charcoal	80	85	1515	40	1327	1399	1518	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried deposit	Natural	Seismic Trench TW1, W-end of sag ponds	Charcoal	160	161	2350	35	2316	2361	2486	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried deposit	Natural	Seismic Trench TW1, W-end of sag ponds	Charcoal	182	183	2480	35	2435	2571	2718	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried deposit	Natural	Seismic Trench TW1, W-end of sag ponds	Charcoal	386	388	4700	35	5320	5407	5423	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried deposit	Natural	Seismic Trench TW1, W-end of sag ponds	Charcoal	356	357	4705	35	5321	5413	5420	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried soil	Natural	Seismic Trench TW1, W-end of sag ponds, 2Ab	Charcoal	45	50	355	35	315	403	413	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried soil	Natural	Seismic Trench TW1, W-end of sag ponds, 3Ab	Charcoal	134	136	1840	35	1704	1776	1869	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried soil	Natural	Seismic Trench TW1, W-end of sag ponds, 3Ab	Charcoal	147	148	2120	35	1994	2094	2157	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-12	12	KER, Twin Lakes	Buried soil	Natural	Seismic Trench TW1, W-end of sag ponds, 4Ab	Charcoal	243	245	3775	35	4072	4147	4248	CAMS-xxxx(?)	Madden and Dolan 2008	Oak Glen
KER-13	13	KER, San Emigdio Creek	Buried deposit	Natural	Q4 - buried A horizon of Q4b, Ranch House, SEQ-3	Charcoal	?	?	6360	280	6629	7223	7761	ISGS-1259	Keller et al.2000	Guijarral
KER-14	14	KER, Wheeler Ridge	Buried deposit	Natural	Q2- WR7	Charcoal	400	400	7370	140	7936	8187	8421	ISGS-WR7	Keller et al.1998	Cuyama
KER-15	15	KER, Maricopa Brea	Surface deposit	Natural	?	Wood (unknown)	?	?	13860	420	15349	16546	17882	?	Torres 1989; Langenwalter 1976 in Muleady-Meacham 2004	Excelsior
KER-15	15	KER, Maricopa Brea	Surface deposit	Natural	Isolated vertebra from C. dirus	Bone (wolf)	?	?	36000	1950	37635	41203	44771	?	Torres 1989; Langenwalter 1976 in Muleady-Meacham 2004	Excelsior
KER-16	16	KER, Buena Vista Basin	Buried colluvium	Natural	From 1960 DWR pit S of S.R. 166, charcoal w/ash in mudflow, submitted by W.D. Fuqua (C-O-8959A)	Charcoal	335	335	4250	200	4241	4810	5324	LJ-0314	Hubbs et al. 1962; Fredrickson and Grossman 1977	Cerini
KER-17	17	KER, Buena Vista Basin	Lacustrine	Natural	Core 32S/25E-16F, 2 mi S of Millux, between upper and lower lacustrine clays under Buena Vista and Kern lakebeds	Wood (unknown)	2255	2255	17130	350	19520	20289	21108	W-1504	Croft 1968, 1972	Posochanet
KER-17	17	KER, Buena Vista Basin	Lacustrine	Natural	Core 32S/26E-10N; sand bed in A clay, 2 mi S of Millux	Wood (unknown)	1158	1158	9040	300	9486	10174	10884	W-1505	Croft 1968, 1972	Posochanet
KER-18	18	KER, Tehachapi Site, AVC-7	Surface deposit	Cultural	Antelope Valley, Site AVC-7, from Cole and Robinson (KER-30x?)	Bone (unknown)	nr	nr	210	70	55	197	332	UCLA-1933A	Berger and Protsch 1989; CRD 1996	Tehachapi
KER-19	19	KER-0039	Surface deposit	Cultural	Level 4 Orangey Clay Shell Concentration	Charcoal	55	65	1200	160	786	1116	1399	Beta-034375	Hartzell 1992	Pits
KER-19	19	KER-0116, Buena Vista Lake	Surface deposit	Cultural	Charred plant feature	Charcoal	50	60	1430	120	1065	1345	1568	Beta-034377	Hartzell 1992	Kimberlina
KER-19	19	KER-0116, Buena Vista Lake	Buried deposit	Cultural	From sterile sandy soil with caliche near Grid Point Q-15 by D.A.F. in 1964 (2 identical)	Shell-f (Anodonta)	425	455	8200	400	7563	8379	9310	LJ-1356, 1357	Fredrickson and Grossman 1977 (RCJ vol. 9 1967)	Kimberlina
KER-19	19	KER-0116, Buena Vista Lake	Buried deposit	Cultural	On old shore line at foot of Buena Vista Hills (Grid Point N8/E18) by J.W.G. in 1965	Shell-f (Anodonta)	280	340	7600	200	7389	7738	8148	I-01928	Fredrickson and Grossman 1977 (RCJ vol. 10 1968)	Kimberlina
KER-19	19	KER-0116, Buena Vista Lake	Surface deposit	Cultural	Unit 07, Feature 02 pit/hearth	Charcoal	30	70	1320	170	909	1224	1569	Beta-034378	Hartzell 1992	Kimberlina
KER-20	20	KER, Buena Vista Valley	Buried soil	Natural	Broad Creek bank, Locality 2, from 2Btkb horizon	Soil (SOM)	55	70	8530	50	9453	9516	9556	Beta-169380	Young 2003	Riverwash
KER-20	20	KER, Buena Vista Valley	Surface deposit	Natural	Broad Creek bank, Locality 2, from C horizon near 2Bt contact	Charcoal	60	60	4230	40	4627	4753	4762	Beta-169381	Young 2003	Riverwash
KER-21	21	KER, Buena Vista Valley	Buried alluvium	Natural	Locale B, Profile B2, 2Bkb, east of Valley Acres	Charcoal	115	120	2550	40	2489	2628	2643	Beta-204378	Wriston 2005	Excelsior
KER-21	21	KER, Buena Vista Valley	Buried alluvium	Natural	Locale C, Profile B3, 3Ab; east of Valley Acres	Soil (SOM)	130	150	2320	60	2152	2340	2492	Beta-204377	Wriston 2005	Excelsior
KER-22	22	KER, Buena Vista Valley	Buried soil	Natural	Buena Vista Creek bank, Locality 2, A horizon	Soil (SOM)	35	50	2030	40	1893	1985	2069	Beta-169379	Young 2003	Riverwash
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 10, Qoc	Charcoal	75	80	16264	149	19079	19417	19614	AA-15827	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 2	Charcoal	5	100	1025	55	891	942	1057	AA-09173	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 2, Hyc	Charcoal	20	20	1920	55	1727	1865	1954	AA-09170	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 2, Qf1	Charcoal	200	200	19075	220	22210	22661	23400	AA-09171	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Surface channel	Natural	Trench 3, modern channel	Charcoal	85	95	260	61	257	313	494	NZA-3196	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 3, Qf1	Charcoal	215	225	18295	143	21224	21762	22193	NZA-3197	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 4, Hya	Charcoal	170	223	2412	67	2341	2483	2621	NZA-3691	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 4, Hya	Charcoal	170	223	2419	67	2344	2491	2621	NZA-3693	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 4, Hya	Charcoal	170	223	2449	67	2353	2530	2624	NZA-3694	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 4, Hya	Charcoal	170	223	2534	68	2433	2592	2755	NZA-3514	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 5, Hya	Charcoal	160	160	2448	68	2352	2529	2715	NZA-3699	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Burn zone 6a-1	Charcoal	130	145	5516	98	6170	6315	6500	AA-14547	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Burn zone 6a-3	Charcoal	130	150	5950	70	6635	6785	6970	AA-09172	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Burn zone 6d	Charcoal	350	360	7040	94	7679	7864	8016	AA-14549	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Burn zone 6e	Charcoal	350	370	7056	103	7670	7877	8050	AA-14550	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Burn zone 6f	Charcoal	410	415	6918	71	7619	7757	7872	AA-14552	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Burn zone 6g	Charcoal	440	450	6888	88	7583	7733	7872	AA-14551	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Cultural	Trench 6, Hearth Feature 06c-1	Charcoal	130	140	5602	71	6280	6387	6551	AA-14548	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Cultural	Trench 6, Hearth Feature 06c-2	Charcoal	130	140	5600	50	6297	6375	6476	Beta-112551	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Cultural	Trench 6, Hearth Feature 06h, several charcoal fragments	Charcoal	440	460	7170	140	7697	7997	8217	Beta-074108	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Cultural	Trench 6, Hearth Feature 06h, single charcoal fragment	Charcoal	440	460	6968	109	7609	7803	7981	AA-14553	Gardner et al. 2002	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Hoa	Charcoal	175	185	6812	91	7504	7660	7845	AA-14555	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Hoa	Charcoal	230	240	7240	59	7962	8065	8173	AA-16339	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Hoc, possibly biioturbated	Charcoal	185	195	892	52	723	817	924	AA-15822	McGill et al. 2009	Arizo

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Hoc, uncharred wood	Wood (Larrea, creosote)	215	220	136	73	-4	146	287	AA-15823	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 6, Qf2	Charcoal	15	20	631	54	540	604	671	AA-14558	McGill et al. 2009	Arizo
KER-23	23	KER-3939, Clark Wash	Buried deposit	Natural	Trench 9, Qf1	Charcoal	125	150	11470	105	13131	13328	13567	AA-15825/6	McGill et al. 2009	Arizo
KER-24	24	KER, Hwy 119 Reciever Pit	Buried lacustrine	Natural	Below 2.5 m of bedded sand in trench (EHPP) on N-side of Hwy 119 between Tupman Rd & CA Aqueduct	Shell (fresh mussel)	170	180	2540	40	1684	1797	1915	Beta-168093	Culleton and Jackson 2003, 2005	Cajon
KER-24	24	KER, Hwy 119 Reciever Pit	Buried lacustrine	Natural	Below 2.5 m of bedded sand in trench (EHPP) on N-side of Hwy 119 between Tupman Rd & CA Aqueduct	Shell (fresh mussel)	120	135	3170	40	2427	2587	2715	Beta-168092	Culleton and Jackson 2003, 2005	Cajon
KER-24	24	KER, Hwy 119 Reciever Pit	Buried lacustrine	Natural	Below 2.5 m of bedded sand in trench (EHPP) on N-side of Hwy 119 between Tupman Rd & CA Aqueduct	Shell (gastropod - single)	280	310	4050	40	3484	3629	3772	Beta-168096	Culleton and Jackson 2003, 2005	Cajon
KER-24	24	KER, Hwy 119 Reciever Pit	Buried lacustrine	Natural	Below 2.5 m of bedded sand in trench (EHPP) on N-side of Hwy 119 between Tupman Rd & CA Aqueduct	Shell (fresh mussel)	230	237	4060	40	3515	3642	3800	Beta-168094	Culleton and Jackson 2003, 2005	Cajon
KER-24	24	KER, Hwy 119 Reciever Pit	Buried lacustrine	Natural	Below 2.5 m of bedded sand in trench (EHPP) on N-side of Hwy 119 between Tupman Rd & CA Aqueduct	Shell (gastropod - bulk)	290	290	5050	40	4821	4938	5078	Beta-168095	Culleton and Jackson 2003, 2005	Cajon
KER-24	24	KER, Hwy 119 Reciever Pit	Buried lacustrine	Natural	Below 2.5 m of bedded sand in trench (EHPP) on N-side of Hwy 119 between Tupman Rd & CA Aqueduct	Shell (gastropod - single)	365	380	5280	50	5106	5279	5435	Beta-168153	Culleton and Jackson 2003, 2005	Cajon
KER-24	24	KER-3397	Surface deposit	Cultural	CU-2/ 10-20 cm bs	Shell-f (single mussel)	10	10	1160	40	350	456	522	Beta-168085	Culleton and Jackson 2003 (Culleton 2006)	Torriorthents
KER-24	24	KER-3397	Surface deposit	Cultural	CU-2/0-10cmbs	Shell-f (single mussel)	0	10	520	40	-4	-2	-2	Beta-168084	Culleton and Jackson 2003 (Culleton 2006)	Torriorthents
KER-24	24	KER-3397	Surface deposit	Cultural	RRU-2	Shell-f (single mussel)	nr	nr	1920	40	1031	1141	1255	Beta-168086	Culleton and Jackson 2003 (Culleton 2006)	Torriorthents
KER-25	25	KER- (Site 11)	Surface deposit	Cultural	Beacon Solar, N-S Trench, hearth, Strat. II	Charcoal	30	60	680	40	625	644	687	Beta-247914	Apple and Cleland 2008	(D. Craig has location?)
KER-25	25	KER- (Site 12)	Surface deposit	Cultural	Beacon Solar, Trench, Hearth 1	Charcoal	30	40	190	40	132	178	229	Beta-247915	Apple and Cleland 2008	(D. Craig has location?)
KER-25	25	KER- (Site 13)	Surface deposit	Cultural	Beacon Solar, Unit 3A, charcoal sample	Charcoal	0	10	880	40	725	794	915	Beta-247916	Apple and Cleland 2008	(D. Craig has location?)
KER-25	25	KER- (Site 8)	Surface deposit	Cultural	Beacon Solar, South Trench, Hearth 1	Charcoal	70	80	590	40	535	601	654	Beta-248247	Apple and Cleland 2008	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Buried soil	Natural	TL3, Stratum 3	Soil (SOM)	220	220	9490	50	10586	10760	10871	Beta-255187	Young 2009	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Surface deposit	Natural	TL4a, Stratum 1	Wood	20	20	10	40	32	59	84	Beta-255913	Young 2009	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Buried soil	Natural	TL4b, Stratum 5	Soil (SOM)	240	240	2920	40	2955	3071	3210	Beta-255910	Young 2009	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Buried soil	Natural	TL5a, Stratum 12	Soil (SOM)	410	410	7330	50	8014	8125	8214	Beta-255912	Young 2009	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Buried deposit	Natural	TL5a, Stratum 6	Charcoal	180	180	3500	40	3686	3772	3878	Beta-255911	Young 2009	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Buried deposit	Natural	TL5a, Stratum 8	Charcoal	280	280	4250	40	4798	4831	4875	Beta-255186	Young 2009	(D. Craig has location?)
KER-25	25	KER, Beacon Solar/Cantil	Buried deposit	Natural	TL5b, Stratum 2	Charcoal	80	80	1690	40	1524	1598	1701	Beta-255909	Young 2009	(D. Craig has location?)
KER-26	26	KER, McKittrick Brea	Surface deposit	Natural	Collected in 1979 near Pierce site 4	Organics (plant/insect)	?	?	5255	250	5572	6026	6566	QC-995A	Miller 1983	Bitterwater
KER-26	26	KER, McKittrick Brea	Surface deposit	Natural	Collected in 1979 near Pierce site 4, small sample	Organics (plant/insect)	?	?	12200	250	13580	14198	15016	QC-995B	Miller 1983	Bitterwater
KER-26	26	KER, McKittrick Brea	Surface deposit	Natural	Cybister elytron collected in 1979 near Pierce site 4	Organics (insect)	100	100	7975	470	7929	8893	9950	CRNL-?	Miller 1983	Bitterwater
KER-26	26	KER, McKittrick Brea	Surface deposit	Natural	From excavation at Pierce site 4	Wood (stems)	?	?	7645	250	7955	8486	9036	QC-782	Miller 1983	Bitterwater
KER-26	26	KER, McKittrick Brea	Surface deposit	Natural	Tar seep	Plant (organic material)	0	1	38000	1250	40797	42993	45189	UCLA-0728	RCJ 1966	Bitterwater
KER-27	27	KER-5955, Elk Hills	Surface deposit	Cultural	CU- 1/0-30 cm bs	Shell-f (single mussel)	0	30	600	40	-4	-1	-1	Beta-168087	Culleton and Jackson 2003 (Culleton 2006)	Elkhills
KER-27	27	KER-5955, Elk Hills	Surface deposit	Cultural	Feature B, sample 9	Charcoal	0	30	1330	40	1178	1265	1305	Beta-170998	Culleton and Jackson 2003, 2005	Elkhills
KER-27	27	KER-5955, Elk Hills	Surface deposit	Cultural	Feature B, sample 9	Charcoal	0	30	1390	40	1262	1307	1377	Beta-170999	Culleton and Jackson 2003, 2005	Elkhills
KER-27	27	KER-5955, Elk Hills	Surface deposit	Cultural	RRU-2 0-40 cm bs	Shell-f (single mussel)	0	40	780	40	-2	65	195	Beta-168088	Culleton and Jackson 2003 (Culleton 2006)	Elkhills
KER-27	27	KER-5955, Elk Hills	Surface deposit	Cultural	STU- 1/0-20 cm bs	Shell-f (single mussel)	0	20	560	40	-3	-2	-2	Beta-168090	Culleton and Jackson 2003 (Culleton 2006)	Elkhills
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	S2.41/W1.53 POINT	Charcoal	10	20	680	40	625	644	687	Beta-180847	Culleton 2006	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	S2.41/W1.53 POINT	Charcoal	10	20	690	40	626	654	692	Beta-180849	Culleton 2006	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	S2.78/W1.65 Feat C	Charcoal	12	22	720	40	642	673	729	Beta-180846	Culleton 2006	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	S2.78/W1.65 Feature 01	Charcoal	0	10	690	40	626	654	692	Beta-180843	Culleton 2006	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	S3.195/W1.305 Feature 01	Charcoal	0	20	710	40	637	667	726	Beta-180842	Culleton 2006	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	S3.2/W1.3 Feature 01	Charcoal	17	17	710	40	637	667	726	Beta-180840	Culleton 2006	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Unit S 2.41/W 1.53 Point Locus a	Shell-f (single mussel)	10	20	670	40	-3	29	95	Beta-180850	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Unit S 2.41/W 1.53 Point Locus a	Shell-f (single mussel)	10	20	690	40	-3	37	106	Beta-180848	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Unit S 2.78/W 1.65	Bone (elk)	0	10	650	50	547	609	675	Beta-180852	Culleton and Jackson 2005	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Unit S 2.78/W 1.65/0- 10 cm bs Locus a	Shell-f (single mussel)	0	10	690	40	-3	37	106	Beta-180844	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Unit S 3.195/W 1.305 Feature Locus a	Shell-f (single mussel)	0	20	710	60	-3	53	147	Beta-180841	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Unit S 3.2/W 1.3 Feature Locus a	Shell-f (single mussel)	17	17	800	50	-1	88	228	Beta-180839	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-28	28	KER-3079A , Tupman	Surface deposit	Cultural	Units 2.8/W 1.65 Feature Locus a	Shell-f (single mussel)	12	22	660	40	-4	20	88	Beta-180845	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-28	28	KER-3079C, Tupman	Surface deposit	Cultural	S4.39/E8.2, Feature A	Charcoal (Atriplex)	12	20	190	30	138	180	223	Beta-191404	Culleton and Jackson 2005	Elkhills
KER-28	28	KER-3079C, Tupman	Surface deposit	Cultural	TEU-1 Feature 01 Locus c, multiple shells	Shell-f (Anodonta)	nr	nr	960	70	61	259	430	Beta-112707	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-28	28	KER-3166/H	Surface deposit	Cultural	CU- 1/50-60 cm bs	Shell-f (bulk mussel)	50	60	4840	100	4411	4681	4928	Beta-116693	Jackson et al.1999 (Culleton 2006)	Torriorthents
KER-28	28	KER-3166/H	Surface deposit	Cultural	TU-2/40-50 cm bs	Shell-f (bulk mussel)	40	50	4740	60	4405	4563	4776	Beta-108267	Jackson et al.1999 (Culleton 2006)	Torriorthents
KER-28	28	KER-5367	Surface deposit	Cultural	SP-37/0-50 cm bs	Shell-f (bulk mussel)	0	50	480	60	-5	-3	-2	Beta-112706	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-29	29	KER-2211, Cantil	Surface deposit	Cultural	Locus 1, Hearth 3	Charcoal	38	38	150	15	6	187	224	UCR-2378	Sutton 1989; CRD 1996	Cajon
KER-29	29	KER-2211, Cantil	Surface deposit	Cultural	Locus 1, TU-14, hosefloor	Charcoal	38	65	940	100	680	852	1011	UCR-2376	Sutton 1989; CRD 1996	Cajon
KER-29	29	KER-2211, Cantil	Surface deposit	Cultural	Locus 1, TU-15, Hearth 4	Charcoal	62	62	940	80	690	849	979	UCR-2377	Sutton 1989; CRD 1996	Cajon
KER-29	29	KER-2211, Cantil	Surface deposit	Cultural	Locus 1, TU-9, housefloor	Charcoal	65	65	1300	100	1047	1208	1381	UCR-2379	Sutton 1989; CRD 1996	Cajon
KER-29	29	KER-2211, Cantil	Surface deposit	Cultural	TU-1, Hearth	Charcoal	50	50	2490	300	1868	2555	3272	UCR-2375	Sutton 1989 or 91?; CRD 1996	Cajon
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 1, TU-2	Charcoal	78	85	970	70	732	868	989	UCR-2109	Sutton 1991; CRD 1996	Cajon
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 1, TU-2	Charcoal	120	130	1180	40	1043	1107	1182	UCR-2136	Sutton 1991; CRD 1996	Cajon
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 10, Structure 1, pithouse	Charcoal	50	70	1110	70	912	1031	1183	UCR-2257	Sutton 1991; CRD 1996	Cajon

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 10, Structure 1, pithouse	Charcoal	50	70	1240	90	971	1160	1300	UCR-2255	Sutton 1991; CRD 1996	Cajon
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 10, Structure 1, pithouse floor, post B	Charcoal	50	70	1430	60	1261	1337	1419	UCR-2256	Sutton 1991; CRD 1996	Cajon
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 10, TU-9, hearth	Charcoal	50	70	1420	50	1272	1329	1407	?	Sutton 1991; Faull 2006 - SCA via A. Gold	Cajon
KER-30	30	KER-0875, Koehn Lake	Surface deposit	Cultural	Locus 6, TU-1	Charcoal	60	70	1410	50	1263	1323	1406	UCR-2137	Sutton 1991; CRD 1996	Cajon
KER-31	31	KER-3077, Elk Hills	Surface deposit	Cultural	EU-3/0-20 cm bs Locus a	Shell-f (bulk mussel)	0	20	780	60	-2	83	153	Beta-116688	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-31	31	KER-3077, Elk Hills	Surface deposit	Cultural	EU-6 Feature 01 Locus a, multiple shells - bulk	Shell-f (Anodonta)	nr	nr	800	70	-1	102	241	Beta-116689	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-31	31	KER-3167	Surface deposit	Cultural	TU-I/0-10cmbs	Shell-f (bulk mussel)	0	10	970	70	73	272	441	Beta-108266	Jackson et al.1999 (Culleton 2006)	Cajon
KER-31	31	KER-5392a, Elk Hills	Surface deposit	Cultural	Locus A, SP-37, on lower smooth fan	Shell-f (bulk mussel)	0	50	1250	60	428	522	633	Beta-111365	Jackson et al.1999 (Culleton 2006)	Cajon
KER-31	31	KER-5392b, Elk Hills	Surface deposit	Cultural	Locus B, CU- 1, on older dissected fan, max-age for Cajon series	Shell-f (bulk mussel)	30	40	3080	50	2326	2459	2654	Beta-116692	Jackson et al.1999 (Culleton 2006)	Cajon
KER-31	31	KER-5392b, Elk Hills	Surface deposit	Cultural	Locus B, Unit 11.03, on older dissected fan, B3b bead	Shell (Olivella)	40	60	4000	40	3401	3668	3930	Beta-190873	Culleton and Jackson 2005	Cajon
KER-31	31	KER-5396	Surface deposit	Cultural	SP-4/0-50 cm bs	Shell-f (bulk mussel)	0	50	810	60	-1	103	238	Beta-111363	Jackson et al.1999 (Culleton 2006)	Cajon
KER-31	31	KER-5401	Surface deposit	Cultural	STP-26/20	Shell-f (bulk mussel)	20	40	530	60	-4	-2	-2	Beta-108269	Jackson et al.1999 (Culleton 2006)	Cajon
KER-31	31	KER-5401	Surface deposit	Cultural	STP-3/20-40 cm bs	Shell-f (bulk mussel)	20	40	850	70	-1	140	266	Beta-108268	Jackson et al.1999 (Culleton 2006)	Cajon
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-11/20-40 cm	Shell-m (clam disk)	?	?	1020	60	133	384	568	Beta-118260	Gilreath and King 2003	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-11/20-40 cm	Shell-m (Olivella K1 cupped)	?	?	1170	50	307	517	669	Beta-118259	Gilreath and King 2003	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-2	Shell-m (clam disk)	20	40	1470	40	565	764	951	Beta-180862	Culleton and Jackson 2005	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-2	Shell-m (clam disk)	40	60	1720	40	786	1011	1234	Beta-180863	Culleton and Jackson 2005	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-2/0-20 cm	Shell-m (Olivella H3 chipped disk)	?	?	1210	50	351	549	715	Beta-118252	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-3/20-40 cm	Shell-m (Olivella K1 cupped)	?	?	1190	50	317	533	686	Beta-118253	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-4/0-20 cm	Shell-m (Olivella H3 chipped disk)	?	?	1210	50	351	549	715	Beta-118255	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-4/0-20 cm	Shell-m (Olivella K1 cupped)	?	?	1210	50	351	549	715	Beta-118256	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-4/0-20 cm	Shell-m (Olivella N2 grooved rectangle)	?	?	5080	40	4825	5102	5334	Beta-118254	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-7/0-20 cm	Shell-m (Olivella G/J wall disk)	?	?	1180	50	311	525	677	Beta-118257	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	EU-7/20-40 cm	Shell-m (Olivella G/J wall disk)	?	?	1110	40	283	464	632	Beta-118258	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	RRU 25	Shell-m (clam disk)	0	40	1110	40	283	464	632	Beta-180861	Culleton and Jackson 2005	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	RRU-21/40-80 cm	Shell-m (clam disk)	?	?	1350	50	495	656	870	Beta-118251	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	RRU-25/0-40 cm bs	Shell-f (bulk mussel)	0	40	1040	60	239	351	482	Beta-116690	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	SS-14	Shell-f (Anodonta)	20	30	340	40	-5	-4	-4	Beta-180855	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	SS-14	Shell-f (Gonidea)	20	30	410	40	-5	-3	-3	Beta-180856	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	SS-18 Shell	Shell-f (Anodonta)	25	35	550	40	-4	-2	-1	Beta-180853	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	SS-18 Shell	Shell-f (Gonidea)	25	35	650	40	-4	0	77	Beta-180857	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	SS-18, Feature 018-C	Shell-f (Anodonta)	26	26	550	40	-4	-2	-1	Beta-180854	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	TU-3	Shell-f (Gonidea)	20	30	1100	50	292	397	489	Beta-106601	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	TU-3	Shell-m (Olivella J wall disk)	?	?	1270	50	422	592	784	Beta-106602	Jackson, Shapiro, and King 1998	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	TU-3, multiple shells - bulk	Shell-f (Anodonta)	20	30	940	60	59	231	401	Beta-106600	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	Unit SS-14, Feature D	Charcoal	10	17	340	40	308	395	488	Beta-177848	Culleton and Jackson 2005	Elkhills
KER-31	31	KER-5404, Elk Hills	Surface deposit	Cultural	Unit SS-5, Feature 10	Charcoal	20	25	360	40	315	409	414	Beta-177847	Culleton and Jackson 2005	Elkhills
KER-32	32	KER-3080A, Elk Hills	Surface deposit	Cultural	Unit 104.03, northern shell dump	Shell (Gonidea)	0	20	680	40		0		Beta-190868	Culleton and Jackson 2005	Cajon
KER-32	32	KER-3080A, Elk Hills	Surface deposit	Cultural	Unit 104.03/0-20 cm bs Locus a	Shell-f (Gonidea)	0	20	340	40	-5	-4	-4	Beta-190868	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-32	32	KER-3080A, Elk Hills	Surface deposit	Cultural	Unit 105.03, southern shell dump	Shell (Gonidea)	0	20	770	40		0		Beta-190869	Culleton and Jackson 2005	Cajon
KER-32	32	KER-3080A, Elk Hills	Surface deposit	Cultural	Unit 105.03/0-20 cm bs Locus a	Shell-f (Gonidea)	0	20	430	40	-5	-3	-3	Beta-190869	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-32	32	KER-3080A, Elk Hills	Surface deposit	Cultural	Unit SW/10	Shell-f (Gonidea)	0	10	290	40	285	380	467	Beta-190870	Culleton et al. 2005 (Culleton 2006)	Cajon
KER-32	32	KER-3080A, Elk Hills	Surface deposit	Cultural	Unit SW1, main shell dump	Shell (Gonidea)	0	20	630	40		0		Beta-190870	Culleton and Jackson 2005	Cajon
KER-32	32	KER-3080C, Elk Hills	Surface deposit	Cultural	EU-6/20-40 cm bs Locus c	Shell-f (bulk mussel)	20	40	1110	60	287	404	501	Beta-112710	Jackson et al.1999 (Culleton 2006)	Cajon
KER-32	32	KER-3080C, Elk Hills	Surface deposit	Cultural	EU-7/0-20 cm bs	Shell-f (bulk mussel)	0	20	1020	60	220	334	469	Beta-112709	Jackson et al.1999 (Culleton 2006)	Cajon
KER-32	32	KER-3080C, Elk Hills	Surface deposit	Cultural	EU-7/0-20 cm bs Locus c	Shell-f (Gonidea)	0	20	980	50	137	288	419	Beta-112708	Jackson et al.1999 (Culleton 2006)	Cajon
KER-32	32	KER-3080D, Elk Hills	Surface deposit	Cultural	STP-2/0-20 cm bs Locus D	Shell-f (bulk mussel)	0	20	1460	60	546	678	796	Beta-108270	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-32	32	KER-3080E, Elk Hills	Surface deposit	Cultural	27855E/3910502N, Feature 1	Charcoal (Asteraceae)	10	20	530	50	502	550	567	Beta-191405	Culleton and Jackson 2005	Elkhills
KER-32	32	KER-3080E, Elk Hills	Surface deposit	Cultural	Unit 4.03, B3a bead	Shell (Olivella)	0	20	4340	50	3844	4009	4164	Beta-190872	Culleton and Jackson 2005	Elkhills
KER-32	32	KER-3082, Elk Hills	Surface deposit	Cultural	RRU-21/0-40cmbs	Shell-f (bulk mussel)	0	40	740	70	-2	72	150	Beta-112711	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-32	32	KER-3082, Elk Hills	Surface deposit	Cultural	Unit 277920E/3911460N	Shell-f (bulk mussel)	19	30	350	40	-5	-4	-4	Beta-180851	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	EU-11/60-80 cm	Shell-m (Tivela disk)	?	?	7130	50	7175	7378	7564	Beta-118250	Culleton 2006?	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	EU-11/60-80 cm	Shell-m (Tivela disk)	?	?	7840	50	7827	8044	8287	Beta-118249	Culleton 2006?	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	RRU 2	Shell-m (Tivela disk)	40	60	6660	40	6641	6879	7146	Beta-180860	Culleton and Jackson 2005	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	SCA 1	Shell-m (Tivela disk)	0	1	7330	40	7373	7552	7759	Beta-180859	Culleton and Jackson 2005	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	TU 6	Shell-m (Tivela disk)	40	60	7130	40	7185	7379	7562	Beta-180858	Culleton and Jackson 2005	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	TU-2/0-20 cm bs	Shell-f (bulk mussel)	0	20	1100	60	283	395	496	Beta-107055	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-32	32	KER-3168	Surface deposit	Cultural	TU-2/40-60 cm bs	Shell-f (bulk mussel)	40	60	1130	70	284	419	525	Beta-107056	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-32	32	KER-5398/H	Surface deposit	Cultural	SP-24/0-50 cm bs	Shell-f (bulk mussel)	0	50	740	60	-2	63	198	Beta-111364	Jackson et al.1999 (Culleton 2006)	Cajon
KER-33	33	KER-3085, Elk Hills	Surface deposit	Cultural	Locus C, Unit 45.03/1 5-20 cm bs	Shell-f (Anodonta)	5	20	720	50	-3	49	145	Beta-188992	Culleton et al. 2005 (Culleton 2006)	Kimberlina
KER-33	33	KER-3085, Elk Hills	Buried soil	Cultural	Locus C, Unit 83.03, 3ACb in T1 terrace; max-age of Kimberlina series	Shell-f (Anodonta)	120	125	2050	40	1167	1265	1350	Beta-188993	Culleton et al. 2005 (Culleton 2006)	Kimberlina
KER-33	33	KER-3085, Elk Hills	Surface deposit	Cultural	Locus C, Unit 87.03	Shell (Anodonta)	0	20	1400	40	537	627	697	Beta-188994	Culleton and Jackson 2005	Kimberlina
KER-33	33	KER-3085, Elk Hills	Surface deposit	Cultural	Locus C, Unit 96.03	Shell (Anodonta)	0	20	1440	40	558	660	737	Beta-190871	Culleton and Jackson 2005	Kimberlina
KER-33	33	KER-5373/H, Elk Hills	Surface deposit	Cultural	CU- 1/30-40 cm bs Locus c	Shell-f (bulk mussel)	30	40	1030	70	186	341	482	Beta-116691	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-33	33	KER-5373/H, Elk Hills	Surface deposit	Cultural	Unit 103 Feature 02, 13 to 28 cm bs Locus c	Shell-f (single mussel)	13	28	650	40	-4	0	77	Beta-180838	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-33	33	KER-5373/H, Elk Hills	Surface deposit	Natural	Unit 103, Feature 2	Charcoal	13	28	27810	300	32459	33165	33871	Beta-180837	Culleton and Jackson 2005	Elkhills
KER-33	33	KER-5373/H, Elk Hills	Surface deposit	Cultural	Unit 30 Feature 01, 5 to 25 cm bs Locus c	Shell-f (single mussel)	5	25	660	40	-4	20	88	Beta-180836	Culleton et al. 2005 (Culleton 2006)	Elkhills
KER-33	33	KER-5373/H, Elk Hills	Surface deposit	Cultural	Unit 30, Feature 1	Charcoal	15	25	800	40	672	717	783	Beta-180835	Culleton and Jackson 2005	Elkhills

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-33	33	KER-5373/H, Elk Hills	Surface deposit	Cultural	Unit 31, Feature 4	Charcoal	33	38	1370	50	1225	1293	1370	Beta-180834	Culleton and Jackson 2005	Elkhills
KER-33	33	KER-5397	Surface deposit	Cultural	SCA-1	Shell-f (bulk mussel)	0	1	390	80	-5	-3	-3	Beta-111362	Jackson et al.1999 (Culleton 2006)	Elkhills
KER-34	34	KER, Bakersfield	Buried alluvium	Natural	Below surface of Kern River alluvial fan; dates major phase of glacial outwash	Wood (unknown)	1200	1500	14100	200	16183	16845	17562	USGS-0038	RCJ 1977; Marchand and Allwardt 1981	Kimberlina
KER-35	35	KER, Buena Vista Slough	Buried alluvium	Natural	From sand/silt/clay sequence 48 km NE of California Aqueduct sta 3168+00	Wood (unknown)	1860	1860	31000	500	35340	36370	37400	W-2336	Lofgren 1975; Spiker, Kelly, and Rubin 1978	Buttonwillow
KER-36	36	KER, Caliente-Bodfish	Buried deposit	Natural	Caliente-Bodfish Roadcut, South Sierra 1	Charcoal	110	110	17100	1000	18092	20417	22719	UCLA-2460	Reneau et al. 1986	Tweedy
KER-36	36	KER, Caliente-Bodfish	Buried deposit	Natural	Caliente-Bodfish Roadcut, South Sierra 2	Charcoal	100	100	11285	865	10748	13166	15422	UCLA-2162d	Renua et al. 1986	Tweedy
KER-37	37	KER, Koehn Lake/Garlock Flt.	Lacustrine	Natural	Carbonate-cemented layer in test pit on crest of 1st spur near bifurcation of gravel bar on Garlock Fault	Carbonate (tufa)	182	243	9835	160	9739	10217	10568	I-07717	LaJoie card file (USGS-EQ 30)	Playa
KER-37	37	KER, Koehn Lake/Garlock Flt.	Lacustrine	Natural	From offset beach ridge on Garlock Fault	Carbonate (tufa)	0	1	11360	160	11905	12423	12842	I-07342	LaJoie card file (USGS-EQ 14)	Playa
KER-37	37	KER, Koehn Lake/Garlock Flt.	Lacustrine	Natural	Inner rind of lithoid tufa in near-surface gravel of pluvial lake shoreline bar offset along Garlock fault	Carbonate (tufa)	0	30	13460	80	14306	14812	15147	USGS-0635	Robinson and Trimble 1983 (RCJ)	Playa
KER-37	37	KER, Koehn Lake/Garlock Flt.	Buried lacustrine	Natural	Surface-water ostracodes in unoxidized mud/sand of lake high stand offset by Garlock fault; coll. 1977 by M. Clark & D. Burke, sub. by C. Hedel	Crustacean (ostracodes)	nr	nr	14700	130	16028	16494	16976	USGS-0388	Robinson and Trimble 1983 (RCJ)	Playa
KER-38	38	KER, Salt Creek, S.R. 33	Buried soil	Natural	S.R. 33 Salt Creek Gully, 2Ab	Soil (SOM)	70	80	14250	75	16585	17026	17461	OS-70217	Meyer, Rosenthal, and Young (in progress)	Panoche
KER-38	38	KER, Salt Creek, S.R. 33	Buried soil	Natural	S.R. 33 Salt Creek Gully, west bank, 3Ab	Soil (SOM)	120	140	16600	140	19532	19701	19897	OS-70222	Meyer, Rosenthal, and Young (in progress)	Panoche
KER-39	39	KER, Dove Spring Wash	Buried soil	Natural	From "lignitic sand" at base of oldest inset terrace in canyon; chalcedony flake in same stratum 40 m away; Qyw4 LP-EH unit of Miller and Amorosa 2006	Charcoal (confier branch)	240	250	10730	110	12559	12752	12906	Beta-018449	Whistler 1990, 1994; Miller and Amoroso 2007	Koehn
KER-39	39	KER, Dove Spring Wash	Surface deposit	Natural	Red Rock Canyon State Park	Bone (bison tooth)	nr	nr	16860	1175	18850	20158	21503	?	Scott 2001	Cutterbank
KER-39	39	KER, Dove Spring Wash	Surface deposit	Natural	Red Rock Canyon State Park	Bone (mammoth tooth)	nr	nr	19190	410	21945	22902	24052	?	Scott 2001	Cutterbank
KER-39	39	KER-0147, Red Rock Canyon	Surface deposit	Cultural	Unit A-1, by C. King 1987	Charcoal	40	60	630	90	510	608	724	WSU-3647	Sutton 1988a; CRD 1996	Koehn
KER-39	39	KER-2584, Red Rock Burial	Surface deposit	Cultural	Whistler Site, south of powerlines, east of Dove Springs Wash, 6-7 m above channel	Bone (human)	0	10	3740	65	3898	4099	4294	Beta-038745	Sutton 1992	Cutterbank
KER-40	40	KER-0261, Last Chance	Surface deposit	Cultural	S38/E4, Feature 01, hearth at cultural base	Charcoal (creosote bush)	28	40	640	75	518	609	694	UGa-3845	McGuire et al.1982	Cajon
KER-41	41	KER, Kern River Terrace	Buried soil	Natural	2Ab below Hesperia as mapped, N-wall of T3 terrace, north of river and county road	Soil (SOM)	160	170	2270	70	2157	2246	2262	OS-72794	Meyer, Rosenthal, and Young (in progress)	Hesperia
KER-42	42	KER-0246, Red Rock Canyon	Surface deposit	Cultural	Unit 02, hearth feature	Charcoal	40	50	3140	40	3317	3369	3448	?	Harvey and Gardner 2003	Cajon
KER-42	42	KER-0250, Bickel Site	Surface deposit	Cultural	N20/E5 (possible pit feature?)	Charcoal	65	65	1050	90	765	969	1176	UGa-3846	McGuire et al.1982	Cajon
KER-42	42	KER-0250, Bickel Site	Surface deposit	Cultural	N7/E27	Charcoal	90	100	950	75	698	855	980	UGa-3843?	McGuire et al.1982	Cajon
KER-42	42	KER-0250, Bickel Site	Surface deposit	Cultural	N7/E28	Charcoal	120	130	650	65	533	612	689	UGa-3844	McGuire et al.1982	Cajon
KER-42	42	KER-0250, Bickel Site	Surface deposit	Cultural	N7/E28, Feature 01, housefloor	Charcoal	60	70	1255	110	955	1168	1348	UGa-3836	McGuire et al.1982	Cajon
KER-42	42	KER-5043, Coffee Break	?	Cultural	?	Charcoal	?	?	2430	80	2342	2512	2723	?	Gardner 2009	Cajon
KER-42	42	KER-5043, Coffee Break	?	Cultural	?	Charcoal	?	?	2490	60	2429	2567	2735	?	Gardner 2009	Cajon
KER-42	42	KER-5043, Coffee Break	Surface deposit	Cultural	Hearth (TU-3 F1)	Charcoal	?	?	880	50	698	799	916	?	Faull 2006 - SCA via A. Gold; Gardner 2009	Cajon
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 094	Charcoal	nr	nr	320	55	289	389	499	AA-17842	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 098	Charcoal	nr	nr	225	45	136	203	330	AA-17838	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 102	Charcoal	nr	nr	50	50	14	104	147	AA-17848	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 110	Shell-f (freshwater)	nr	nr	431	46	0	0	0	AA-17837	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 112	Charcoal	nr	nr	375	40	421	432	506	AA-17849	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 114	Charcoal	nr	nr	510	60	465	539	653	Beta-082886	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 118	Charcoal	nr	nr	710	95	524	665	797	AA-17841	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 138	Charcoal	nr	nr	1540	50	1334	1438	1535	AA-17843	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 164	Charcoal	nr	nr	1930	45	1807	1879	1989	AA-17835	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 166	Charcoal	nr	nr	2735	65	2745	2841	2976	AA-17850	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 190	Charcoal	nr	nr	3700	50	3894	4040	4157	AA-17839	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 192	Charcoal	nr	nr	3680	40	3897	4020	4096	AA-17852	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 192	Charcoal	nr	nr	3735	45	3972	4088	4236	AA-34429	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 198	Charcoal	nr	nr	3740	40	3979	4096	4182	AA-17854	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 214	Charcoal	nr	nr	3905	50	4223	4335	4441	AA-17856	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 216	Charcoal	nr	nr	3945	55	4233	4389	4528	AA-17840	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 216	Charcoal	nr	nr	3975	50	4285	4445	4569	AA-34430	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 218	Charcoal	nr	nr	4320	45	4828	4897	4978	AA-34432	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 236	Charcoal	nr	nr	4410	55	4857	5005	5080	AA-17836	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 236	Charcoal	nr	nr	4515	55	5029	5161	5317	AA-21660	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 240	Charcoal	nr	nr	4520	45	5039	5163	5314	AA-34433	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 254	Charcoal	nr	nr	4515	60	4970	5160	5320	AA-33517	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 26a	Plant (twig)	nr	nr	2	45	31	65	138	AA-17847	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 26a	Plant (twig)	nr	nr	150	60	55	151	287	Beta-082884	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 316	Charcoal	nr	nr	5420	55	6172	6225	6308	AA-34434	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit 374	Charcoal	nr	nr	6225	75	6941	7122	7305	AA-34435	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit K fissure	Charcoal	nr	nr	4490	60	4959	5145	5313	AA-17846	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit K fissure	Charcoal	nr	nr	4535	55	5035	5168	5322	AA-21661	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-43	43	KER, El Paso Peaks	Buried deposit	Natural	Trench 2, Strat. Unit K fissure	Charcoal	nr	nr	4610	80	5043	5322	5484	Beta-082885	Dawson, McGill, and Rockwell 2003	TRIGGER
KER-44	44	KER, Buena Vista Slough	Buried alluvium	Natural	Core 28S/22E-16D; collected from blue-grey sand above clay by Croft 1964	Wood (unknown)	1097	1097	14060	450	15529	16858	18165	W-1650	Croft 1968; Manning 1968	Lokern
KER-45	45	KER, Buena Vista Slough	Buried alluvium	Natural	Core 27/22E-20L; collected from blue-grey sand above clay by Croft 1964	Wood (unknown)	609	609	13350	500	14180	15818	17202	W-1652	Croft 1968; Manning 1968	Lokern

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-46	46	KER-1283, Scodie Mts.	Surface deposit	Cultural	Unit 01	Charcoal	30	40	300	70	268	372	506	UCR-1265	Ambro et al.1981; Gold 2005	Grandora
KER-46	46	KER-1283, Scodie Mts.	Surface deposit	Cultural	Unit 01	Charcoal	40	50	340	80	272	392	528	UCR-1266	Ambro et al.1981; Gold 2005	Grandora
KER-46	46	KER-1286, Scodie Mts.	Surface deposit	Cultural	Test Unit 02	Charcoal	10	20	150	50	56	150	286	Beta-004547	McGuire 1983	Scodie
KER-46	46	KER-1286, Scodie Mts.	Surface deposit	Cultural	Test Unit 03	Charcoal	30	40	210	50	123	187	319	Beta-004548	McGuire 1983	Scodie
KER-47	47	KER-2108, S.R. 46	Surface deposit	Cultural	None reported	Shell-f (Anodonta)	0	20	1300	40	493	559	634	Beta-146238	Culleton et al. 2001	Milham
KER-48	48	KER-2107, S.R. 46	Surface deposit	Cultural	CU3	Shell-f (Anodonta)	0	10	330	50	302	393	496	Beta-146237	Culleton et al. 2001	Lokern
KER-48	48	KER-5582, S.R. 46	Surface deposit	Cultural	Collected from ground surface	Shell-m (Tivella)	0	1	1430	40	543	728	916	Beta-146240	Culleton et al. 2001	Nahrub
KER-48	48	KER-5582, S.R. 46	Buried soil	Natural	CU1, east of slough meander, 2Ab	Soil (SOM)	40	50	1410	50	1263	1323	1406	Beta-146667	Culleton et al. 2001	Nahrub
KER-48	48	KER-5582, S.R. 46	Buried soil	Natural	CU1, east of slough meander, 3ABkb	Soil (SOM)	80	90	5780	80	6405	6580	6749	Beta-146668	Culleton et al. 2001	Nahrub
KER-48	48	KER-5582, S.R. 46	Surface deposit	Cultural	STP 21	Shell-m (Olivella)	0	20	1040	40	226	402	613	Beta-146241	Culleton et al. 2001	Nahrub
KER-49	49	KER, Robber's Roost	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	12820	400	13903	15060	16202	A-1762	McCarten and Van Devender, 1988	Jawbone
KER-49	49	KER, Robber's Roost	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	12960	270	14293	15308	16114	A-1761	McCarten and Van Devender, 1988	Jawbone
KER-49	49	KER, Robber's Roost	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	13800	400	15300	16453	17720	A-1763	McCarten and Van Devender, 1988	Jawbone
KER-49	49	KER-6106, Freeman Spring	Surface deposit	Cultural	charred material	Charcoal	0	80	1110	50	931	1021	1141	?	Faull 2006 - SCA via A. Gold	Koehn
KER-49	49	KER-6106, Freeman Spring	Surface deposit	Cultural	charred material	Charcoal	0	80	1110	40	932	1016	1090	?	Faull 2006 - SCA via A. Gold	Koehn
KER-49	49	KER-6106, Freeman Spring	Surface deposit	Cultural	charred material	Charcoal	0	80	1130	60	930	1045	1178	?	Faull 2006 - SCA via A. Gold	Koehn
KER-50	50	KER-1298, Mc Iver's Ridge	Surface deposit	Cultural	Unit 01	Charcoal	10	20	190	70	-4	180	319	UCR-1260	Ambro et al.1981; Gold 2005	Tollhouse
KER-50	50	KER-1298, Mc Iver's Ridge	Surface deposit	Cultural	Unit 04, Feature 02	Charcoal	10	20	295	80	257	361	512	UCR-1258	Ambro et al.1981; Gold 2005	Tollhouse
KER-50	50	KER-1299, Scodie Mts.	Surface deposit	Cultural	Unit 01	Charcoal	20	30	430	80	304	461	557	UCR-1261	Ambro et al.1981; Gold 2005	Tollhouse
KER-51	51	KER-1277, Scodie Mts.	Surface deposit	Cultural	Unit 01	Charcoal	40	50	325	100	255	372	537	UCR-1264	Ambro et al.1981; Gold 2005	Tollhouse 2
KER-52	52	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB11, near intersection of N China Lake Blvd and E French Ave.	Organic sediment	9235	9385	3250	95	3262	3486	3698	AA-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
KER-52	52	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB11, near intersection of N China Lake Blvd and E French Ave.	Organic sediment	14417	14477	10195	150	11270	11877	12396	AA-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
KER-53	53	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB14	Organic sediment	3627	3657	14690	70	17285	17798	18044	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
KER-54	54	KER, Indian Wells Canyon	Buried soil	Natural	Trench 5, distal plain locality	Soil (SOM)	65	75	2510	40	2458	2587	2743	Beta-237065	Young 2007	Cajon
KER-55	55	KER, China Lake	Lacustrine	Natural	Boring ID: TT37-SB03	Organic sediment	1767	1813	16480	80	19478	19667	19832	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
KER-55	55	KER, China Lake	Lacustrine	Natural	From lacustrine silt in drill hole MD-1 of Smith and Pratt 1957	Organic Sediment	655	655	>32000	na				A-0474	RCJ 1967	Playa
KER-55	55	KER, China Lake	Lacustrine	Natural	Surface location: TT13-SL01, N of golf course & Knox Rd; gypsum-rich silty clay hummock dates lake dessication	Organic sediment	44	46	10070	155	11201	11660	12171	AA-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
KER-56	56	KER, Indian Wells Canyon	Buried soil	Natural	Profile IK-01, buried terrace locality	Soil (SOM)	265	275	8790	40	9627	9811	9939	Beta-237061	Young 2007	Cajon
KER-57	57	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB04, west Ridgecrest near Brady and Sydor streets	Organic sediment	1828	1889	19590	300	22524	23337	24130	AA-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
KER-58	58	KER, Indian Wells Canyon	Buried soil	Natural	Profile IK-03, median fan locality	Soil (SOM)	110	120	2790	60	2766	2897	3039	Beta-237062	Young 2007	Cajon
KER-58	58	KER, Indian Wells Canyon	Buried soil	Natural	Trench 1, medial fan buried surface	Soil (SOM)	125	135	9100	40	10194	10246	10300	Beta-237063	Young 2007	Cajon
KER-58	58	KER, Indian Wells Canyon	Buried soil	Natural	Trench 2, medial-distal fan buried surface	Soil (SOM)	50	60	4510	40	5039	5163	5310	Beta-237064	Young 2007	Cajon
KER-59	59	KER, Garces Pit	Buried soil	Natural	2ABkb (top of Garces) in S wall of dentention basin below A/C soil, probably Panoche	Soil (SOM)	50	70	1840	40	1695	1776	1875	Beta-255485	Meyer, Rosenthal, and Young (in progress)	Garces
KER-60	60	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB23, several hundred ft SW of G-1 Tower Rd along old B-29 cutoff rd.	Organic sediment	1249	1309	21590	70	25836	25976	26212	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
KER-60	60	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB23, several hundred ft SW of G-1 Tower Rd along old B-29 cutoff rd.	Organic sediment	5029	5059	18690	60	22125	22264	22407	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
KER-61	61	KIN, Tulare Lake	Lacustrine	Natural	Core 25S/21E-21D; below lower clay, 9 mi N of Lost Hills	Wood (unknown)	1188	1188	26780	600	30744	32068	33392	W-1506	Croft 1968, 1972	Twisselman
KER-62	62	KER, China Lake	Lacustrine	Natural	Stake 1, Trench 2, "flaggy sandstone" w/artifacts ~15 cm above	Organic Sediment	80	90	5975	150	6463	6826	7174	GX-03441	Davis 1978	Playa
KER-62	62	KER, China Lake	Lacustrine	Natural	Stake 1, Trench 3, stratum A-1, suspect date per Davis	Organic Sediment	95	105	10275	165	11394	12044	12659	GX-03442	Davis 1978	Playa
KER-62	62	KER, China Lake	Lacustrine	Natural	Stake 1, Trench 3, stratum A-2, "flaggy sandstone" with artifacts	Organic Sediment	95	105	6775	260	7166	7645	8164	GX-03443	Davis 1978	Playa
KER-62	62	KER, China Lake	Lacustrine	Natural	Stake 1, Trench 3, stratum B, no associated artifacts	Organic Sediment	175	185	9360	365	9552	10634	11629	GX-03444	Davis 1978	Playa
KER-62	62	KER, China Lake	Lacustrine	Natural	Stake 1, Trench 3, stratum C, overlies upper artifact layer	Organic Sediment	65	70	2465	180	2104	2531	2949	GX-03445	Davis 1978	Playa
KER-63	63	KER, China Lake	Lacustrine	Natural	1972 date on in situ bone, Mammoth #4, T25S, R40E, Sec. 28, NE1/4	Bone (mammoth ivory)	0	1	18600	4500	18468	20517	26000	UCLA-01800	Davis 1978	Playa
KER-64	64	KER-1627	Buried soil	Cultural	Trench cut C, strat. Unit A	Soil (SOM)	52	52	2950	70	2926	3119	3335	Beta-012279	Breschini et al. 1985; CRD 1996	Nahrub
KER-64	64	KER-1627	Surface deposit	Cultural	Trench cut C, Strat. Unit E, overlies hardpan with fossil mammal remains	Soil (SOM)	27	27	940	90	685	850	989	Beta-012278	Breschini et al. 1985; CRD 1996	Nahrub
KER-65	65	KER-4620, S.R. 41	Surface deposit	Cultural	N1/W59, Midden	Charcoal	70	80	630	40	549	602	665	Beta-123225	Basgall and Giambastiani 1999	Aido
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. D, CU-05, G2a bead	Shell-m (Olivella)	20	30	2270	40	1336	1574	1814	Beta-227542	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. D, CU-10, G2a/G5 bead	Shell-m (Olivella)	20	30	1690	40	755	980	1212	Beta-227547	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. D, CU-11	Soil (SOM)	50	60	2940	50	2951	3105	3262	Beta-221308	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. II, CU-01	Soil (SOM)	50	60	3540	50	3693	3825	3931	Beta-221305	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. II, CU-01, (reported as Feat. A on pg. 68)	Soil (SOM)	20	30	2490	50	2432	2571	2732	Beta-221304	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. II, CU-05, L2b/L3b bead	Shell-m (Olivella)	70	80	3480	50	2774	3036	3306	Beta-227544	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. II, CU19, B2b bead	Shell-m (Olivella)	50	60	3640	40	2941	3233	3475	Beta-227550	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. II, CU-20, G1 bead	Shell-m (Olivella)	50	60	3440	50	2739	2988	3257	Beta-227552	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. II, CU-21, Feature A, soil/ash	Soil (SOM)	80	90	3190	50	3332	3415	3490	Beta-221311	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. III, CU-01, Locus A3N	Soil (SOM)	90	100	4720	50	5440	5460	5584	Beta-221306	Tiley 2008	Milham

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-02, N2 bead	Shell-m (Olivella)	20	30	4920	50	4601	4900	5238	Beta-227541	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. III, CU-05, introduced fossil horn shell	Shell (Dentalium)	60	70	31400	200	36274	36770	37266	Beta-227543	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-05, thick disk bead	Shell-m (Tivela)	90	100	8120	50	8082	8319	8549	Beta-227545	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-11, B3a bead	Shell-m (Olivella)	110	120	6110	40	5997	6263	6479	Beta-227549	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Natural	Comp. III, CU-11, introduced fossil horn shell	Shell (Dentalium)	40	50	32270	240	37090	37662	38234	Beta-227548	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-20, L2 bead	Shell-m (Olivella)	90	100	4380	50	3865	4174	4448	Beta-227554	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-20, L2a bead	Shell-m (Olivella)	60	70	3690	40	3012	3294	3552	Beta-227553	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-20, N2 bead	Shell-m (Olivella)	20	30	4850	40	4494	4794	5083	Beta-227551	Nicholson per com 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	Comp. III, CU-21, Feature B, hearth	Charcoal (floral)	100	110	5160	50	5842	5919	6002	Beta-221312	Tiley 2008	Milham
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	N17/E84, A1	Charcoal	50	60	2070	50	1920	2041	2152	Beta-123227	Basgall and Giambastiani 1999	Kilmer
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	S15/E91, A2	Charcoal	40	50	2200	50	2107	2224	2339	Beta-123228	Basgall and Giambastiani 1999	Kilmer
KER-65	65	KER-4623, Sunflower	Surface deposit	Cultural	S81/E146, E1	Charcoal	60	75	1750	50	1549	1661	1744	Beta-123226	Basgall and Giambastiani 1999	Polonio
KER-66	66	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB01, far northwestern IWV; alluvial deposits date last Owens River overflow?	Organic sediment	6699	6736	11215	150	12875	13110	13341	AA-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
KIN-01	1	KIN, Croissant Site	Surface deposit	Cultural	Croissant Site south of Utica Road on Dudley Ridge	Shell-f (Anodonta)	0	50	1950	60	1020	1169	1288	nr	Fenenga pc 2009	Sandridge
KIN-01	1	KIN, Dalton Site	Surface deposit	Cultural	Dalton Site south of Utica Road per G. Fenenga (Dr-5 2N3W)	Shell-f (Anodonta)	40	50	1650	50	724	850	958	Beta-070676	Fenenga pc 2009	Rambla
KIN-01	1	KIN, Dalton Site	Surface deposit	Natural	Dalton Site south of Utica Road per G. Fenenga (Dr-9 10N1W)	Shell-f (Anodonta)	20	30	190	50	60	177	233	Beta-070678	Fenenga pc 2009	Rambla
KIN-01	1	KIN, Dalton Site	Surface deposit	Cultural	Dalton Site south of Utica Road per G. Fenenga (Dr-Z #243)	Shell-f (Anodonta)	0	50	1310	70	463	567	668	Beta-061918	Fenenga pc 2009	Rambla
KIN-01	1	KIN, Dalton Site	Surface deposit	Natural	Dalton Site south of Utica Road per G. Fenenga, TU-1 (Dr-7)	Shell-f (Anodonta)	0	10	520	50	497	543	567	Beta-070677	Fenenga pc 2009	Rambla
KIN-01	1	KIN, Sloth Hole	Surface deposit	Natural	Unit 3, south of Utica Road, fossil sloth bone	Bone (mineralized)	30	50	1750	50	1549	1660	1744	nr	Fenenga pc 2009	Houser
KIN-01	1	KIN-32, Witt Locality	Surface deposit	Cultural	Mineralized human bone, Lot #1, collected by Payen?	Bone (human)	30	90	7325	420	7415	8178	9135	UCR-1567A	UCR 1986; Wallace and Riddel 1988; Fenenga 1992; CRD 1996	Houser
KIN-01	1	KIN-32, Witt Locality	Surface deposit	Natural	MPS 13S/21W per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	0	1	830	70	-1	124	254	Beta-097873	Fenenga pc 2009	Homeland
KIN-01	1	KIN-32, Witt Locality	Surface deposit	Natural	MPS 23S/21W per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	0	1	600	60	526	600	666	Beta-097875	Fenenga pc 2009	Homeland
KIN-01	1	KIN-32, Witt Locality	Buried lacustrine	Natural	Snail from intact dune sand 2A/Cox contact below disturbed sand with paleo-artifacts, N bank of Blakely Canal	Shell-f (gastropod)	45	50	2250	30	2156	2232	2266	OS-73446	Meyer, Rosenthal, and Young (in progress)	Homeland
KIN-01	1	KIN-32, Witt Locality	Surface deposit	Natural	Turtle Bay Site south of Utica Road and Dudley Ridge crest	Shell-f (Anodonta)	0	50	800	50	-1	88	153	nr	Fenenga pc 2009	Rambla
KIN-01	1	KIN-32, Witt Locality	Surface deposit	Natural	VDE 127N/25W per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	0	1	130	80	-4	145	292	Beta-097876	Fenenga pc 2009	Houser
KIN-02	2	KIN, Ewe 20	Surface deposit	Natural	Ewe-20 Site south of Utica Road per G. Fenega	Shell-f (Anodonta)	0	50	470	60	427	512	562	nr	Fenenga pc 2009	Houser
KIN-02	2	KIN-32, Witt Locality	Surface deposit	Natural	Corral Site per G. Fenenga (12S/0E), Hopkins Locus 7	Shell-f (Anodonta)	10	20	410	60	417	451	531	Beta-070675	Fenenga pc 2009	Houser
KIN-02	2	KIN-32, Witt Locality	Surface deposit	Natural	Flooterville per G. Fenenga, Hopkins Locus 6	Shell-f (Anodonta)	30	50	300	60	275	378	502	Beta-070679	Fenenga pc 2009	Houser
KIN-02	2	KIN-32, Witt Locality	Surface deposit	Natural	Witt Site per G. Fenenga, Hopkins Locus 5	Shell-f (Anodonta)	10	20	350	60	302	401	506	Beta-061917	Fenenga pc 2009	Houser
KIN-03	3	KIN, Tulare Lake	Buried soil/marsh	Natural	Arroyo Robador fan, CSUB Trench B, Unit 04, N of Kettleman City	Organic Sediment	122	140	2510	70	2430	2577	2745	Beta-170148	Negrini and Wigand in Gardner 2002	Rambla
KIN-03	3	KIN, Tulare Lake	Buried soil/marsh	Natural	Arroyo Robador fan, CSUB Trench B, Unit 04, N of Kettleman City	Organic Sediment	122	140	3340	80	3393	3579	3729	Beta-170143	Negrini and Wigand in Gardner 2002	Houser
KIN-04	4	KIN, Tulare Lake	Lacustrine	Natural	Rambla Shoreline, DWR Trench 2	Bone (fish)	53	74	100	50	9	119	151	Beta-170147	Negrini et al. 2006	Westcamp
KIN-04	4	KIN, Tulare Lake	Buried marsh	Natural	Rambla Shoreline, DWR Trench 2	Organic Sediment	185	195	5900	35	6651	6719	6795	WW-5304	Negrini et al. 2006	Westcamp
KIN-04	4	KIN, Tulare Lake	Lacustrine	Natural	Rambla Shoreline, DWR Trench 2	Charcoal	210	210	7250	35	7997	8077	8166	WW-5305	Negrini et al. 2006	Westcamp
KIN-04	4	KIN, Tulare Lake	Lacustrine	Natural	Rambla Shoreline, DWR Trench 2a, Unit 10	Bone (fish, Sac. sucker)	53	74	180	50	60	173	233	Beta-170150	Negrini and Wigand in Gardner 2002	Westcamp
KIN-04	4	KIN, Tulare Lake	Lacustrine	Natural	Rambla Shoreline, DWR Trench 2a, Unit 7b	Shell-f (gastropod)	101	101	820	40	-1	99	229	Beta-170149	Negrini and Wigand in Gardner 2002	Westcamp
KIN-04	4	KIN, Tulare Lake	Buried soil/marsh	Natural	Rambla Shoreline, DWR Trench 2b, Unit 04	Organic Sediment	207	207	6190	40	6974	7085	7178	Beta-170151	Negrini and Wigand in Gardner 2002	Westcamp
KIN-04	4	KIN-80, Tulare Basin	Buried soil	Natural	2Ab w/cultural, burn layer above sand	Charcoal (sunflower)	130	130	0	10	-5	-4	0	OS-70223	Meyer, Rosenthal, and Young (in progress)	Westcamp
KIN-04	4	KIN-80, Tulare Basin	Buried alluvium	Natural	Rambla Shoreline Ditch Exposure	Shell-f (Anodonta)	106	106	2880	40	2096	2214	2322	Beta-167851	Gardner 2002; Gardner et al. 2005	Westcamp
KIN-04	4	KIN-80, Tulare Basin	Buried soil	Cultural	Rambla Shoreline Ditch Exposure	Bone (human)	177	177	4360	70	4827	4954	5077	Beta-167852	Gardner 2002; Gardner et al. 2005	Westcamp
KIN-04	4	KIN-80, Tulare Basin	Buried soil	Cultural	Shell and Charcoal layer at base of canal on west side	Shell-f (freshwater)	240	250	8070	80	8694	8971	9147	OS-70224	Meyer, Rosenthal, and Young (in progress)	Wasco
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Blakeley Canal Silt	Organic Sediment	80	90	2030	80	1818	1997	2160	A-5412	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Buried soil/marsh	Natural	Core 2, Blakeley Canal Silt	Organic Sediment	220	230	6770	110	7438	7629	7829	A-5413	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Blakeley Canal Silt	Organic Sediment	326	366	9100	160	9739	10265	10675	A-5414	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Blakeley Canal Silt	Organic Sediment	420	440	9460	220	10195	10755	11273	A-5415	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Blakeley Canal Silt	Organic Sediment	605	615	10110	350	10763	11770	12788	A-5416	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Chatom Silt	Organic Sediment	615	625	18370	230	21122	21816	22364	A-5835	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Chatom Silt	Organic Sediment	660	670	20250	310	23478	24272	25339	A-5836	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Chatom Silt	Organic Sediment	733	746	23850	400	27620	28566	29512	A-5837	Davis 1999	Tulare
KIN-05	5	KIN, Tulare Lake	Lacustrine	Natural	Core 2, Chatom Silt	Organic Sediment	765	770	24080	280	28138	28824	29510	A-5890	Davis 1999	Tulare
KIN-06	6	KIN, Tulare Lake	Buried marsh	Natural	Hole 7, Basal peat layer of Chatom silt (preferred date)	Peat	890	890	25650	140	30464	30852	31240	USGS-1500	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Buried marsh	Natural	Hole 7, Basal peat layer of Chattom silt (suspect date)	Peat	890	890	22210	350	25857	26705	27553	Beta-004355	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Lacustrine	Natural	Hole 7, base of inferred channel	Wood (unknown)	1270	1270	27700	500	31943	33047	34151	USGS-1501	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Buried channel	Natural	Hole 7, top of inferred channel	Wood (unknown)	920	920	25900	380	30240	31120	32000	USGS-1495	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Buried marsh	Natural	Hole 8, Base of Chatom Silt	Peat	810	810	24930	90	29523	29923	30323	USGS-1497	Atwater et al. 1986	Tulare

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
KIN-06	6	KIN, Tulare Lake	Lacustrine	Natural	Hole 8, marsh finging a small, shallow, ancestral Tulare Lake	Organic Sediment (silt)	1660	1660	35210	620	39325	40535	41745	USGS-1503	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Buried marsh	Natural	Hole 8, marsh finging a small, shallow, ancestral Tulare Lake	Peat	2250	2250	39500	580	43212	44288	45364	USGS-1504	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Lacustrine	Natural	Hole 8, marsh finging a small, shallow, ancestral Tulare Lake	Organic Sediment (muck)	1410	1410	39700	875	42889	44465	46041	USGS-1498	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Buried marsh	Natural	Hole 8, marsh finging a small, shallow, ancestral Tulare Lake	Peat	2190	2190	41120	810	44236	45708	47180	USGS-1499	Atwater et al. 1986	Tulare
KIN-06	6	KIN, Tulare Lake	Lacustrine	Natural	Hole 8, marsh fringe of small, shallow, ancestral Tulare Lake	Organic Sediment (muck)	1770	1870	45000	1000	48137	50137	52137	USGS-1496	Atwater et al. 1986	Tulare
KIN-07	7	KIN, Tulare Lake	Lacustrine	Natural	Hole 9, desiccated muck above Blakely Canal silt	Organic Sediment (muck)	280	300	8180	45	9016	9125	9268	USGS-1494	Atwater et al. 1986	Tulare
KIN-08	8	KIN, Tulare Lake, 10th St Canal	Buried soil/lacustrine	Natural	2Akb, dessicated lake soil, W wall of 10th St. Canal, below Tulare clay	Soil (SOM)	100	130	7530	40	8299	8358	8411	OS-72699	Meyer, Rosenthal, and Young (in progress)	Tulare
KIN-08	8	KIN, Tulare Lake, 10th St Canal	Lacustrine	Natural	3Cg, uppermost lacustrine in W wall of 10th St. Canal, below Tulare clay	Soil (SOM)	160	190	8970	40	10118	10161	10230	OS-72700	Meyer, Rosenthal, and Young (in progress)	Tulare
KIN-08	8	KIN, Tulare Lake, Omaha Canal	Buried soil	Natural	2Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	70	80	11930	60	13667	13793	13946	Beta-255484	Meyer, Rosenthal, and Young (in progress)	Lethent
KIN-08	8	KIN, Tulare Lake, Omaha Canal	Buried soil	Natural	3Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	135	145	11800	85	13435	13656	13820	OS-72701	Meyer, Rosenthal, and Young (in progress)	Lethent
KIN-08	8	KIN, Tulare Lake, Omaha Canal	Buried soil	Natural	5Ab, in S wall of irrigation canal below Lethent soil as mapped	Soil (SOM)	165	175	11550	85	13241	13394	13614	OS-72702	Meyer, Rosenthal, and Young (in progress)	Lethent
KIN-08	24	KIN, Tulare Lake, Omaha Canal	Surface deposit	Natural	Whole shell in growth position at contact of Cu horizon with 2Ab	Shell-f (Anodonta)	50	60	200	20	145	177	215	OS-73445	Meyer, Rosenthal, and Young (in progress)	Lethent
KIN-09	9	KIN, Tulare Lake	Buried soil/marsh	Natural	Lake Basin, CSUB Trench E, Unit 04	Organic Sediment	71	76	2370	40	2331	2412	2494	Beta-170145	Negrini and Wigand in Gardner 2002	Tulare
KIN-09	9	KIN, Tulare Lake	Buried soil/marsh	Natural	Lake Basin, CSUB Trench E, Unit 04	Organic Sediment	71	76	2410	40	2345	2446	2542	Beta-170144	Negrini and Wigand in Gardner 2002	Tulare
KIN-09	9	KIN, Tulare Lake	Lacustrine	Natural	Lake Basin, CSUB Trench E, Unit 04	Shell-f (Anodonta)	71	76	2740	40	1898	2032	2149	Beta-170146	Negrini and Wigand in Gardner 2002	Tulare
KIN-10	10	KIN, LTNS-C12-1	Surface deposit	Cultural	Column sample from TEU1, Stratum II	Shell-f (Anodonta)	20	30	1750	70	786	960	1131	Beta-184260	Chatters, Fogerty	Garces
KIN-10	10	KIN, LTNS-C12-1	Surface deposit	Cultural	Trench 1, Feature 01, soil from base of Stratum II	Soil (SOM)	30	33	2005	35	1876	1955	2044	SR-6594	Chatters, Fogerty	Garces
KIN-11	11	KIN-66, Redtfeldt Mound	Surface deposit	Cultural	TU-1, freshwater clam shell	Shell-f (freshwater)	100	110	910	60	0	193	313	Beta-097873	Fenenga 1996; Siefkin 1999	Grangeville
KIN-11	11	KIN-66, Redtfeldt Mound	Surface deposit	Cultural	TU-2, freshwater clam shell	Shell-f (freshwater)	20	30	1210	60	365	491	618	Beta-098147	Siefkin 1999	Grangeville
KIN-11	11	KIN-66, Redtfeldt Mound	Surface deposit	Cultural	TU-4, freshwater clam shell	Shell-f (Anodonta)	20	30	740	60	-2	63	198	Beta-098148	Siefkin 1999	Grangeville
KIN-11	11	KIN-66, Redtfeldt Mound	Surface deposit	Cultural	TU-4, freshwater clam shell	Shell-f (freshwater)	50	60	1460	70	537	679	824	Beta-098149	Siefkin 1999	Grangeville
KIN-11	11	KIN-66, Redtfeldt Mound	Surface deposit	Cultural	TU-5, freshwater clam shell	Shell-f (freshwater)	20	30	900	40	57	190	290	Beta-098150	Siefkin 1999	Grangeville
KIN-12	12	KIN, Lemoore Air Station	Buried soil	Natural	Trench 1, Strat. 2, 2Ab/C, W of Boggs Slough, top of Lethent?	Soil (SOM)	195	210	11970	90	13652	13835	14032	Beta-137204	Milliken and Young 2000	Gepford
MAD-01	1	MAD, Firebaugh	Buried soil	Natural	East bank of San Joaquin River, 2Ab below Foster series	Soil (SOM)	75	90	2050	70	1926	2014	2118	OS-70227	Meyer, Rosenthal, and Young (in progress)	Foster
MAD-01	1	MAD, Firebaugh	Buried soil	Natural	East bank of San Joaquin River, 3Ab below Foster series	Soil (SOM)	110	130	3160	20	3355	3385	3415	OS-71201	Meyer, Rosenthal, and Young (in progress)	Foster
MAD-01	1	MAD, Firebaugh	Buried soil	Natural	East bank of San Joaquin River, 4Ab below Foster series	Soil (SOM)	220	240	4570	60	5268	5286	5323	OS-70228	Meyer, Rosenthal, and Young (in progress)	Foster
MAD-02	2	MAD, Cottonwood Creek	Buried soil	Natural	2Ab in west bank of T2 terrace below Hanford series	Soil (SOM)	60	80	1210	20	1064	1131	1179	OS-71200	Meyer, Rosenthal, and Young (in progress)	Hanford
MAD-02	2	MAD, Cottonwood Creek	Buried soil	Natural	2Ab of Atwater series in south bank of T3 terrace below Hanford series as mapped	Soil (SOM)	80	100	3390	25	3574	3637	3693	OS-71316	Meyer, Rosenthal, and Young (in progress)	Hanford
MAD-02	2	MAD, Cottonwood Creek	Buried soil	Natural	3ABtb in south bank of T3 terrace below Atwater series (too young?)	Soil (SOM)	210	230	3620	20	3867	3929	3982	OS-71416	Meyer, Rosenthal, and Young (in progress)	Hanford
MAD-02	2	MAD, Cottonwood Creek	Buried soil	Natural	3ABtb in west bank at base of T2 Hanford terrace	Soil (SOM)	150	170	1930	15	1858	1878	1902	OS-71315	Meyer, Rosenthal, and Young (in progress)	Hanford
MAD-03	3	MAD, Chowchilla Canal	Buried soil	Natural	2ABtb, east wall of canal below Fresno soil as mapped	Soil (SOM)	310	330	15900	70	18936	19079	19281	Beta-255480	Meyer, Rosenthal, and Young (in progress)	Fresno
MAD-04	4	FRE, Fresno River	Buried soil	Natural	Fresno River, T2, N bank, 2Ab	Soil (SOM)	130	150	3730	170	3859	4089	4300	OS-70244	Meyer, Rosenthal, and Young (in progress)	Visalia
MAD-04	4	FRE, Fresno River	Buried soil	Natural	Fresno River, T2, N bank, 3Ab	Soil (SOM)	315	330	4840	20	5581	5592	5609	OS-71154	Meyer, Rosenthal, and Young (in progress)	Visalia
MAD-04	4	FRE, Fresno River	Buried soil	Natural	Fresno River, T2, N bank, 4Ab	Soil (SOM)	340	360	6060	25	6849	6918	6992	OS-71155	Meyer, Rosenthal, and Young (in progress)	Visalia
MAD-04	4	FRE, Fresno River	Buried soil	Natural	Fresno River, T2, w/n bank, 5Ab	Soil (SOM)	400	420	7020	260	7606	7846	8053	OS-70242	Meyer, Rosenthal, and Young (in progress)	Visalia
MAD-04	4	MAD-173, Madera Lake	Surface deposit	Cultural	?	Bone (collagen)	94	94	250	130	57	279	500	UCR-0280C	UCR 1981; CRD 1996	(Hill/Ridge)
MAD-04	4	MAD-173, Madera Lake	Surface deposit	Cultural	Feature 043	Charcoal	76	91	170	10	169	189	216	UCR-0306	UCR 1986; CRD 1996	(Hill/Ridge)
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	?	Bone (Canis)	40	60	100	10	88	119	256	UCR-1173	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Burial 75	Charcoal	50	60	295	130	59	328	523	UCR-0373	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Burial 75-6	Charcoal	60	80	855	140	620	797	1014	UCR-0370	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-14	Charcoal	80	100	150	15	6	187	224	UCR-0379	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-16B	Charcoal	40	50	580	90	466	591	693	UCR-0374	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-18	Charcoal	30	40	3075	170	2846	3258	3643	UCR-0372	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-23	Charcoal	80	100	1620	160	1260	1538	1896	UCR-0371	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-29	Charcoal	20	30	280	140	55	310	517	UCR-0376	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-32	Charcoal	30	40	150	15	6	187	224	UCR-0375	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-6B	Charcoal	60	80	150	15	6	187	224	UCR-0377	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Feat 75-7	Charcoal	40	60	460	140	267	472	685	UCR-0378	Martz nd; CRD 1996	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Housepit 15	Charcoal	120	140	430	110	283	452	656	UCLA-1920A	RCJ 1983	Ahwahnee
MAD-05	5	MAD-179, Madera Lake	Surface deposit	Cultural	Housepit 15	Charcoal	140	160	1000	300	458	948	1538	UCLA-1920B	RCJ 1983	Ahwahnee
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	3	Charcoal	30	40	220	70	58	209	334	UCR-1062	UCR 1986; CRD 1996	Auberry family
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	8	Charcoal	30	40	315	70	272	382	510	UCR-1063	UCR 1986; CRD 1996	Auberry family
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	19	Charcoal	40	50	420	70	308	455	543	UCR-1064	UCR 1986; CRD 1996	Auberry family

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	21	Charcoal	40	50	820	80	659	755	920	UCR-1065	UCR 1986; CRD 1996	Auberry family
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	25	Charcoal	30	40	480	70	426	517	568	UCR-1066	UCR 1986; CRD 1996	Auberry family
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	38	Charcoal	30	40	340	70	284	395	513	UCR-1067	UCR 1986; CRD 1996	Auberry family
MAD-06	6	MAD-289, Fish Creek	Surface deposit	Cultural	38	Charcoal	50	60	450	70	314	487	558	UCR-1068	UCR 1986; CRD 1996	Auberry family
MAD-06	6	MAD-293, Kerckhoff Lake	Surface deposit	Cultural	5	Charcoal	70	80	570	70	508	591	664	UCR-1070	UCR 1986; CRD 1996	Ahwahnee family
MAD-06	6	MAD-293, Kerckhoff Lake	Surface deposit	Cultural	19	Charcoal	70	80	590	70	515	597	668	UCR-1069	UCR 1986; CRD 1996	Ahwahnee family
MAD-06	6	MAD-293, Kerckhoff Lake	Surface deposit	Cultural	26	Charcoal	50	60	1020	80	738	933	1086	UCR-1061	UCR 1986; CRD 1996	Ahwahnee family
MAD-07	7	MAD, Chowchilla River	Buried soil	Natural	Chowchilla River, T1 below Tujunga, s bank, 2Ab	Soil (SOM)	120	140	1260	50	1168	1217	1279	OS-70225	Meyer, Rosenthal, and Young (in progress)	Tujunga
MAD-07	7	MAD, Chowchilla River	Buried soil	Natural	Chowchilla River, T1, base of Tujunga, s bank, Cu	Soil (SOM)	95	110	0	10	-5	-4	0	OS-70226	Meyer, Rosenthal, and Young (in progress)	Tujunga
MAD-08	8	MAD-106, Buchanan Res.	Surface deposit	Cultural	Burial 01	Bone (unknown)	150	150	2000	80	1771	1961	2151	UCR-0118O/UCLA-1860O	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-106, Buchanan Res.	Surface deposit	Cultural	Burial 11	Bone (unknown)	nr	nr	1740	100	1415	1658	1872	UCR-0118E/UCLA-1860E	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-106, Buchanan Res.	Surface deposit	Cultural	Burial 24	Bone (unknown)	150	150	1650	80	1358	1552	1727	UCLA-1860D	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-106, Buchanan Res.	Surface deposit	Cultural	Burial 33	Bone (unknown)	150	150	1010	80	733	921	1080	UCR-01181/UCLA-1860i	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-106, Buchanan Res.	Surface deposit	Cultural	E-100	Charcoal	30	60	505	95	423	532	666	I-05369	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-106, Buchanan Res.	Surface deposit	Cultural	H-103	Charcoal	60	80	715	95	528	669	798	I-05370	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-107, Buchanan Res.	Surface deposit	Cultural	G-96	Charcoal	20	40	285	90	252	340	511	I-05371	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-107, Buchanan Res.	Surface deposit	Cultural	G-96	Charcoal	100	110	1265	95	975	1181	1331	I-04528	Moratto 1970; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 08	Bone (collagen)	70	70	1305	80	1055	1218	1354	UCR-0118L	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 16, N26/E15	Bone (collagen)	100	100	1745	100	1478	1663	1876	UCR-0118G/UCLA-1860g	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 20	Bone (collagen)	70	70	1310	80	1056	1223	1365	UCR-0118K	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 21, N15/E15	Bone (collagen)	120	120	970	80	727	870	1014	UCR-0118F	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 36	Bone (collagen)	70	70	1425	80	1229	1338	1518	UCR-0118N	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 44	Bone (collagen)	70	70	2750	90	2723	2870	3081	UCR-0118B/UCLA-1860b	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 59	Bone (collagen)	70	70	1470	100	1220	1381	1568	UCR-0118C	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	Burial 72-20, 511 and 611, burnt bone	Bone (collagen)	79	79	1740	110	1404	1658	1894	I-05361	Moratto 1970a, 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	N17/E13	Charcoal (oak)	17	30	245	100	240	277	491	I-03147	Moratto 1972; King 1968; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-117, Buchanan Res.	Surface deposit	Cultural	N19/E13	Charcoal	70	70	840	370	252	814	1418	I-03146	Moratto 1972; King 1968; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-133	Surface deposit	Cultural	Burial 01	Bone (collagen)	85	85	830	125	618	775	970	GX-04285	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-133	Surface deposit	Cultural	Burial 02	Bone (collagen)	nr	nr	960	120	672	873	1092	GX-04286	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-133	Surface deposit	Cultural	Burial 03	Bone (collagen)	70	70	1495	150	1072	1413	1719	GX-04291	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-133	Surface deposit	Cultural	Burial 05	Bone (collagen)	70	70	1055	130	732	979	1190	GX-04287	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	Burial 02	Charcoal	110	110	1690	155	1300	1609	1929	I-05367	Moratto 1972; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	Burial 05	Bone (collagen)	100	100	1540	110	1278	1449	1697	UCR-0188J	RCJ 1974; Moratto 1984	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	Burial 06	Bone (collagen)	100	100	1630	80	1355	1527	1708	UCR-0188P	RCJ 1974; Moratto 1984	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	Burial 13	Bone (collagen)	100	100	1400	90	1168	1316	1521	UCR-0188H	RCJ 1974	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	Burial 52	Bone (collagen)	100	100	1690	100	1377	1602	1825	UCR-0188A/UCLA-1860A	RCJ 1974; Moratto 1984	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	Burial 68-03, HP-9, on bedrock	Charcoal	54	54	1800	95	1520	1727	1948	I-05363	Moratto 1984	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	GZ-50, 43 cm below "power trench"	Charcoal (oak)	150	150	1840	95	1549	1770	1952	I-00562	Moratto 1969; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	X-1, Burial 01, next to house floor and ash	Bone (collagen)	35	35	105	120	-5	158	324	GX-04289	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	X-2, Burial 03, below house floor and ash w/many grave goods	Bone (collagen)	110	110	760	130	532	717	928	GX-04290	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-08	8	MAD-159, Buchanan Res.	Surface deposit	Cultural	X-2, Burial 03, below house floor and ash w/many grave goods	Bone (collagen)	110	110	810	125	551	759	955	GX-04288	Peak 1976; CRD 1996	(Hill/Ridge)
MAD-09	9	MAD-153, Chapman Creek	Surface deposit	Cultural	Hearth with horse bones	Charcoal	30	30	185	10	166	178	284	I-05364	Moratto 1972; CRD 1996	Ahwahnee
MAD-09	9	MAD-239, Buchanan Res.	Surface deposit	Cultural	N-3	Charcoal (Gray pine nut)	60	110	810	95	640	752	927	I-05365	Moratto 1972; CRD 1996	Ahwahnee
MAD-09	9	MAD-239, Buchanan Res.	Surface deposit	Cultural	O-4	Charcoal	100	120	505	95	423	532	666	I-05368	Moratto 1972; CRD 1996	Ahwahnee
MAD-10	10	MAD-223, Crane Valley	Surface deposit	Cultural	L-11-4-SW	Charcoal	40	40	2200	160	1863	2202	2549	UCR-0413	UCR 1986; CRD 1996	Holland family
MAD-10	10	MAD-223, Crane Valley	Surface deposit	Cultural	L-I-23-NE	Charcoal (pine nut)	25	25	625	150	422	610	803	UCR-0414	UCR 1986; CRD 1996	Holland family
MAD-10	10	MAD-223, Crane Valley	Surface deposit	Natural	S217/E208, from undifferentiated midden	Soil (SOM)	20	30	1120	60	928	1035	1175	Beta-025800	Goldberg and Skinner 1990	Holland family
MAD-10	10	MAD-223, Crane Valley	Buried soil	Natural	S217/E208, from upper part of deepest cultural stratum (IV)	Soil (SOM)	130	140	4260	80	4568	4817	4988	Beta-025801	Goldberg and Skinner 1990	Holland family
MAD-10	10	MAD-244, Crane Valley	Surface deposit	Natural	Unit 11 (S290/E335), median age of undifferentiated midden w/ steatite frag.	Soil (SOM)	50	60	3030	70	3058	3230	3381	Beta-025799	Goldberg and Skinner 1990	(Hill/Ridge)
MAD-10	10	MAD-392, Crane Valley	Surface deposit	Natural	Unit 05, base of undifferentiated midden	Soil (SOM)	80	85	1610	70	1353	1499	1631	Beta-025802	Goldberg and Skinner 1990	(Hill/Ridge)
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Buried log	Wood (Sequoia)	nr	nr	9320	90	10254	10518	10729	Beta-052239	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Buried, distal seqouia log	Wood (Sequoia)	150	150	9830	290	10485	11321	12245	GX-13339	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Buried, proximol log 1	Wood (Calocedrus decurrens)	nr	nr	2185	80	1998	2191	2343	GX-13337	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Buried, proximol log 2	Wood (unknown)	nr	nr	10010	300	10713	11624	12425	GX-13338	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Core 4	Soil (SOM)	375	390	5610	130	6178	6412	6730	Beta-049150	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Nichols Meadow	Soil (SOM)	215	215	6110	80	6780	6994	7177	Beta-049152	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Nichols Meadow	Soil (SOM)	425	425	11560	80	13253	13402	13614	Beta-039275	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried meadow	Natural	Sequoia section	Wood (unknown)	230	240	12350	90	14021	14352	14827	Beta-049151	Koehler and Anderson 1994	Chaix family
MAD-11	11	MAD, Nichols Meadow	Buried soil	Natural	Sequoia section	Soil (SOM)	330	330	17490	90	20368	20642	21029	Beta-046007	Koehler and Anderson 1994	Chaix family
MAD-12	12	MAD, Beasore Meadow	Buried meadow	Natural	Beasore Creek on upper Chiquito Creek; Sierra National Forest	Wood (fir log)	380	381	7705	90	8343	8499	8660	UGa-0674	Wood 1975	Aquic Dystric Xerochrepts

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MAD-13	13	MAD-448, Granite Creek	Surface deposit	Cultural	Unit 01	Charcoal	50	60	300	10	378	403	427	UCLA-2348A	Jackson 1983; Peak 1981; CRD 1996	Sirretta family
MAD-13	13	MAD-448, Granite Creek	Surface deposit	Cultural	Unit 01	Charcoal	90	100	4840	650	3837	5486	7003	UCLA-2348B	Jackson 1983; Peak 1981; CRD 1996	Sirretta family
MAD-14	14	MAD, Inyo Craters, Red Cones	Buried soil	Natural	Site RCJ0001, glacial deposit (3Ab) below Red Cones tephra	Charcoal (log or branch)	90	92	9325	83	10268	10526	10722	AA-40297	Deming 2002	Xeric Vitricryands
MAD-15	15	MAD, Devil's Postpile	Buried soil	Natural	Loamy soil in gully ~20m W of Rd; below 3rd ash layer (max. age)	Charcoal	280	280	3375	140	3331	3632	3984	UGa-0449	Brandau and Noakes (1975) RCJ	Salt Chuck family
MAD-15	15	MAD, Mineret Summit	Buried deposit	Natural	Base of pumice bed underlain by glacial till in E wall of pumice quarry	Wood (charred)	65	75	1040	250	542	977	1406	W-2981	Kelly, Spiker, and Rubin 1978; Wood 1983	Vitrandic Cryorthents 2
MAD-15	15	MAD, Starkweather Lake	Lacustrine	Natural	Piston core, obtained 10/13/2001	Organic Sediment	291	292	9410	50	10511	10640	10756	Beta-164175	MacDonald et al. 2008	Rock outcrop-Rubble land 2
MAD-15	15	MAD, Starkweather Lake	Lacustrine	Natural	Piston core, obtained 10/13/2001	Wood (twig fragment)	301	301	10300	70	11805	12108	12392	Beta-160790	MacDonald et al. 2008	Rock outcrop-Rubble land 2
MAD-15	15	MAD, Starkweather Lake	Lacustrine	Natural	Piston core, obtained 10/13/2001	Organic Sediment	312	313	11490	50	13240	13334	13432	Beta-161881	MacDonald et al. 2008	Rock outcrop-Rubble land 2
MAD-15	15	MAD, Starkweather Lake	Lacustrine	Natural	SP (4)	Organic Sediment	213	213	10879	150	12600	12869	13140	AA-01133	Anderson 1990	Rock outcrop-Rubble land 2
MAD-16	16	MAD, Garnet Lake	Lacustrine	Natural	Ritter Range, Core: UGL-2	Organic Sediment (gyttja)	158	158	3420	50	3561	3676	3832	8.7	Clark and Gillespie 1997	Typic Cryorthents, volcanic 2
MAD-16	16	MNO, Garnet Lakes	Lacustrine	Natural	UGL-2, basal	Organic Sediment (gyttja)	191	158	3420	50	3561	3676	3832	CAMS-UGL-C-1	Clark and Gillespie 1997	Typic Cryorthents, volcanic 2
MER-01	1	SBN, Little Panoche Valley	Surface deposit	Natural	Trench 1 across graben of Ortigalita fault	Charcoal	-	-	900	90	675	823	962	?	Anderson, Anders, and Ostenaa 1982	Anela
MER-02	2	MER-323, SE of Los Banos	Surface deposit	Cultural	Burial 11	Bone (human)	?	?	1680	70	1406	1589	1738	Beta-056426	Dougherty et al. 1993	ALROS
MER-02	2	MER-323, SE of Los Banos	Surface deposit	Cultural	Burial 20	Bone (deer antler?)	?	?	2230	60	2112	2231	2350	Beta-056430	Dougherty et al. 1993	ALROS
MER-02	2	MER-323, SE of Los Banos	Surface deposit	Cultural	Burial 21	Bone (human)	?	?	1760	60	1541	1675	1821	Beta-056427	Dougherty et al. 1993	ALROS
MER-02	2	MER-323, SE of Los Banos	Surface deposit	Cultural	Burial 58b	Bone (human)	?	?	1880	80	1614	1817	1994	Beta-056428	Dougherty et al. 1993	ALROS
MER-02	2	MER-323, SE of Los Banos	Surface deposit	Cultural	Burial 61	Bone (human)	?	?	1880	70	1691	1818	1953	Beta-056429	Dougherty et al. 1993	ALROS
MER-03	3	MER-003	Surface deposit	Cultural	Burial 14, Housepit 2	Charcoal	?	?	185	19	145	181	215	I-03164	Pritchard 1970	(Fan/Floodplain)
MER-04	4	MER, San Luis Dam	Surface deposit	Natural	Channel at O'Neil Forebay	Soil (SOM)	70	70	3370	180	3207	3633	4094	GX-0?	Price 1982	BALLVAR
MER-04	4	MER, San Luis Dam	Surface deposit	Natural	Channel at O'Neil Forebay	Soil (SOM)	60	70	3395	180	3239	3663	4102	GX-0?	Price 1982	BALLVAR
MER-04	4	MER, San Luis Dam	Surface deposit	Natural	Channel at O'Neil Forebay	Soil (SOM)	90	110	5686	210	5994	6501	6978	GX-0?	Price 1982	BALLVAR
MER-04	4	MER, San Luis Dam	Surface deposit	Natural	Channel at O'Neil Forebay	Soil (SOM)	70	70	11360	300	12801	13262	13838	GX-0?	Price 1982	BALLVAR
MER-04	4	MER, San Luis Dam	Surface deposit	Natural	Creek terrace; Patterson Alluvium	Shell-f (gastropod)	50	50	2415	190	1261	1658	2108	Beta-001602	Lettis 1982, 1985	BALLVAR
MER-04	4	MER, San Luis Dam	Buried alluvium	Natural	Dam axis, Charcoal rich-layer in blue clay with cammel, horse, and mammoth remains	Charcoal	2590	2590	36000	500	40300	41258	42216	UCLA-0740	Taylor 1975 (RCJ)	BALLVAR
MER-04	4	MER, San Luis Dam	Buried alluvium	Natural	O'Neil Forebay	Soil (SOM)	-	-	22960	675	25990	27558	29126	GX-0?	Price 1982	BALLVAR
MER-07	7	MER-094S	Surface deposit	Cultural	lower midden	Charcoal	200	220	645	90	513	614	731	I-03166	Olsen and Payen 1969	(Fan/Floodplain)
MER-07	7	MER-094S	Surface deposit	Cultural	yellow cemented sand terrace	Charcoal	220	240	2400	100	2303	2481	2742	I-03167	Olsen and Payen 1969	(Fan/Floodplain)
MER-08	8	MAD, Berenda Creek	Buried soil	Natural	2Ab of Pachappa series in E cutbank above Greenfield (Pachappa mapped at surface incorrect)	Soil (SOM)	80	100	3010	120	3059	3208	3360	OS-72823	Meyer, Rosenthal, and Young (in progress)	Pachappa
MER-08	8	MAD, Berenda Creek	Buried soil	Natural	3Btb, in E cutbank, eroded top of Greenfield over Riverbank and below Pachappa; min-age for Greenfield	Soil (SOM)	130	150	4570	40	5052	5233	5325	Beta-255479	Meyer, Rosenthal, and Young (in progress)	Pachappa
MER-09	9	MER, Detention Basin	Buried soil	Natural	2ABtkb-horizon exposed in south wall of recently excavated basin, northwest of Ave. 26 and S. Bliss Rd. intersection	Soil (SOM)	150	170	13100	150	15158	15490	15866	OS-70229	Meyer, Rosenthal, and Young (in progress)	Traver
MER-09	9	MER, Detention Basin	Buried soil	Natural	3ABtb-horizon exposed in south wall of recently excavated basin, northwest of Ave. 26 and S. Bliss Rd. intersection	Soil (SOM)	260	280	21900	110	26034	26352	26670	OS-70230	Meyer, Rosenthal, and Young (in progress)	Traver
MER-10	10	MER-0415, Wolfsen Road	Buried alluvium	Natural	Trench 7, Strat. I, horizon 6Ab-6Bktb	Soil (SOM)	120	140	1100	40	929	1008	1084	Beta-192393	Gardner 2005	Hilmar
MER-10	10	MER-0415, Wolfsen Road	Buried alluvium	Natural	Trench 7, Strat. III, horizon 4Bkb	Soil (SOM)	140	160	2100	40	1985	2073	2155	Beta-192395	Gardner 2005	Hilmar
MER-10	10	MER-0415, Wolfsen Road	Buried alluvium	Natural	Trench 7, Strat. V, horizon 2Ab	Soil (SOM)	80	100	810	40	673	723	790	Beta-192394	Gardner 2005	Hilmar
MER-11	11	MER, Bear Creek in Merced	Buried soil	Natural	Strat III, 2Ab horizon, N cutbank	Soil (SOM)	400	420	2740	70	2741	2848	3004	Beta-185709	Rosenthal and Meyer 2004 (b)	Honcut
MER-11	11	MER, Bear Creek in Merced	Buried soil	Natural	Strat. I, 4ABtb horizon, N cutbank	Soil (SOM)	600	610	3290	40	3442	3519	3630	Beta-185708	Rosenthal and Meyer 2004 (b)	Honcut
MER-12	12	MER, Bear Creek near Merced	Surface deposit	Natural	Channel? SW of North Orchard and Lateral rds.	Charcoal	72	72	520	200	251	515	801	W-3249	Price 1982	Wyman
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Cultural	13-14N/42-43E	Charcoal	30	40	1870	80	1611	1804	1990	UCLA-2135E	Peak and Weber 1978	PEDCAT
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Cultural	19-20S/50-51E	Charcoal	30	40	1900	100	1601	1840	2065	UCLA-2135G	Peak and Weber 1978	PEDCAT
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Cultural	21-22S/21-22E	Charcoal	40	50	1935	80	1700	1883	2066	UCLA-2135B	Peak and Weber 1978	PEDCAT
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Cultural	6-7S/18-19E	Charcoal	20	30	700	80	537	654	772	UCLA-2135F	Peak and Weber 1978	PEDCAT
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Natural	Above Burial 25, probably instrusive	Wood (bark)	nr	nr	<300	na				UCLA-2178A	Berger in Peak 1979	PEDCAT
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Cultural	Housepit 1, NW quad, 3S/29E, fire pit	Charcoal	20	30	620	60	533	603	671	UCLA-2135A	Peak and Weber 1978	PEDCAT
MER-13	13	MER-0215, Wolfsen Mound	Surface deposit	Cultural	Unit 76-77s/48E	Charcoal	20	30	1340	80	1069	1254	1384	UCLA-2178B	Berger in Peak 1979	PEDCAT
MER-14	14	MER, Dry Creek at Oakdale Rd.	Buried soil	Natural	PM-2, Strat I, 2Ab horizon, PM-2	Soil (SOM)	245	265	2780	70	2757	2890	3066	Beta-185707	Rosenthal and Meyer 2004 (b)	Bear Creek
MER-14	14	MER, Dry Creek at Oakdale Rd.	Buried soil	Natural	Profile 2, Strat. II, 2Ab horizon, PM-2	Soil (SOM)	270	280	2540	60	2451	2601	2758	Beta-185706	Rosenthal and Meyer 2004 (b)	Bear Creek
MER-14	14	MER, Dry Creek at Oakdale Rd.	Buried soil	Natural	Profile 2, Strat. III Cu horizon	Soil (SOM)	210	220	1940	40	1815	1891	1993	Beta-185705	Rosenthal and Meyer 2004 (b)	Bear Creek
MNO-01	1	INY, Volcanic Tableland	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	9830	280	10491	11318	12240	GX-12276	Jennings, 1996	Honova
MNO-01	1	INY, Volcanic Tableland	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	19290	330	22243	23001	23861	A-4983	Jennings, 1996	Honova
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	Lower black II hearth, S of creek channel	Charcoal (Artemisia sp.)	nr	nr	150	15	6	187	224	UCR-1716	Bettinger 1991	Hartig
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	S of creek channel	Charcoal (Artemisia sp.)	nr	nr	1755	100	1481	1674	1887	UCR-2363	Bettinger 1991	Hartig
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	S of creek channel	Charcoal (Artemisia sp.)	nr	nr	1780	60	1553	1704	1828	UCR-2179	Bettinger 1991	Hartig
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	Structure 2	Charcoal (Artemisia sp.)	nr	nr	160	60	56	159	295	UCR-2173	Bettinger 1991	Hartig
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	Structure 2	Charcoal (Artemisia sp.)	nr	nr	490	70	428	525	573	UCR-2176	Bettinger 1991	Hartig
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	Structure 3	Charcoal (Artemisia sp.)	nr	nr	250	60	255	297	482	UCR-2178	Bettinger 1991	Hartig
MNO-02	2	MNO-2191, Crooked Forks	Surface deposit	Cultural	Structure 3	Charcoal (pine)	nr	nr	490	100	420	517	660	UCR-2180	Bettinger 1991	Hartig
MNO-03	3	MNO-2381, Fish Slough	Surface deposit	Cultural	NORTH 1/INTERIOR 2, midden	Charcoal	0	10	1190	60	977	1117	1193	Beta-073932	Nelson 1996	Honova
MNO-03	3	MNO-2381, Fish Slough	Surface deposit	Cultural	SOUTH 1/INTERIOR 2	Charcoal	20	30	800	60	657	727	802	Beta-073930	Nelson 1996	Honova
MNO-03	3	MNO-2381, Fish Slough	Surface deposit	Cultural	SOUTH 1/INTERIOR 2, midden	Charcoal	0	10	860	70	681	785	917	Beta-073929	Nelson 1996	Honova
MNO-03	3	MNO-2381, Fish Slough	Surface deposit	Cultural	SOUTH 1/INTERIOR 2, midden	Charcoal	10	20	990	60	765	892	1004	Beta-073931	Nelson 1996	Honova
MNO-03	3	MNO-2381, Fish Slough	Surface deposit	Cultural	SOUTH 1/INTERIOR 2, midden	Charcoal	20	30	2650	70	2689	2773	2927	Beta-073928	Nelson 1996	Honova

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MNO-04	4	MNO-2433/H, Sherwin Grade	Surface volcanic	Cultural	Burn, NW Lithic Concentration	Charcoal?	5	20	180	40	131	176	230	Beta-164239	Eerkens and King 2002	Vitrandic Torriorthents
MNO-04	4	MNO-2433/H, Sherwin Grade	Surface volcanic	Cultural	Burn, S Lithic Concentration	Charcoal?	5	20	240	70	244	277	478	Beta-161515	Eerkens and King 2002	Vitrandic Torriorthents
MNO-04	4	MNO-3471, Sherwin Grade	Surface volcanic	Cultural	Feature 01	Charcoal?	nr	nr	120	40	9	124	151	Beta-164238	Eerkens and King 2002	Vitrandic Torriorthents
MNO-05	5	MNO, Fish Lake Valley Fault	Buried soil	Natural	Trench 93-1, southeast wall, NE of Oasis, 2Ab in alluvium	Charcoal	54	54	1230	60	1052	1159	1286	CAMS-08356	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Buried soil	Natural	Trench 93-1, southeast wall, NE of Oasis, 3Bkb in alluvium	Charcoal	172	172	2870	50	2860	2999	3161	CAMS-08359	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Buried deposit	Natural	Trench 93-1, southeast wall, NE of Oasis, 4C debris flow	Charcoal	225	232	4760	70	5434	5494	5604	CAMS-09414	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Buried deposit	Natural	Trench 93-1, southeast wall, NE of Oasis, base of 2Cu debris flow	Charcoal	109	109	1260	70	1053	1187	1301	CAMS-08257	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Buried deposit	Natural	Trench 93-1, southeast wall, NE of Oasis, base of 2Cu debris flow	Charcoal	118	118	1280	80	1051	1199	1335	CAMS-08258	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Buried deposit	Natural	Trench 93-1, southeast wall, NE of Oasis, base of 2Cu debris flow	Charcoal	134	134	1380	60	1220	1300	1390	CAMS-08357	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Surface deposit	Natural	Trench 93-1, southeast wall, NE of Oasis, base of Cu (reworked from older beds)	Charcoal	33	33	1210	70	1044	1136	1280	CAMS-08259	Reheis 1994	WARDENOT
MNO-05	5	MNO, Fish Lake Valley Fault	Surface deposit	Natural	Trench 93-1, southeast wall, NE of Oasis, base of Cu in alluvium	Charcoal	34	34	920	60	724	838	935	CAMS-09413	Reheis 1994	WARDENOT
MNO-06	6	MNO-0395/-0584	Surface glacial	Cultural	1-5-AD, Roasting Pit	Charcoal	30	40	455	140	267	467	683	UCR-0365	Garfinkel and Cook 1980; CRD 1996	Vitrandic Torriorthents
MNO-06	6	MNO-0584, Sherwin Grade	Surface deposit	Cultural	C-78-Cc, Pinus and Pushia charcoal	Charcoal	50	60	1155	160	742	1077	1341	UCR-0945	Garfinkel and Cook 1980; CRD 1996	Vitrandic Torriorthents
MNO-06	6	MNO-0584, Sherwin Grade	Surface deposit	Cultural	D-44-Ac-Ad, Pinus and Artemisia charcoal	Charcoal	50	60	490	70	428	525	573	UCR-0943	Garfinkel and Cook 1980; CRD 1996	Vitrandic Torriorthents
MNO-06	6	MNO-0584, Sherwin Grade	Surface deposit	Cultural	D-45-Aa, Pinus, Artemisia, and Purshia charcoal	Charcoal	60	70	430	150	255	439	677	UCR-0944	Garfinkel and Cook 1980; CRD 1996	Vitrandic Torriorthents
MNO-07	7	MNO, McKee Creek-north	Surface colluvium	Natural	Trench MN-1A on north side of creek, overlies Tioga till	Wood (carbonized)	180	190	600	50	533	601	662	TO-0943	Berry 1990, 1997	Torriorthentic Haploxerolls
MNO-07	7	MNO, McKee Creek-north	Surface colluvium	Natural	Trench MN-1A on north side of creek, overlies Tioga till	Wood (carbonized)	70	80	610	50	537	602	664	TO-0997	Berry 1990, 1997	Torriorthentic Haploxerolls
MNO-07	7	MNO, McKee Creek-north	Buried colluvium	Natural	Trench MN-1A on north side of creek, overlies Tioga till	Soil (SOM)	190	200	2015	50	1873	1970	2114	AA-03817	Berry 1990, 1997	Torriorthentic Haploxerolls
MNO-07	7	MNO, McKee Creek-north	Buried colluvium	Natural	Trench MN-1A on north side of creek, overlies Tioga till	Soil (SOM)	295	305	3480	55	3615	3756	3892	AA-03816	Berry 1990, 1997	Torriorthentic Haploxerolls
MNO-07	7	MNO, McKee Creek-north	Buried colluvium	Natural	Trench MN-1A on north side of creek, overlies Tioga till	Charcoal	295	305	4490	130	4838	5137	5471	TO-0941	Berry 1990, 1997	Torriorthentic Haploxerolls
MNO-08	8	MNO, Fish Lake Valley Fault	Buried deposit	Natural	Trench 93-2a, southeast wall, Furnace Creek, 4C in alluvium	Charcoal	224	238	6320	60	7156	7252	7420	CAMS-08358	Reheis 1994	WARDENOT
MNO-08	8	MNO, Fish Lake Valley Fault	Buried soil	Natural	Trench 93-2a, southeast wall, near Furnace Creek, 2Bkb(?) in alluvium	Charcoal	101	101	5620	110	6259	6419	6665	CAMS-08351	Reheis 1994	WARDENOT
MNO-08	8	MNO, Fish Lake Valley Fault	Surface deposit	Natural	Trench 93-2a, southeast wall, near Furnace Creek, base of Cu in alluvium	Charcoal	29	29	1600	60	1354	1485	1618	CAMS-08350	Reheis 1994	WARDENOT
MNO-09	9	MNO, Emerald Lake	Buried glacial	Natural	Root at base of Cox-horizon from tree in glacial till, overlain by 31 cm of volcanic ash/pumice, overlain by rock glacier or slide deposit	Wood (pine root)	64	64	7030	130	7613	7855	8056	I-02287	Buckley and Willis 1969 (RCJ); Curry 1971; CRD 1996	Xeric Vitricryands
MNO-09	9	MNO, Mammoth Crest	Surface deposit	Natural	From terminal moraine east of crest and south of Hammil Lake	Wood (unknown)	nr	nr	3090	60	3157	3303	3445	USGS-0698	Price 1982 (#435); Collected by Yount	Typic Cryorthents 2
MNO-10	10	MNO, Midway	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	450	100	301	475	570	UCR-2182	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Midway	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	2350	100	2152	2416	2623	UCR-2356	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Midway	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	2350	120	2121	2415	2738	UCR-2354	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Midway	Surface deposit	Cultural	Structure 5	Charcoal (Artemisia sp.)	nr	nr	270	70	256	329	501	UCR-2285	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Midway	Surface deposit	Cultural	Structure 5	Charcoal (Artemisia sp.)	nr	nr	300	60	275	378	502	UCR-2287	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Midway	Surface deposit	Cultural	Structure 8	Charcoal (Artemisia sp.)	nr	nr	260	50	267	313	467	UCR-2283	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Pressure Drop	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	390	65	308	431	521	UCR-2191	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Pressure Drop	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	540	60	503	562	653	UCR-2190	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Pressure Drop	Surface deposit	Cultural	Structure 2	Charcoal (Artemisia sp.)	nr	nr	290	50	281	376	490	UCR-2291	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Rancho Deluxe	Surface deposit	Cultural	Strcture 5	Charcoal (Artemisia sp.)	nr	nr	350	60	302	401	506	UCR-2192	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Rancho Deluxe	Surface deposit	Cultural	Structure 3	Charcoal (Artemisia sp.)	nr	nr	330	80	269	386	523	UCR-2193	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Rancho Deluxe	Surface deposit	Cultural	Structure 5	Charcoal (Artemisia sp.)	nr	nr	210	50	123	187	319	UCR-2290	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Rancho Deluxe	Surface deposit	Cultural	Structure 5	Charcoal (Artemisia sp.)	nr	nr	760	60	634	701	795	UCR-2289	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Rancho Deluxe Site	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	870	70	685	794	921	UCR-2348	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Rancho Deluxe Site	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	1510	60	1306	1403	1523	UCR-2351	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Raven Camp	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	1240	60	1054	1171	1290	UCR-01295	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Raven Camp	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	2530	60	2449	2593	2753	UCR-2358	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Short Stop Site	Surface deposit	Cultural	Structure 3	Charcoal (Artemisia sp.)	nr	nr	1565	100	1296	1467	1634	UCR-2362	Bettinger 1991; Delacorte 1999	Rock outcrop
MNO-10	10	MNO, Site 12640	Surface deposit	Cultural	Structure 1	Charcoal (Artemisia sp.)	nr	nr	400	90	284	430	558	UCR-2359	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Site 12640	Surface deposit	Cultural	Structure 1	Charcoal (Artemisia sp.)	nr	nr	460	50	428	508	557	UCR-2360	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Site 12640	Surface deposit	Cultural	Structure 2	Charcoal (pine)	nr	nr	340	60	297	396	505	UCR-2189	Bettinger 1991	Rock outcrop
MNO-10	10	MNO, Site 12640	Surface deposit	Cultural	Structure 2	Charcoal (Artemisia sp.)	nr	nr	360	60	305	406	507	UCR-2188	Bettinger 1991	Rock outcrop
MNO-10	10	MNO-2194, Corral Camp North	Surface deposit	Cultural	Structure 3	Charcoal (Artemisia sp.)	nr	nr	<150	na				UCR-2281	Bettinger 1991	Bartine
MNO-10	10	MNO-2194, Corral Camp South	Surface deposit	Cultural	?	Charcoal (Artemisia sp.)	nr	nr	830	60	671	753	832	UCR-2187	Bettinger 1991	Bartine
MNO-10	10	MNO-2194, Corral Camp South	Surface deposit	Cultural	Structure 2	Charcoal (Artemisia sp.)	nr	nr	1190	70	968	1117	1268	UCR-2278	Bettinger 1991; Delacorte 1999	Bartine
MNO-10	10	MNO-2194, Corral Camp South	Surface deposit	Cultural	Structure 5	Charcoal (Artemisia sp.)	nr	nr	360	100	264	396	554	UCR-2352	Bettinger 1991	Bartine
MNO-10	10	MNO-2197, Shooting Star	Surface deposit	Cultural	Structure 2	Charcoal (Artemisia sp.)	nr	nr	870	50	693	787	835	UCR-2288	Bettinger 1991; Delacorte 1999	Soakpak

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MNO-11	11	MNO, Inyo Craters, Horseshoe Lk.	Buried volcanic	Natural	From borrow pit N of lake in sand/gravel below sand and pumice	Wood (charred)	121	122	4830	200	5032	5547	5991	W-0734	Rubin and Alexander 1960; CRD 1996	Stecum family
MNO-11	11	MNO, Inyo Craters, Horseshoe Lk.	Buried volcanic	Natural	Site RCJ 91040, from silicic tephra below Red Cones tephra	Charcoal	77	79	8490	90	9282	9486	9635	CAMS-02511	Deming 2002	Stecum family 2
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	BL (4)	Organic Sediment	74	80	470	120	286	490	672	SI-6678	Anderson 1990	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	BL (4)	Organic Sediment	25	30	695	85	532	651	779	SI-6676	Anderson 1990	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	BL (4)	Organic Sediment	44	49	1110	90	902	1036	1263	SI-6677	Anderson 1990	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	BL (4)	Organic Sediment	85	90	3930	90	4089	4363	4618	SI-6679	Anderson 1990	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	BL (8)	Organic Sediment	126	134	8020	190	8454	8902	9332	A-4455	Anderson 1990	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	BL (8)	Organic Sediment	179	197	11730	430	12864	13667	14870	A-4456	Anderson 1990	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	Piston core, obtained 7/16/2000	Organic Sediment	146	146	7820	40	8514	8597	8722	Beta-153338	MacDonald et al. 2008	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	Piston core, obtained 7/16/2000	Plant (pine needle)	164	164	9170	40	10237	10330	10429	Beta-153339	MacDonald et al. 2008	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	Piston core, obtained 7/16/2000	Organic Sediment	181	181	11180	60	12946	13083	13202	Beta-164174	MacDonald et al. 2008	(Glacial Lake)
MNO-11	11	MNO, Lake Barrett	Lacustrine	Natural	Piston core, obtained 7/16/2000	Organic Sediment	196	198	11900	65	13616	13765	13931	NSRL-12025	MacDonald et al. 2008	(Glacial Lake)
MNO-12	95	MNO, Milner Canyon	Buried deposit	Natural	Cutbank section II, below three debris-flow beds	Charcoal	140	150	1165	150	779	1087	1345	?	Hubert and Fiipov 1989	Millner
MNO-13	13	INY, Volcanic Tableland	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	2130	215	1689	2124	2623	GX-12274	Jennings and Elliott-Fisk, 1993	Chidago
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Pit 4, Feature 02, with hearth and millingslab	Charcoal	20	40	280	60	268	359	496	UCLA-1954	Leonard 1983 (RCJ)	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06	Charcoal	40	50	590	80	505	596	677	WSU-3959	Burton 1990	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06	Charcoal	70	80	1100	80	901	1024	1184	WSU-3958	Burton 1990	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06	Charcoal	90	90	1180	60	967	1107	1189	WSU-3957	Burton 1990	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06	Charcoal	110	110	1830	80	1560	1761	1928	WSU-4082	Burton 1990	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06	Charcoal	150	150	2880	130	2763	3037	3340	Beta-032260	Burton 1990	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06	Charcoal	130	130	3030	80	2988	3225	3397	WSU-4023	Burton 1990	Chesaw family
MNO-14	14	MNO-0003, Snow Creek No. 5	Surface deposit	Cultural	Unit 06, Feature 01, hearth	Charcoal	110	110	2390	80	2307	2466	2724	WSU-4083	Burton 1990	Chesaw family
MNO-15	15	MNO, Inyo Craters, Mammoth Mountain	Buried volcanic	Natural	Under 18 to 20 inches of pumice	Charcoal	45	49	920	80	689	836	961	UCLA-0908	RCJ 1966	Rock outcrop-Rubble land 2
MNO-15	15	MNO, Mammoth Mountain	Buried colluvium	Natural	Under coarse pumice in switchback roadcut to Mammoth Mountain	Wood (charred)	30	30	1440	150	1054	1356	1635	W-0727	Rubin and Alexander 1960; Wahrhaftig and Birman 1965; CRD 1996	Vitrandic Cryorthents 2
MNO-16	16	MNO-2201, Benton Range	Surface deposit	Cultural	Unit 07, Feature 1, FCR concentration	Charcoal	10	20	660	120	482	631	802	Beta-021008	Hall 1990	Haar family
MNO-17	17	MNO-0382	Surface volcanic	Cultural	14	Charcoal	15	30	600	60	526	600	666	UCLA-1724F	Michels and Sterud 1983 (RCJ)	Plutos family
MNO-17	17	MNO-0382	Surface volcanic	Cultural	14	Charcoal	45	60	1000	50	788	913	989	UCLA-1724C	Michels and Sterud 1983 (RCJ)	Plutos family
MNO-17	17	MNO-0382	Surface volcanic	Cultural	16	Charcoal	15	30	450	100	301	475	570	UCLA-1724E	Michels and Sterud 1983 (RCJ)	Plutos family
MNO-17	17	MNO-0382	Surface volcanic	Cultural	17	Charcoal	15	30	170	60	56	167	301	UCLA-1724D	Michels and Sterud 1983 (RCJ)	Plutos family
MNO-17	17	MNO-0382	Surface volcanic	Cultural	26	Charcoal	15	30	660	60	539	618	689	UCLA-1724A	Michels and Sterud 1983 (RCJ)	Plutos family
MNO-17	17	MNO-0382	Surface volcanic	Cultural	29	Charcoal	15	30	430	80	304	461	557	UCLA-1724B	Michels and Sterud 1983 (RCJ)	Plutos family
MNO-17	17	MNO-0458	Surface volcanic	Cultural	N/69/W144	Charcoal	20	22	110	50	8	123	151	Beta-012943	Burton; CRD 1996	Calpine family
MNO-17	17	MNO-0458	Surface volcanic	Cultural	N/69/W144	Charcoal	40	50	220	60	59	204	333	Beta-012944	Burton; CRD 1996	Calpine family
MNO-17	17	MNO-0458	Surface volcanic	Cultural	N/76W140	Charcoal	20	30	90	60	8	120	151	Beta-012945	Burton; CRD 1996	Calpine family
MNO-18	18	MNO-2189, Chalfant Valley	Surface deposit	Cultural	Hearth 2	Charcoal	20	30	150	15	6	187	224	UCR-1715	UCR 1986; CRD 1996	Chidago
MNO-19	19	MNO-0577	Surface volcanic	Cultural	Unit D	Charcoal	40	50	1100	60	925	1017	1172	Beta-029481	Goldberg et al.1990; CRD 1996	Haypress family 2
MNO-19	19	MNO-0578	Surface volcanic	Cultural	Unit E, instrusive sample?	Charcoal	90	100	520	120	307	537	681	Beta-029483	Goldberg et al.1990; CRD 1996	Vitrandic Xeropsamments
MNO-19	19	MNO-0578	Surface volcanic	Cultural	Unit H, deposit lacks integrity	Charcoal	30	40	1740	60	1534	1654	1816	Beta-029482	Goldberg et al.1990; CRD 1996	Vitrandic Xeropsamments
MNO-20	6	MNO, Cottonwood Canyon	Buried deposit	Natural	Cutbank section VI, below two debris-flow beds	Charcoal	160	170	425	150	254	434	674	?	Hubert and Fiipov 1989	Millner
MNO-21	21	MNO-0013(E), Site 13.5	Surface deposit	Cultural	Charcoal from rock ring (?) fill, (National Forest 22)	Charcoal	20	30	1300	150	930	1204	1448	UCR-0247	Cowan & Wallof 1974; UCR 1981; CRD 1996	Stacy family
MNO-21	21	MNO-0014, Rutabaga Hill	Surface deposit	Cultural	From Site 14 (National Forest 23-24)	Charcoal	40	50	150	15	6	187	224	UCR-0246	Cowan & Wallof 1974; UCR 1981; CRD 1996	Stacy family
MNO-21	21	MNO-0014, Rutabaga Hill	Surface deposit	Cultural	From Site 14 (National Forest 23-24)	Charcoal	25	35	280	150	-3	308	520	UCR-0245	Cowan & Wallof 1974; UCR 1981; CRD 1996	Stacy family
MNO-21	21	MNO-0023, Watterson Trough	Surface deposit	Cultural	From Site 23	Charcoal	20	30	250	130	57	279	500	UCR-0248	Cowan & Wallof 1974; UCR 1981; CRD 1996	Stacy family
MNO-22	22	MNO-0574	Buried volcanic	Cultural	Unit A, Feature 2, charcoal and dark soil	Charcoal	60	70	1820	60	1602	1755	1884	Beta-029480	Goldberg et al.1990; CRD 1996	Haypress family 2
MNO-22	22	MNO-0574	Buried volcanic	Cultural	Unit D, charcoal and dark soil	Charcoal	60	70	1290	120	956	1197	1407	Beta-029479	Goldberg et al.1990; CRD 1996	Haypress family 2
MNO-22	22	MNO-0833	Surface deposit	Cultural	Unit D	Charcoal	40	40	2140	60	1990	2133	2319	Beta-029484	Goldberg et al.1990; CRD 1996	Vitrandic Xerorthents
MNO-23	23	MNO, Inyo Crater Lakes	Buried volcanic	Natural	Log buried in ejecta that forms NE wall of S-most crater	Wood (unknown)	nr	nr	650	200	282	630	983	W-1431	Huber and Rinehart 1967; RCJ 1978	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Crater Lakes	Buried volcanic	Natural	N wall of S-most explosion pit; 150-170 yrs older than outer ring	Wood (pine log)	nr	nr	710	60	617	664	737	UGa-0603	Wood 1975; -160 yrs for heartwood	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	From fragmental deposits erupted at the vent	Charcoal	nr	nr	510	100	422	535	669	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	From fragmental deposits erupted at the vent	Charcoal	nr	nr	655	120	476	627	801	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	From fragmental deposits erupted at the vent	Charcoal	nr	nr	670	60	539	627	698	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	From fragmental deposits erupted at the vent	Charcoal	nr	nr	740	70	617	687	793	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	From fragmental deposits erupted at the vent	Charcoal	nr	nr	750	60	634	693	790	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-23	23	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	From fragmental deposits erupted at the vent	Charcoal	nr	nr	770	120	545	723	923	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-23	24	MNO, Inyo Craters, South Deadman	Surface volcanic	Natural	Pumice lapilli and ash eruption, dome formatioin	Charcoal	-	-	720	60	620	671	744	?	Wood 1977a; Kilbourne and Anderson 1981	Vitrandic Xeropsamments 2
MNO-24	20	MNO, White Mountains	Surface deposit	Natural	Falls Canyon 1 site	Packrat Midden	0	1	8790	110	9555	9846	10160	A-4981	Jennings and Elliot-Fisk 1990(?)	Rubbleland
MNO-24	12	MNO, White Mountains	Surface deposit	Natural	Falls Canyon 2 site	Packrat Midden	0	1	7810	450	7704	8716	9677	GX-12275	Jennings and Elliot-Fisk 1990(?)	Rubbleland
MNO-25	25	MNO, Inyo Craters, Glass Creek	Buried soil	Natural	From rooted trees buried by Glass Creek Tephra	Charcoal	nr	nr	530	50	502	550	567	nr	Miler 1985	Vitrandic Xerorthents 2
MNO-25	25	MNO, Inyo Craters, Glass Creek	Buried soil	Natural	From rooted trees buried by Glass Creek Tephra	Charcoal	nr	nr	650	100	504	620	768	nr	Miler 1985	Vitrandic Xerorthents 2
MNO-26	26	MNO-2439/H, Waugh Lake	Buried volcanic	Natural	Unit 098-1, Strat. III, possible A-horizon buried by tephra	Soil (bulk)	40	45	1470	60	1289	1367	1424	Beta-121307	Jackson and Morgan 1999	Typic Cryorthents, volcanic 2
MNO-26	26	MNO-2439/H, Waugh Lake	Buried volcanic	Natural	Unit 098-2, Strat. III, possible A-horizon buried by tephra	Soil (bulk)	40	45	2130	50	1991	2115	2208	Beta-121306	Jackson and Morgan 1999	Typic Cryorthents, volcanic 2
MNO-26	26	MNO-2440/H, Waugh Lake	Buried volcanic	Natural	Unit 06, Strat. III above buried paleosol	Soil (bulk)	30	30	1910	50	1718	1854	1950	Beta-117216	Jackson and Morgan 1999	Typic Cryorthents 2
MNO-26	26	MNO-2440/H, Waugh Lake	Buried volcanic	Natural	Unit 07, Strat. IV, paleosol/A-horizon buried by tephra	Soil (bulk)	40	45	2450	40	2358	2519	2551	Beta-117217	Jackson and Morgan 1999	Typic Cryorthents 2

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MNO-27	27	MNO, Inyo Craters, Deadman Summit	Buried soil	Natural	Small gravel pit, E of S.R. 395, 3Ab below tephras	Charcoal	140	150	1166	35	1043	1087	1175	AA-72568	Meyn 2007	Vitrandic Xerorthents
MNO-27	27	MNO, Inyo Craters, Deadman Summit	Buried soil	Natural	Small gravel pit, E of S.R. 395, 6Ab below tephras	Charcoal	195	205	2228	37	2152	2232	2280	AA-72576	Meyn 2007	Vitrandic Xerorthents
MNO-28	28	MNO, Sawmill Meadow	Buried meadow-volcanic	Natural	Gully at lower end of meadow, between ash layer 5 and 6; pumice erupted from South Coulee?	Wood (lodgepole pine)	42	52	1990	200	1415	1956	2363	W-3472	Wood 1983	Fez family
MNO-28	28	MNO, Sawmill Meadow	Buried meadow	Natural	Gully at lower end of meadow, buried in ash layer 3, overlies ash layer 4	Peat (silt)	80	85	3330	200	3065	3585	4093	W-3471	Wood 1983	Fez family
MNO-28	28	MNO, Sawmill Meadow	Buried meadow	Natural	Gully at lower end of meadow, overlies ash layer 2	Peat (fiberous)	25	30	1170	200	687	1088	1416	W-3470	Wood 1983	Fez family
MNO-28	28	MNO, Sawmill Meadow	Buried meadow	Natural	Gully at lower end of meadow, underlies ash layer 6	Peat (fiberous brown)	90	94	4570	200	4808	5223	5719	W-3473	Wood 1983	Fez family
MNO-28	28	MNO-0108, Sawmill Meadow	Surface deposit	Cultural	N1.5/W25, Feature 01, rock concentration	Charcoal	10	20	970	50	765	864	966	Beta-116923	Basgall 1998	Vitrandic Torriorthents
MNO-29	29	MNO, Inyo Craters, Wilson Butte	Surface volcanic	Natural	From pyroclastic-flow along S.R. 395, near Crestview	Charcoal	nr	nr	1330	50	1170	1257	1342	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-29	29	MNO, Inyo Craters, Wilson Butte	Surface volcanic	Natural	From pyroclastic-flow along S.R. 395, near Crestview	Charcoal	nr	nr	1380	70	1168	1299	1414	nr	Miler 1985	Vitrandic Xeropsamments 2
MNO-29	29	MNO, Wilson Butte	Buried volcanic	Natural	From pyroclastics in roadcut along U.S. 395, 1.4 mi N of Wilson Butte; south of culvert; adjusted initial date of 1695 +/- 200 from heartwood of 295 yr old tree	Wood (pine)	80	100	1990	200	1415	1956	2363	W-3469	Wood 1983	Vitrandic Xerorthents
MNO-30	30	MNO, Mono Basin, Marina	Plant	Natural	Rooted shrub stump on shoreland south of Mono Co. Marina; southernmost extent of western embayment	Wood (shrub stump)	nr	nr	550	30	517	555	563	LDGO-1667-ow	Stine 1990	Cozetica family 2
MNO-30	30	MNO, Mono Basin, PO Creek?	Plant	Natural	Rooted tree stump west of PO Creek mouth	Wood (tree stump)	nr	nr	860	60	686	781	911	LDGO-1667-fw	Stine 1990	Cozetica family 2
MNO-31	31	MNO, Mono Craters, Oh! Ridge	Buried volcanic	Natural	Tephra in trench at northern end of Hartley springs Fault.	Charcoal	135	145	1230	50	1056	1161	1281	?	Bursik et al. 2003	Vitrandic Xeropsamments
MNO-31	31	MNO, Mono Craters, Oh! Ridge	Buried volcanic	Natural	Tephra in trench at northern end of Hartley springs Fault.	Organic Sediment	235	245	3320	60	3440	3551	3692	B-124204 (Beta?)	Bursik et al. 2003	Vitrandic Xeropsamments
MNO-32	32	MNO, Adobe Valley, S.R. 120	Buried marsh	Natural	Black Lake Bog, Core 4, peat above Ash 3	Peat	339	344	4580	130	4955	5243	5489	GaK-01852	Batchelder 1970	Aquic Torriorthents
MNO-32	32	MNO, Adobe Valley, S.R. 120	Buried marsh	Natural	Black Lake Bog, Core 4, peat below Ash 2	Peat	114	119	2190	90	1985	2192	2352	GaK-02476	Batchelder 1970	Aquic Torriorthents
MNO-32	32	MNO, Adobe Valley, S.R. 120	Buried marsh	Natural	Black lake Bog, Core 4, peat below diatamceous clay at base of core	Peat	607	620	8550	210	9087	9575	10171	GaK-01854	Batchelder 1970	Aquic Torriorthents
MNO-32	32	MNO, Adobe Valley, S.R. 120	Buried marsh	Natural	Black Lake Bog, Core 4, peat between Ash 4 and 5	Peat	390	400	4940	120	5458	5693	5927	GaK-01853	Batchelder 1970	Aquic Torriorthents
MNO-32	32	MNO, Adobe Valley, S.R. 120	Lacustrine	Natural	Core 2, southeast Black Lake, clay between Ash 3 and 4	Organic Sediment	241	250	3890	120	3972	4312	4629	GaK-01850	Batchelder 1970	Brantel
MNO-32	32	MNO, Adobe Valley, S.R. 120	Buried marsh	Natural	Core 2, southeast Black Lake, peat below Ash 5	Peat	320	328	5230	110	5839	6013	6220	GaK-02486	Batchelder 1970	Brantel
MNO-32	32	MNO, Adobe Valley, S.R. 120	Buried marsh	Natural	Core 2, southeast Black Lake, peat near base of core	Peat	531	537	11350	350	12640	13261	14012	GaK-01425	Batchelder 1970	Brantel
MNO-33	33	MNO, Crooked Meadows	Buried meadow	Natural	From bank of small meadow land stream, buried by airfall ash	Organic Sediment	45	50	2105	73	1923	2087	2212	AA-72570	Meyn 2007	Aquandic Endoaquolls
MNO-34	34	MNO-2206, Benton Range	Surface volcanic	Cultural	Unit 05, Feature 5-east half, rock ring	Charcoal	10	20	450	90	305	479	565	Beta-021009	Hall 1990	Pizona
MNO-35	35	MNO, Tioga Pass Pond	Lacustrine	Natural	TP (2)	Organic Sediment (gyttja)	48	58	1910	80	1690	1852	2044	A-4448	Anderson 1990	Stecum family
MNO-35	35	MNO, Tioga Pass Pond	Lacustrine	Natural	TP (2)	Organic Sediment	149	157	4060	160	4089	4558	4894	A-4449	Anderson 1990	Stecum family
MNO-35	35	MNO, Tioga Pass Pond	Lacustrine	Natural	TP (2)	Organic Sediment	234	243	6100	140	6653	6978	7306	A-4430	Anderson 1990	Stecum family
MNO-35	35	MNO, Tioga Pass Pond	Lacustrine	Natural	TP (2)	Organic Sediment	291	305	8760	240	9278	9840	10430	AA-04450	Anderson 1990	Stecum family
MNO-36	36	MNO-0891, Walker Creek	Buried soil	Cultural	Locus 1, EXU S18/E10, Strat. A, east of S.R. 395	Charcoal	70	75	4780	40	5462	5517	5596	Beta-141244	Carpenter 2001	Alamedawell
MNO-37	37	MNO, Mono Basin, Panum Dune	Surface volcanic	Natural	From within the Paunum Dune flow bed	Charcoal	133	143	530	60	497	554	654	UW-0799	Sieh and Bursik 1986	Benemes
MNO-37	37	MNO, Mono Basin, Rush Creek	Buried deposit	Natural	From beach sand in east wall of creek	Wood (pine cone)	nr	nr	930	40	534	683	802	USGS-1704	Stine 1990	Benemes
MNO-37	37	MNO, Mono Basin, Rush Creek	Buried deposit	Natural	From beach sand in east Wall Rush Creek	Plant (grass shoots)	nr	nr	920	35	763	847	923	USGS-1321	Stine 1990	Benemes
MNO-37	37	MNO, Mono Basin, Rush Creek	Buried volcanic	Natural	From obsidian-rich fall bed in gully east of Rush Creek	Charcoal	180	190	1672	36	1516	1579	1695	AA-72573	Meyn 2007	Benemes
MNO-37	37	MNO, Mono Basin, Rush Creek	Buried Channel	Natural	From thin channel deposit in gully east of Rush Creek	Charcoal	545	555	1688	47	1514	1597	1713	AA-72571	Meyn 2007	Benemes
MNO-38	38	MNO, Mono Craters, Panum Crater	Buried soil	Natural	Former ground surface buried by North Mono Tephra	Charcoal	133	143	550	80	466	574	674	UW-0798	Sieh and Bursik 1986	Lakash family
MNO-39	39	MNO, Mono Basin, Rush Creek	Buried soil	Natural	Branch rooted in organic muck buried by Panum volcanics	Charcoal	200	210	580	60	518	596	660	UW-0797	Sieh and Bursik 1986	Warrior
MNO-39	39	MNO, Mono Basin, Rush Creek	Lacustrine	Natural	Silts below Rush Creek deltaic sequence at IXB (plate 22)	Crustacean (ostracodes)	nr	nr	31900	650	35931	37283	38635	L-?	LaJoie 1968	Warrior
MNO-40	40	MNO-0446	Surface glacial	Cultural	N25/W1, Hearth	Charcoal	15	15	250	60	255	297	482	Beta-050570	Nelson 1992	Wrango family
MNO-40	40	MNO-0446	Surface glacial	Cultural	Square 7	Charcoal	100	110	3975	100	4150	4440	4711	UCR-1276	UCR 1981; Bettinger 1981	Wrango family
MNO-40	40	MNO-2146/H, Lee Vining	Surface deposit	Cultural	Area 1, Probe 1, N of Lee Vining Ck, W of 395	Charcoal	30	50	1080	50	918	995	1091	Beta-137086	Carpenter 2001	Fluvaquentic Endoaquolls
MNO-41	41	MNO, Green Treble Lake	Lacustrine	Natural	GTL-4	Organic Sediment (gyttja)	230	29	2080	50	1924	2052	2155	CAMS-GT-C-4	Clark and Gillespie 1997	Rock outcrop-Rubble land 2
MNO-41	41	MNO, Green Treble Lake	Lacustrine	Natural	GTL-4	Organic Sediment (gyttja)	91	92	4630	50	5280	5395	5477	CAMS-GT-C-3	Clark and Gillespie 1997	Rock outcrop-Rubble land 2
MNO-41	41	MNO, Green Treble Lake	Lacustrine	Natural	GTL-4, basal organic silt	Organic Sediment (gyttja)	101	102	5870	60	6529	6690	6800	CAMS-GT-C-2	Clark and Gillespie 1997	Rock outcrop-Rubble land 2
MNO-41	41	MNO, Green Treble Lake	Lacustrine	Natural	GTL-4, basal organic silt	Organic Sediment	115	116	7750	60	8415	8524	8630	CAMS-GT-C-1	Clark and Gillespie 1997	Rock outcrop-Rubble land 2
MNO-42	42	MNO-2218, Adobe Valley	Surface deposit	Cultural	Unit 05, charcoal from excavation level	Charcoal	10	20	2380	90	2301	2457	2725	Beta-021558	Hall 1990	BRIER
MNO-43	43	MNO, Mono Basin	Lacustrine	Natural	Tufa on wood from south lakeshore, 3 meters above present lake level, coll by GI Smith	Carbonate (tufa)	0	1	2060	60	1001	1167	1293	USGS-0070	(RCJ - year?)	Alamedawell
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Buried deposit	Natural	East wall of Lee Vining Creek cut	Wood (pine cone)	nr	nr	675	50	551	634	688	USGS-1316	Stine 1990	Warrior

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Lacustrine	Natural	From bottomset beds in east wall of Lee Vining Creek	Charcoal	nr	nr	3490	90	3555	3766	3986	Beta-005115	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Buried channel	Natural	From fluvial gravel in east creek wall	Wood (pine cone)	nr	nr	1625	40	1409	1515	1611	USGS-1524	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Buried channel	Natural	From fluvial gravels in east wall of creek; gravel pit	Wood (pine cone)	nr	nr	1590	50	1366	1474	1570	USGS-1705	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Buried deposit	Natural	From transgressive land sediments in east creek wall	Wood (pine cone)	nr	nr	890	60	698	815	923	USGS-1310	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Buried deposit	Natural	From transgressive land sediments in east creek wall	Wood (pine cone)	nr	nr	1495	45	1303	1381	1423	USGS-1314	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Surface deposit	Natural	Lower Lee Vining Creek cut at 6433 ft amsl; highstand	Charcoal (or wood?)	nr	nr	220	65	59	206	333	USGS-1317	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Surface deposit	Natural	Lower Lee Vining Creek cut at 6450.5 ft amsl; highstand	Charcoal (or wood?)	nr	nr	220	60	59	204	333	USGS-1320	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Surface deposit	Natural	Lower Lee Vining Creek cut at 6450.5 ft amsl; highstand	Charcoal (or wood?)	nr	nr	220	50	131	198	331	USGS-1312	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Lower Lee Vining Creek cut, Locality 1c	Wood (tree stump)	30	40	890	50	724	815	923	USGS-1309	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Surface deposit	Natural	Non-rooted stump on surface, 300 m W of Lee Vining Creek	Wood (pine, Jeffery)	nr	nr	600	70	518	599	670	USGS-1315	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted shrub stump on surface east of creek mouth	Wood (shrub stump)	nr	nr	770	50	653	705	789	LDGO-1667-aw	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump below modern lake level in channel on east side of creek	Wood (tree stump)	nr	nr	950	50	742	855	937	USGS-1487	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump in left channel wall of creek, ~1000 m upstearm from Co. Rd. crossing	Wood (tree stump)	nr	nr	240	30	269	288	318	LDGO-1667-f	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface 300 m east of creek	Wood (tree stump)	nr	nr	570	30	585	601	646	LDGO-1667-iw	Stine 1990	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface below modern lake level east of creek mouth	Wood (tree stump)	nr	nr	640	60	537	607	678	USGS-1167	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface below modern lake level east of creek mouth	Wood (pine stump)	nr	nr	700	60	617	655	731	USGS-1277	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface below modern lake level east of creek mouth	Wood (tree stump)	nr	nr	850	50	681	766	832	USGS-1274	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface below modern lake level east of creek mouth	Wood (tree stump)	nr	nr	860	60	686	781	911	USGS-1276	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface below modern lake level east of creek mouth	Wood (tree stump)	nr	nr	910	60	723	831	931	USGS-1275	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Rooted tree stump on surface below modern lake level, east of creek mouth	Wood (tree stump)	nr	nr	920	90	677	837	978	UCLA-0118	Fergusson and Libby 1962, RCJ; Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Tree stump rooted below modern lake level in Lee Vining Creek delta	Wood (tree stump)	nr	nr	940	60	734	849	955	USGS-1319	Stine 1984	Warrior
MNO-43	43	MNO, Mono Basin, Lee Vining Ck	Plant	Natural	Tufa-crusted rooted stump on surface in east creek wall	Wood (tree stump)	nr	nr	940	20	795	852	919	LDGO-1667-lw	Stine 1990	Warrior
MNO-44	44	MNO, Conness Lakes, lower	Lacustrine	Natural	Sediment core from lake downstream of Conness glacier	Plant (twig)	62	64	3190	60	3321	3417	3564	CAMS-32712	Konrad and Clark 1998	Rock outcrop-Rubble land 2
MNO-44	44	MNO, Conness Lakes, lower	Lacustrine	Natural	Sediment core from lake downstream of Conness glacier	Plant (twig)	68	70	3230	50	3364	3452	3566	CAMS-32713	Konrad and Clark 1998	Rock outcrop-Rubble land 2
MNO-44	44	MNO, Conness Lakes, middle	Lacustrine	Natural	Sediment core from lake downstream of Conness glacier	Plant (pine needle)	74	76	2320	130	2044	2361	2728	CAMS-32710	Konrad and Clark 1998	Rock outcrop-Rubble land 2
MNO-44	44	MNO, Conness Lakes, middle	Lacustrine	Natural	Sediment core from lake downstream of Conness glacier	Wood (splinter)	32	34	1640	50	1409	1537	1628	CAMS-32711	Konrad and Clark 1998	Rock outcrop-Rubble land 2
MNO-44	44	MNO, Conness Lakes, middle	Lacustrine	Natural	Sediment core from lake downstream of Conness glacier	Plant (pine needle)	47	49	2060	60	1881	2031	2154	CAMS-32714	Konrad and Clark 1998	Rock outcrop-Rubble land 2
MNO-44	44	MNO, Greenstone Lake	Lacustrine	Natural	Core	Organic Sediment	229	231	9270	60	10255	10448	10587	Beta-157867	Purinchu, MacDonald, Bloom, and Moser 2003	Rock outcrop-Rubble land 2
MNO-44	44	MNO, Greenstone Lake	Lacustrine	Natural	Core	Organic Sediment	245	246	10700	80	12592	12749	12866	Beta-157868	Purinchu, MacDonald, Bloom, and Moser 2003	Rock outcrop-Rubble land 2
MNO-45	10	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta in 1986	Organic sediment (gyttja)	710	720	10765	105	12589	12789	12933	AA-04692	Davis 1999	Water
MNO-45	45	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta in 1986	Wood (cf. Populus)	60	70	1950	110	1682	1902	2154	Beta-021036	Davis 1999	Water
MNO-45	45	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta in 1986	Organic sediment (gyttja)	140	150	2060	75	1865	2034	2182	AA-02517	Davis 1999	Water
MNO-45	45	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta in 1986	Organic sediment (gyttja)	600	610	8990	105	9736	10084	10303	AA-02520	Davis 1999	Water
MNO-45	13	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta in 1986; large thinolite tufa crystals	Carbonate (tufa)	655	660	9450	95	10484	10721	11105	AA-05902	Davis 1999	Water
MNO-45	45	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta; Tsoyowata ash at 363 cm	Organic sediment (gyttja)	450	460	7485	120	8028	8287	8481	AA-02519	Davis 1999	Water
MNO-45	45	MNO, Mono Lake	Lacustrine	Natural	Core in 2.8 m of water placed in Post Office Creek delta; with unidentified ash at 200 cm	Ostracod	200	205	3730	60	3897	4083	4249	AA-06837	Davis 1999	Water
MNO-46	46	MNO-2220, Adobe Mtns.	Surface deposit	Natural	Feature 2A, large carbonized wood chunk from rock ring center; associated artifacts are younger; may be older plant or root burn?	Charcoal	10	20	2290	60	2146	2277	2460	Beta-021559	Hall 1990	BRIER
MNO-47	47	MNO-2122	Surface deposit	Cultural	Post	Charcoal	10	20	150	15	6	187	224	UCR-2096	UCR 1986; CRD 1996	Alamedawell
MNO-47	47	MNO-2122	Surface deposit	Cultural	Post	Charcoal	10	20	150	15	6	187	224	UCR-2097	UCR 1986; CRD 1996	Alamedawell

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MNO-47	47	MNO-2122	Surface deposit	Cultural	Post	Charcoal	10	20	150	15	6	187	224	UCR-2098	UCR 1986; CRD 1996	Alamedawell
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	233	233	20020	150	23565	23977	24382	EHT-21432	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	233	233	21170	160	25276	25566	26000	EHT-21431	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	350	350	23080	200	27168	27698	28228	EHT-21426	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	334	334	23720	190	27912	28420	28928	EHT-21430	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	350	350	23860	240	27974	28576	29178	EHT-21427	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	390	390	27620	260	32334	32964	33594	EHT-21424	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	436	436	29400	290	34175	34819	35463	EHT-21429	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	450	450	30510	360	35157	35887	36617	EHT-21422	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	500	500	33400	580	37606	38786	39966	EHT-21420	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	540	540	33610	1802	35448	38962	42476	EHT-20191	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	600	600	36250	430	40655	41481	42307	EHT-20190	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	650	650	39700	790	43038	44464	45890	EHT-19889	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	650	650	41590	890	44515	46117	47719	EHT-20298	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation	Crustacean (ostracodes)	649	649	46100	850	49509	51209	52909	EHT-21056	Kent, Hemming, and Turrin 2002	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Lower part of Wilson Creek formation at II-I (plate 8)	Crustacean (ostracodes)	695	705	22900	700	25858	27488	29118	L-?	LaJoie 1968	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Type section cutbank along Wilson Creek	Crustacean (ostracodes)	220	230	13300	500	13331	14575	15920	L-?	LaJoie 1968	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Type section cutbank along Wilson Creek	Crustacean (ostracodes)	495	505	18900	700	19837	21418	23248	L-?	LaJoie 1968	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Wilson Creek formation	Organic Sediment?	437	437	25570	260	30126	30760	31394	CAMS-20031	Benson et al.1997	BRANTEL
MNO-48	48	MNO, Mono Basin, Wilson Creek	Lacustrine	Natural	Wilson Creek formation	Organic Sediment?	463	463	27520	270	32207	32859	33511	CAMS-20032	Benson et al.1997	BRANTEL
MNO-50	50	MNO, Roosevelt Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	538	539	9850	40	11199	11247	11325	Beta-168955	Bloom 2005	(Glacial Lake)
MNO-50	50	MNO, Roosevelt Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	574	575	11160	40	12949	13064	13159	Beta-167278	Bloom 2005	(Glacial Lake)
MNO-50	50	MNO, Roosevelt Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	594	595	12180	70	13841	14038	14206	Beta-168870	Bloom 2005	(Glacial Lake)
MNO-51	51	MNO, Kirman Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	95	97	2830	40	2847	2936	3071	Beta-179735	Bloom 2005	(Glacial Lake)
MNO-51	51	MNO, Kirman Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	146	147	3710	40	3958	4047	4155	Beta-179736	Bloom 2005	(Glacial Lake)
MNO-51	51	MNO, Kirman Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	182	183	4220	40	4624	4744	4763	Beta-179737	Bloom 2005	(Glacial Lake)
MNO-51	51	MNO, Kirman Lake	Lacustrine	Natural	Core from lake bed	Organic sediment	255	257	8720	50	9550	9681	9834	NSRL-12147	Bloom 2005	(Glacial Lake)
MNO-52	52	MNO-1977, Little Walker River	Surface glacial	Cultural	N1.5/W25, Feature 1	Charcoal	10	20	970	50	765	864	966	Beta-116923	Basgall 1998	Hopeval
MNO-53	53	MNO-3575/H, Antelope Valley	Surface deposit	Cultural	CU-5, ash/charcoal lens in Feature 02 house pit	Charcoal	10	20	210	30	144	180	216	Beta-200181	Jackson and Halford 2005	CAGLE
MNO-53	53	MNO-3575/H, Antelope Valley	Surface deposit	Cultural	CU-5, possible structural post in base of excavation unit	Charcoal	20	20	150	60	55	151	287	Beta-200182	Jackson and Halford 2005	CAGLE
MRP-01	1	MRP-017/H, Mormon Bar	Surface deposit	Cultural	Unit NE2	Charcoal	50	60	750	50	646	692	773	Beta-101013	Rondeau and Wulf 1998	Ahwahnee
MRP-01	1	MRP-017/H, Mormon Bar	Surface deposit	Cultural	Unit NE3	Charcoal	0	10	120	50	7	128	151	Beta-101012	Rondeau and Wulf 1998	Ahwahnee
MRP-01	1	MRP-017/H, Mormon Bar	Surface deposit	Cultural	Unit NW3	Charcoal	40	50	320	50	296	390	495	Beta-101014	Rondeau and Wulf 1998	Ahwahnee
MRP-01	1	MRP-017/H, Mormon Bar	Surface deposit	Cultural	Unit W1	Charcoal	0	10	120	50	7	128	151	Beta-101011	Rondeau and Wulf 1998	Ahwahnee
MRP-02	2	MRP-199, Mariposa Grove	Surface deposit	Cultural	EU 1	Charcoal	15	15	770	270	285	744	1280	Beta-021992	Hull1989c	Badgerpass
MRP-03	3	MRP-172, Wawona	Surface deposit	Cultural	TP 5	Charcoal	65	65	1690	230	1169	1624	2153	AA-00717	Ervin 1984	Vitrandic Xerorthents
MRP-03	3	MRP-172, Wawona	Surface deposit	Cultural	TP 5	Charcoal	125	125	3680	450	2949	4061	5145	AA-00716	Ervin 1984	Vitrandic Xerorthents
MRP-03	3	MRP-217, Wawona	Surface deposit	Cultural	TP 2	Charcoal	58	58	1730	70	1513	1646	1824	WSU-3072	Ervin 1984	Holland
MRP-03	3	MRP-645, Wawona	Surface deposit	Cultural	TP 3	Charcoal	45	45	820	240	429	787	1272	AA-00718	Ervin 1984	Holland
MRP-03	3	MRP-645, Wawona	Surface deposit	Cultural	TP 5	Charcoal	45	45	1710	80	1482	1624	1818	A-3969	Ervin 1984	Holland
MRP-03	3	MRP-651, Wawona	Surface deposit	Cultural	EU 3	Charcoal	45	45	1720	80	1483	1635	1822	Beta-020883	Hull 1989b	Vitrandic Xerorthents
MRP-03	3	MRP-651, Wawona	Surface deposit	Cultural	EU 3	Charcoal	25	25	2090	100	1870	2074	2331	Beta-020882	Hull 1989b	Vitrandic Xerorthents
MRP-03	3	MRP-652, Wawona	Surface deposit	Cultural	EU 2	Charcoal	-	-	2890	100	2790	3042	3268	Beta-020884	Hull 1989b	Vitrandic Xerorthents
MRP-03	3	MRP-655, Wawona	Surface deposit	Cultural	EU 5	Charcoal	35	35	1380	50	1233	1301	1381	Beta-020885	Hull 1989b	Holland
MRP-03	3	MRP-655, Wawona	Surface deposit	Cultural	EU 5	Charcoal	75	75	1960	50	1812	1912	2042	Beta-020886	Hull 1989b	Holland
MRP-04	4	TUO-0444(S), New Melones	Surface deposit	Cultural	27 degrees/2 m	Charcoal	30	40	1160	60	956	1082	1185	UCLA-2321A	Moratto 1985 in Breshini et al. 1996	
MRP-04	4	TUO-0444(S), New Melones	Surface deposit	Cultural	27 degrees/2 m, from screen	Charcoal	70	80	770	60	641	708	797	UCLA-2321B	Moratto 1985 in Breshini et al. 1996	
MRP-05	5	TUO-0568(S), New Melones	Surface deposit	Cultural	284 degrees/7 m	Charcoal	30	40	540	60	503	562	653	UCLA-2189A	Moratto 1985 in Breshini et al. 1996	
MRP-06	6	TUO-0493(S), New Melones	Surface deposit	Cultural	3 degrees/43 m	Charcoal	0	10	910	60	723	831	931	UCLA-2321G	Moratto 1985 in Breshini et al. 1996	
MRP-07	7	TUO-0304(S), New Melones	Surface deposit	Cultural	94 degrees/7 m	Charcoal	20	30	1390	60	1226	1308	1404	UCLA-2183C	Moratto 1985 in Breshini et al. 1996	
MRP-07	7	TUO-0307(S), New Melones	Surface deposit	Cultural	335 degrees/10 m	Charcoal	30	40	265	60	262	323	492	UCLA-2189G	Moratto 1985 in Breshini et al. 1996	
MRP-07	7	TUO-0894(S), New Melones	Surface deposit	Cultural	53 degrees/9 m	Charcoal	30	40	165	60	56	163	299	UCLA-2189I	Moratto 1985 in Breshini et al. 1996	
MRP-08	8	TUO-0272	Buried alluvium	Natural	Area 1A	Charcoal	503	518	1215	70	1046	1141	1282	UCR-1239	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Buried alluvium	Natural	Area 1A	Charcoal	762	777	1680	70	1406	1589	1738	UCR-1240	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Buried alluvium	Natural	Area 1B	Charcoal	137	152	1360	130	1048	1268	1526	UCR-1238	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Surface deposit	Cultural	Area 1C	Wood	0	15	1750	75	1518	1667	1869	UCR-1237	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Surface deposit	Cultural	Area 3: Level 3	Charcoal	20	30	1720	75	1508	1635	1821	UCR-0913	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Surface deposit	Cultural	Area 3A: Level 5	Shell (unknown)	40	50	1980	130	1015	1305	1590	UCR-1603	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Surface deposit	Cultural	Area 3B	Charcoal	46	61	1720	100	1409	1636	1865	UCR-1602	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Surface deposit	Cultural	Area 3B	Charcoal	30	46	1840	125	1514	1770	2063	UCR-1601	Moratto and Singleton 1985; CRD 1996	
MRP-08	8	TUO-0272	Surface deposit	Cultural	Area 3B: Level 4	Shell (unknown)	30	40	1840	125	905	1160	1410	UCR-1604	Moratto and Singleton 1985; CRD 1996	
MRP-09	9	MRP, McGurk Meadow	Surface deposit	Natural	McGurk Meadow	Organic Sediment	25	25	1600	50	1379	1481	1607	7.0	Anderson and Smith 1994	ROCK OUTCROP-GERLE
MRP-09	9	MRP, McGurk Meadow	Surface deposit	Natural	McGurk Meadow	Organic Sediment	50	50	4040	50	4416	4522	4647	9.4	Anderson and Smith 1994	ROCK OUTCROP-GERLE
MRP-09	9	MRP, McGurk Meadow	Surface deposit	Natural	McGurk Meadow	Organic Sediment	100	100	7880	50	8556	8696	8796	10.8	Anderson and Smith 1994	ROCK OUTCROP-GERLE
MRP-09	9	MRP-166, Glacier Pt. Rd.	Surface deposit	Cultural	EU 1	Charcoal	45	45	250	250	-5	299	566	Beta-047521	Hull 1990b	ROCK OUTCROP-GERLE
MRP-09	9	MRP-166, Glacier Pt. Rd.	Surface deposit	Cultural	EU 2	Charcoal	65	65	2890	50	2876	3030	3165	Beta-025123	Hull 1990b	ROCK OUTCROP-GERLE
MRP-09	9	MRP-166, Glacier Pt. Rd.	Surface deposit	Cultural	EU 2	Charcoal	55	55	2900	70	2857	3049	3256	Beta-025122	Hull 1990b	ROCK OUTCROP-GERLE
MRP-10	10	MRP-105, Crane Flat	Surface deposit	Cultural	Pit 22C, deepest part of site with Pinto points, excavated by Fitzwater, submitted by Meighan	Charcoal	122	137	2040	100	1811	2014	2313	UCLA-0278	Furgesson and Libby 1964; Adam 1967; Fitzwater 1968	Maymen
MRP-10	10	MRP-105, Crane Flat	Surface deposit	Cultural	Pit 22C, with Desert Side-notched points, excavated by Fitzwater, submitted by Meighan	Charcoal	46	61	950	70	725	854	979	UCLA-0276	Furgesson and Libby 1964; Adam 1967; Fitzwater 1968	Maymen

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
MRP-10	10	MRP-105, Crane Flat	Surface deposit	Cultural	Pit 22C, with Elko Corner-notched, Elko Eared, and Contracting Stem points, excavated by Fitzwater, submitted by Meighan	Charcoal	91	107	1580	80	1310	1473	1625	UCLA-0277	Furgesson and Libby 1964; Adam 1967; Fitzwater 1968	Maymen
MRP-10	10	MRP-250, El Portal	Surface deposit	Cultural	S36/W4	Charcoal (bark)	65	65	90	60	8	120	151	Beta-008743	Riley 1987	Maymen
MRP-10	10	MRP-250, El Portal	Surface deposit	Cultural	S36/W4	Charcoal	115	115	470	140	268	483	690	Beta-008744	Riley 1987	Maymen
MRP-10	10	MRP-250, El Portal	Surface deposit	Cultural	S45/E25	Charcoal	65	65	870	130	633	808	1016	Beta-008745	Riley 1987	Maymen
MRP-10	10	MRP-250, El Portal	Surface deposit	Cultural	S61/E23	Soil (SOM)	105	105	2630	140	2350	2723	3039	Beta-008747	Riley 1987	Maymen
MRP-10	10	MRP-250, El Portal	Surface deposit	Cultural	T2	Charcoal	75	75	510	60	465	539	653	Beta-008748	Riley 1987	Maymen
MRP-10	10	MRP-382, El Portal	Surface deposit	Cultural	EU 28	Charcoal	29	29	680	120	501	646	803	Beta-036193	Hull 1991b	Maymen
MRP-10	10	MRP-382, El Portal	Surface deposit	Cultural	N10/W1	Charcoal	135	135	340	90	267	387	535	Beta-008750	Riley 1987	Maymen
MRP-10	10	MRP-382, El Portal	Surface deposit	Cultural	N4/W1	Charcoal	125	125	270	90	244	317	505	Beta-008749	Riley 1987	Maymen
MRP-10	10	MRP-382, El Portal	Surface deposit	Cultural	S35/W47	Soil (SOM)	75	75	2430	90	2334	2514	2741	Beta-008752	Riley 1987	Maymen
MRP-10	10	MRP-382, El Portal	Surface deposit	Cultural	S35/W47	Soil (SOM)	125	125	3230	80	3321	3461	3641	Beta-008751	Riley 1987	Maymen
MRP-11	11	TUO-0657(S), New Melones	Surface deposit	Cultural	241 degrees/8 m	Charcoal	90	100	415	80	300	446	554	UCLA-2189E	Moratto 1985 in Breshini et al. 1996	
MRP-11	11	TUO-0657(S), New Melones	Surface deposit	Cultural	241 degrees/8 m	Charcoal	30	40	600	80	508	598	679	UCLA-2189J	Moratto 1985 in Breshini et al. 1996	
MRP-11	11	TUO-0657(S), New Melones	Surface deposit	Cultural	241 degrees/8 m	Charcoal	70	80	850	80	672	780	922	UCLA-2189M	Moratto 1985 in Breshini et al. 1996	
MRP-12	12	MRP, Woski Pond, Yosemite	Buried soil/marsh	Natural	Core 1, pond formed in oxbow channel	Organic Sediment	40	50	620	70	522	603	677	Beta-018362	Anderson and Carpenter 1991	Maymen
MRP-12	12	MRP, Woski Pond, Yosemite	Buried channel	Natural	Core 1, pond formed in oxbow channel	Organic Sediment	120	127	810	90	646	750	925	Beta-018363	Anderson and Carpenter 1991	Maymen
MRP-12	12	MRP, Woski Pond, Yosemite	Buried channel	Natural	Core 1, pond formed in oxbow channel	Organic Sediment	200	207	1440	90	1222	1353	1531	Beta-018364	Anderson and Carpenter 1991	Maymen
MRP-12	12	MRP-0057, Yosemite Valley	Surface deposit	Cultural	Feat. 06: EU1E7andEU1F7	Charcoal	7	17	350	40	313	399	495	Beta-160934	Hull 2002	ROCK OUTCROP-GERLE
MRP-12	12	MRP-0057, Yosemite Valley	Surface deposit	Cultural	Feat. 06: EU1E7andEU1F7	Charcoal	7	17	480	70	426	517	568	Beta-160933	Hull 2002	ROCK OUTCROP-GERLE
MRP-12	12	MRP-067, Yosemite Valley	Buried alluvium	Cultural	EU 1	Charcoal	155	155	3460	90	3549	3731	3929	Beta-016399	Mundy and Hull 1988	Musick
MRP-12	12	MRP-158/309, Yosemite Valley	Buried alluvium	Cultural	EU 1	Charcoal	65	65	490	80	426	523	655	Beta-016391	Mundy and Hull 1988	Maymen
MRP-12	12	MRP-158/309, Yosemite Valley	Buried alluvium	Cultural	EU 1	Charcoal	125	125	1030	80	763	945	1094	Beta-016393	Mundy and Hull 1988	Maymen
MRP-12	12	MRP-158/309, Yosemite Valley	Surface deposit	Cultural	EU 1	Charcoal	85	85	1050	70	793	968	1093	Beta-016392	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-056/301, Yosemite Valley	Surface deposit	Cultural	?	Organic Matter (unknown)	-	-	815	55	666	736	801	Beta-047520	Montague 1996	Maymen
MRP-13	13	MRP-163, Yosemite Valley	Surface deposit	Cultural	EU 1	Charcoal	55	55	1420	80	1223	1334	1447	Beta-016395	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-163, Yosemite Valley	Surface deposit	Cultural	EU 1	Charcoal	25	25	1480	110	1176	1392	1615	Beta-016394	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-196/300, Yosemite Valley	Surface deposit	Cultural	EU 1	Charcoal	85	85	281	139	55	311	517	AA-01579	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-196/300, Yosemite Valley	Surface deposit	Cultural	EU 1	Charcoal	135	135	985	113	686	896	1095	AA-01580	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-196/300, Yosemite Valley	Surface deposit	Cultural	EU 21	Charcoal	125	125	6140	95	6792	7032	7255	Beta-016396	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-196/300, Yosemite Valley	Surface deposit	Cultural	EU 3	Charcoal	105	105	190	70	-4	180	319	Beta-012426	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-196/300, Yosemite Valley	Surface deposit	Cultural	EU 5	Charcoal	115	115	978	89	722	880	1061	AA-01582	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-196/300, Yosemite Valley	Surface deposit	Cultural	EU 5	Charcoal	75	75	1327	58	1167	1249	1345	AA-01581	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-305, Yosemite Valley	Buried alluvium	Cultural	EU 2	Charcoal	65	65	1440	80	1239	1350	1524	Beta-016397	Mundy and Hull 1988	Maymen
MRP-13	13	MRP-305, Yosemite Valley	Buried alluvium	Cultural	EU 2	Charcoal	105	105	1640	60	1402	1537	1639	Beta-016398	Mundy and Hull 1988	Maymen
MRP-14	14	MRP-0062, Yosemite Valley	Surface deposit	Cultural	Feat. 02: EU6	Charcoal	18	18	250	50	261	298	464	Beta-106935	Hull 2002	Musick
MRP-15	15	TUO-4557, Greenstone Site	Buried soil	Natural	North Hess Tr. 14, Strat. II, 2Ab	Soil (SOM)	170	190	10310	90	11690	12240	12800	Beta-155052	Meyer et al. 2006	
MRP-15	15	TUO-4557, Greenstone Site	Buried colluvium	Natural	North Hess Tr. 14, Strat. III, Bt	Soil (SOM)	100	120	6490	140	7170	7420	7610	Beta-155051	Meyer et al. 2006	
MRP-16	16	TUO-2192/H, Sturgis Site	Surface deposit	Natural	Area 11, Trench 1, Strat II, AC	Charcoal	110	140	920	40	740	860	930	Beta-183847	Meyer and Dalldorf 2004	
MRP-16	16	TUO-2192/H, Sturgis Site	Buried soil	Natural	Area 11, Trench 8, Strat III, AB2	Soil (SOM)	100	140	5430	110	5940	6270	6420	Beta-183852	Meyer and Dalldorf 2004	
MRP-16	16	TUO-2193, Bucknam Site	Buried soil	Natural	Area 2, Trench A2-10, Strat. I, 2Ab	Soil (SOM)	80	100	4650	130	4960	5410	5620	Beta-181370	Meyer and Dalldorf 2004	
MRP-16	16	TUO-2195/H, Circle K/Cowden	Surface deposit	Natural	Buried mortar cup # 6	Soil (SOM)	-	-	40	60	0	40	100	Beta-172999	Rosenthal 2006	
MRP-16	16	TUO-2195/H, Circle K/Cowden	Surface deposit	Cultural	Peaceful Oak Tr. 17, Feature 01, A	Charcoal	50	55	100.1	10	0	50	100	Beta-160499	Meyer and Dalldorf 2004	
MRP-17	17	MRP, Tenaya Lake	Submerged plant	Natural	tree trunk	Wood (tree stump)	1100	1100	690	60	551	646	726	Beta-046709	Stine 1994	(Glacial lake)
MRP-17	17	MRP, Tenaya Lake	Submerged plant	Natural	tree trunk	Wood (tree stump)	1300	1300	950	30	794	855	926	LDGO-1719A	Stine 1994	(Glacial lake)
OUT-03	3	TUO, Green Spring Run	Surface deposit	Natural	Green Spring Run cutbank, 0.6 miles east of Keystone	Soil (SOM)	60	60	970	130	673	886	1149	GX-0?	Woodward Clyde 1978; Price 1982	
OUT-03	3	TUO, Green Spring Run	Buried soil	Natural	Green Spring Run cutbank, 0.6 miles east of Keystone	Soil (SOM)	120	120	3190	170	2964	3409	3830	GX-0?	Woodward Clyde 1978; Price 1982	
OUT-03	3	TUO, Lake Moran	Lacustrine	Natural	Core 86A starts @ 3.0 m below lake surface	Organic Sediment	260	270	3500	90	3557	3777	3992	8.9	Edlund, Eric G. 1991 (MA thesis)	
OUT-03	3	TUO, Lake Moran	Lacustrine	Natural	Core 86A starts @ 3.0 m below lake surface	Organic Sediment	353	363	4270	90	4526	4834	5054	9.6	Edlund, Eric G. 1991 (MA thesis)	
OUT-03	3	TUO, Lake Moran	Lacustrine	Natural	Core 86A starts @ 3.0 m below lake surface	Organic Sediment	570	580	9100	300	9538	10261	11096	10.9	Edlund, Eric G. 1991 (MA thesis)	
OUT-03	3	TUO, Lake Moran	Lacustrine	Natural	Core 86A starts @ 3.0 m below lake surface	Organic Sediment	650	660	12180	260	13531	14172	14997	11.6	Edlund, Eric G. 1991 (MA thesis)	
OUT-03	3	TUO, Lake Moran	Marsh	Natural	Core 88C starts @ 1.0 m below lake surface	Peat	180	190	9760	110	10735	11154	11407	11.3	Edlund, Eric G. 1991 (MA thesis)	
OUT-03	3	TUO, Lake Moran	Marsh	Natural	Core 88C starts @ 1.0 m below lake surface	Peat	236	244	11120	90	12889	13030	13189	11.5	Edlund, Eric G. 1991 (MA thesis)	
OUT-03	3	TUO, Little Yosemite Valley	Buried colluvium	Natural	glacial till	Wood	150	200	9000	600	8595	10187	11831	GaK-01705	Price 1982	
OUT-03	3	TUO, Rawhide Flat	Surface deposit	Natural	Seismic Trench 4, northeast of Jamestown	Wood (unknown)	50	60	320	85	266	378	522	GX-0?	Woodward Clyde 1978; Price 1982	
OUT-03	3	TUO, Rawhide Flat	Surface deposit	Natural	Seismic Trench 4, northeast of Jamestown	Soil (SOM)	50	60	2195	85	1990	2198	2351	GX-0?	Woodward Clyde 1978; Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Marsh	Natural	Swamp Lake Core at Yosemite	Peat	50	53	4450	165	4788	5095	5483	GX-06525	Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	130	140	8460	230	8974	9445	10173	GX-06526	Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	135	135	9410	315	9735	10696	11615	GX-09112	Price 1982; Batchelder in Moratto et al. 1984	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	180	190	9455	325	9773	10759	11758	GX-06527	Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	230	250	10965	440	11602	12835	13767	GX-06528	Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	250	260	12125	640	12851	14238	15922	GX-06529	Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	290	295	14035	510	15430	16829	18251	GX-06530	Price 1982	
OUT-03	3	TUO, Swamp Lake (lower)	Lacustrine	Natural	Swamp Lake Core at Yosemite	Organic Sediment	320	330	15565	820	16497	18647	20380	GX-06531	Price 1982	
OUT-03	3	TUO, Thompson Meadow	Buried soil	Natural	Base of gray clay at stream level	Charcoal	160	160	7380	245	7676	8197	8656	I-09110	Batchelder in Moratto et al. 1984	
OUT-03	3	TUO, Tuolumne River	Buried soil	Natural	Strat I, 2Ab horizon, SW cutbank at cemetery	Soil (SOM)	420	440	16960	70	19912	20089	20284	Beta-185710	Rosenthal and Meyer 2004 (b)	
OUT-03	3	TUO, Yosemite, Siesta Lake	Lacustrine	Natural	Core SL-1	Organic Sediment	57	63	4970	100	5579	5721	5922	Beta-098037	Brunelle and Anderson (2003)	
OUT-03	3	TUO, Yosemite, Siesta Lake	Lacustrine	Natural	Core SL-1	Organic Sediment	117	123	9050	150	9701	10188	10571	Beta-098038	Brunelle and Anderson (2003)	
OUT-03	3	TUO, Yosemite, Siesta Lake	Lacustrine	Natural	Core SL-1	Organic Sediment	243	257	11280	60	13067	13171	13279	Beta-088451	Brunelle and Anderson 2003	

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
OUT-03	3	TUO, Yosemite, Swamp Lake	Lacustrine	Natural	Core No. 1	Organic Sediment	104	110	1840	80	1567	1772	1934	Beta-030818	Smith and Anderson 1992	
OUT-03	3	TUO, Yosemite, Swamp Lake	Lacustrine	Natural	Core No. 1	Organic Sediment	93	103	2240	110	1947	2235	2499	Beta-030157	Smith and Anderson 1992	
OUT-03	3	TUO, Yosemite, Swamp Lake	Lacustrine	Natural	Core No. 1	Organic Sediment	251	261	3920	95	4083	4350	4622	Beta-029515	Smith and Anderson 1992	
OUT-03	3	TUO, Yosemite, Swamp Lake	Lacustrine	Natural	Core No. 1	Organic Sediment	600	610	10420	100	11986	12333	12695	Beta-029516	Smith and Anderson 1992	
OUT-03	3	TUO, Yosemite, Swamp Lake	Lacustrine	Natural	Core No. 1	Organic Sediment	706	716	13690	340	15278	16286	17294	Beta-027895	Smith and Anderson 1992	
OUT-03	3	TUO, Yosemite, Tuolumne Mdws	Buried channel	Natural	Charcoal layer in gravels under buried meadow	Charcoal	110	110	3930	80	4145	4362	4579	UGa-0675	Wood 1975	
OUT-03	3	TUO-0279, Don Pedro	Surface deposit	Cultural	96	Charcoal	55	55	295	90	254	353	515	I-05603	Henn 1971 in Breshini et al. 1996	
OUT-03	3	TUO-0300, Don Pedro	Surface deposit	Cultural	N-3	Charcoal	64	64	1035	90	761	951	1148	I-05602	Moratto 1971 in Breshini et al. 1996	
OUT-03	3	TUO-0300, Don Pedro	Surface deposit	Cultural	Q-7	Charcoal	70	70	730	95	535	682	801	I-05372	Moratto 1971 in Breshini et al. 1996	
OUT-03	3	TUO-0300, Don Pedro	Surface deposit	Cultural	R-10	Charcoal	40	60	1045	90	765	963	1174	I-05601	Moratto 1971 in Breshini et al. 1996	
OUT-03	3	TUO-0500, Tuolumne Mdws.	Surface deposit	Cultural	EU 2	Charcoal	14	14	1830	100	1536	1760	1954	Beta-072300	Vittands 1994b, 1996	
OUT-03	3	TUO-0500, Tuolumne Mdws.	Surface deposit	Cultural	EU 2	Charcoal	9	9	2020	70	1821	1982	2151	Beta-072298	Vittands 1994b, 1996	
OUT-03	3	TUO-0500, Tuolumne Mdws.	Surface deposit	Cultural	EU 2	Charcoal	15	15	2190	100	1921	2188	2362	Beta-072301	Vittands 1994b, 1996	
OUT-03	3	TUO-0500, Tuolumne Mdws.	Surface deposit	Cultural	EU 2	Charcoal	9	9	2380	100	2299	2458	2732	Beta-072299	Vittands 1994b, 1996	
OUT-03	3	TUO-2110, Phoenix Hydro.	Surface deposit	Natural	Near bedrock contact in Unit 02	Soil (SOM)	35	42	740	70	617	687	793	Beta-023567	Davis-King and Goldberg 1988	
OUT-03	3	TUO-2830, Dana Meadows	Surface deposit	Cultural	EU 2, on moraine	Charcoal	21	21	1280	60	1069	1208	1297	Beta-073050	Montague 1994 (a)	
OUT-04	4	KER-2450, Rosamond	Surface deposit	Cultural	Locus 1, Units 6, 7, 9, 11, Hearth 2	Charcoal	20	30	1110	50	931	1021	1141	Beta-038603	Sutton and Jackson 1993	Pond
OUT-05	5	INY, Franklin Lake	Lacustrine	Natural	Well 15	Organic Sediment?	nr	nr	5800	140	6307	6610	6931	DE-241	RCJ 1988	Playa
OUT-05	5	INY, Franklin Lake	Lacustrine	Natural	Well 16	Organic Sediment?	nr	nr	5900	130	6407	6729	7023	DE-243	RCJ 1988	BLACKMOUNT
OUT-05	5	INY, Franklin Lake	Lacustrine	Natural	Well GS-8	Organic Sediment?	1100	1100	12350	180	13863	14400	14994	DE-240	RCJ 1988	BLACKMOUNT
OUT-06	85	INY, Jeffrey Mine Canyon	Buried deposit	Natural	Cutbank section, below four debris-flow beds	Plant (stick)	280	300	1385	75	1168	1302	1417	?	Hubert and Fiipov 1989	Millner
OUT-10	10	KER-4619, Cross Mountain	?	Cultural	?	Charcoal	?	?	370	60	307	414	510	?	Gardner 2009	(no location)
OUT-10	10	KER-4619, Cross Mountain	?	Cultural	?	Charcoal	?	?	460	60	424	504	560	?	Gardner 2009	(no location)
OUT-10	10	SBR-5250, Rogers Ridge	Buried deposit	Natural	Embayment cluster, Feature #1-B	Soil (SOM)	30	40	5050	230	5300	5806	6309	Beta-012186	Jenkins 1985	
OUT-10	10	SBR-5250, Rogers Ridge	Buried deposit	Natural	N1043/E940, Feature 3	Soil (SOM)	50	70	8410	140	9022	9379	9632	Beta-012840	Jenkins 1985	
OUT-10	10	SBR-5250, Rogers Ridge	Buried deposit	Natural	N1047/E933, Feature 4, spring pit or well	Soil (SOM)	20	30	8300	110	9023	9285	9493	Beta-012843	Jenkins 1985	
OUT-10	10	SBR-5250, Rogers Ridge	Buried deposit	Natural	N918/E965	?	20	30	8420	210	8855	9386	9934	Beta-012844	Jenkins 1985; Gilreath 1987; CRD 1996	
OUT-10	10	SBR-5250, Rogers Ridge	?	Natural	N952/E912	?	10	20	4020	110	4231	4512	4829	Beta-012841	Jenkins 1985; Gilreath 1987; CRD 1996	
OUT-10	10	SBR-5250, Rogers Ridge	?	Cultural	Olivella bead	Shell (Olivella)	?	?	10495	85	10880	11259	11741	AA-012405	Basgall and Hall 1994	
OUT-10	10	SBR-5250, Rogers Ridge	?	Natural	Trench 5	?	5	30	7910	420	7921	8817	9774	Beta-010790	Jenkins 1985; Gilreath 1987; CRD 1996	
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1	Charcoal	540	540	1132	44	957	1036	1172	AA-53754	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1	Charcoal	720	720	1691	48	1421	1601	1715	AA-53755	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1	Charcoal	380	380	1257	87	978	1177	1307	AA-55852	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1	Charcoal	670	670	1676	34	1520	1583	1694	AA-55853	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1	Charcoal	nr	nr	1146	37	969	1054	1171	AA-61251	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1	Charcoal	nr	nr	1626	39	1411	1517	1609	AA-61262	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1, charcoal layer	Charcoal	560	560	1235	40	1066	1172	1267	AA-63783	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1, charcoal layer	Charcoal	500	500	1176	39	979	1102	1227	AA-63784	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa1, detrital charcoal	Charcoal (detrital)	280	280	1098	39	929	1006	1118	AA-63768	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa1, large detrital charcoal	Charcoal (detrital)	320	320	596	38	538	602	654	AA-61265	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2	Charcoal	nr	nr	411	63	314	451	530	AA-53624	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2	Charcoal	70	70	560	57	513	588	654	AA-53753	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2	Charcoal	80	80	359	43	314	408	498	AA-54215	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2	Charcoal	50	50	341	48	306	397	494	AA-54562	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2	Charcoal	75	75	662	53	547	620	683	AA-54563	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2	Charcoal	120	120	422	32	331	493	526	AA-55375	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Buried soil	Natural	A2, Qa2	Charcoal	230	230	737	61	558	684	782	AA-55851	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	A2, Qa2, single piece charcoal	Charcoal	240	240	392	36	319	458	513	AA-61531	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	AF2, Qaf4	Charcoal	nr	nr	26710	390	31107	31995	32883	AA-55379	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	AF2, Qaf4	Charcoal	nr	nr	18240	170	21101	21692	22180	AA-56606	DeLong and Arnold 2007	PLEASANTON
SBA-01	1	SBA, Cuyama River	Surface deposit	Natural	AF2, Qaf4, humic acids from charcoal	Charcoal (humic acids)	nr	nr	16820	310	19348	19961	20640	AA-56607	DeLong and Arnold 2007	PLEASANTON
SBA-02	2	FRE, Tranquillty well	Buried marsh	Natural	2-foot peat bed in Bureau of Reclamation test hole/well (15-14-15A?) in Sec. 12, T15E, R16E for Central Valley Water Project, sub. by E.F. Sullivan and Phil Dickinson; with Abies pollen	Peat	16760	16768	>17800	na				C-0617	Libby 1952 - Chicago Radiocarbon; Frink and Kues 1954	Panoche
SBA-02	2	SBA, Cuyama River	Surface deposit	Natural	A3, Qa2	Charcoal	320	330	544	44	509	558	647	AA-53627	DeLong and Arnold 2007	Panoche
SBA-02	2	SBA, Cuyama River	Surface deposit	Natural	A3, Qa2	Charcoal	370	380	710	68	546	664	752	AA-53750	DeLong and Arnold 2007	Panoche
SBA-02	2	SBA, Cuyama River	Surface deposit	Natural	A3, Qa2	Charcoal	nr	nr	682	59	547	640	715	AA-53751	DeLong and Arnold 2007	Panoche
SBA-02	2	SBA, Cuyama River	Surface deposit	Natural	A3, Qa2, charcoal layer	Charcoal	nr	nr	706	43	559	665	724	AA-53628	DeLong and Arnold 2007	Panoche
SBA-02	2	SBA, Cuyama River	Surface deposit	Natural	A3, Qa4	Wood	nr	nr	343	49	307	398	496	AA-53752	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, 2ABtb	Charcoal	nr	nr	10894	82	12785	12874	13000	AA-55901	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, 2ABtb	Charcoal	nr	nr	19510	720	21457	23290	25339	AA-56608	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, 2ABtb, amalgamated detrital charcoal	Charcoal	nr	nr	26040	270	30629	31275	31921	AA-61528	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, 2ABtb, amalgamated detrital charcoal	Charcoal	nr	nr	17810	170	20497	21045	21615	AA-61529	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, 2ABtb, amalgamated detrital charcoal	Charcoal	nr	nr	15600	81	18738	18870	18987	AA-62099	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, charcoal from 1.5m X 10cm	Charcoal	nr	nr	24970	250	29194	29980	30766	AA-54561	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, charcoal from 1.5m X 10cm	Charcoal	nr	nr	23140	170	27290	27766	28242	AA-55376	DeLong and Arnold 2007	Panoche
SBA-03	3	SBA, Cuyama River	Buried soil	Natural	AF1, Qaf5, single piece charcoal	Charcoal	nr	nr	20740	130	24493	24939	25417	AA-56609	DeLong and Arnold 2007	Panoche
SBN-01	1	SBN, Panoche Creek	Buried alluvium	Natural	Maximum age of Panoche Valley floodplain, "Patterson Alluvium"	Charcoal (detrital)	400	400	2850	100	2763	2992	3249	Beta-002345	Lettis 1982, 1985	Panoche

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SBN-02	2	SBN, Panoche Creek	Buried soil	Natural	Base of Panoche Valley floodplain, ~5Ab in south bank, Patterson Alluvium of Lettis 1982	Soil (with charcoal)	640	660	2820	25	2859	2920	2990	OS-71202	Meyer, Rosenthal, and Young (in progress)	Panoche
SBN-02	2	SBN, Panoche Creek	Buried alluvium	Natural	Dos Palos Alluvium; from laminated silt overlain by coarse sand	Charcoal (detrital)	300	350	200	70	-3	187	325	Beta-002616	Lettis 1982, 1985	Panoche
SBR-01	1	SBR, Cajon Creek, Lost Lake	Lacustrine	Natural	Charcoal from peat in Lost Swamp trench	Charcoal	25	35	550	60	507	578	654	UW-0698	Weldon and Sieh 1985	Playa
SBR-01	1	SBR, Cajon Creek, Lost Lake	Surface deposit	Natural	From upper colluvium in Lost Swamp trench	Charcoal (log)	195	205	295	30	348	386	459	UW-0699	Weldon and Sieh 1985	Playa
SBR-01	1	SBR, Cajon Creek, Lost Lake	Buried marsh	Natural	Low-grade peat from southeast end of Lost Swamp	Peat	65	75	2405	110	2300	2486	2746	UM-1812	Weldon and Sieh 1985	Playa
SBR-01	1	SBR, Cajon Creek, Lost Lake	Lacustrine	Natural	Organic residual from middle of lake clay	Organic Sediment	165	175	4480	60	4959	5136	5309	UW-0702	Weldon and Sieh 1985	Playa
SBR-02	2	SBR, Falling Arches	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	11650	190	13158	13515	13882	A-1548	Rowlands, 1978	(ROCK OUTCROP)
SBR-02	2	SBR, Redtail Peak	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	4240	70	4569	4753	4969	A-3649	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-02	2	SBR, Tunnel Ridge	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	200	70	-3	187	325	A-3939	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-02	2	SBR, Tunnel Ridge	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	10330	300	11241	12092	12834	A-1470	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-02	2	SBR, Tunnel Ridge	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	12330	350	13468	14410	15344	A-1582	Wells, 1983a	(ROCK OUTCROP)
SBR-02	2	SBR, Tunnel Ridge	Surface deposit	Natural	Yucca brevifolia leaves	Packrat Midden	0	1	12670	260	14019	14829	15624	A-1550	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-02	2	SBR, Whipple Mountains	Surface deposit	Natural	Larrea tridentata twigs	Packrat Midden	0	1	11015	110	12825	12965	13136	AA-01576	Van Devender, 1990b	(ROCK OUTCROP)
SBR-03	3	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	10490	110	12083	12451	12780	A-3944	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Larrea divaricata twigs	Packrat Midden	0	1	5020	240	5277	5772	6308	A-2160	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	470	60	427	512	562	A-3940	Arundel, 2000	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	940	70	723	849	968	A-3941	Arundel, 2000	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	6710	160	7310	7583	7867	A-3942	Van Devender and Hawksworth, 1986	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	7500	80	8164	8308	8447	A-3733	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	8180	130	8752	9143	9470	A-3732	Van Devender and Hawksworth, 1986	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	8540	100	9290	9528	9777	A-3943	Van Devender and Hawksworth, 1986	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Nolina bigelovii leaves	Packrat Midden	0	1	9920	130	11102	11437	11843	A-1551	Van Devender, 1977a	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	730	60	626	678	774	?	Spaulding 1999	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	920	130	651	845	1090	?	Spaulding 1999	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	9980	180	11069	11549	12167	A-1538	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-03	3	SBR, Whipple Mountains	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	10430	170	11749	12319	12816	A-1615	Mead et al. 1978	(ROCK OUTCROP)
SBR-04	4	SBR, Redtail Peak	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	9310	150	10200	10528	10878	A-3731	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-05	5	SBR, Marble Canyon	Buried soil	Natural	From 3Bkb horizon in west wall of trench across fault	Soil (SOM)	240	245	9710	50	11070	11149	11236	Beta-?	Spotila and Anderson 2003	Depositional (inferred)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Midden debris	Packrat Midden	0	1	10600	105	12340	12612	12837	A-1661, A-1662, and A-1664	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	8040	120	8594	8909	9276	A-3650	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	9330	110	10239	10536	10791	A-3734	Van Devender et al. 1990b	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Nolina bigelovii leaves	Packrat Midden	0	1	9600	160	10490	10925	11314	A-1663	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Nolina bigelovii leaves	Packrat Midden	0	1	10840	170	12386	12828	13133	A-1616	Rowlands, 1978	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	730	60	626	678	774	A-3648	Van Devender and Hawksworth, 1986	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	8910	380	9118	10023	11105	A-1580	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	9160	170	9741	10351	10780	A-1668	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	9600	170	10413	10924	11344	A-1655	Van Devender, 1977a	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	10030	160	11170	11605	12163	A-1620	Mead et al. 1978	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	11520	160	13107	13388	13720	A-1621	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	13810	270	15620	16449	17290	A-1650	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Pinus monophylla needles)	Packrat Midden	0	1	11360	500	11990	13280	14656	AA-00380	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-06	6	SBR, Redtail Peak	Surface deposit	Natural	Wood (Pinus monophylla)	Packrat Midden	0	1	12960	210	14625	15321	16050	A-1666	King and Van Devender, 1977	(ROCK OUTCROP)
SBR-07	7	SBR, Blackhawk Landslide	Surface deposit	Natural	Freshwater pond formed on landslide debris	Shell-f (freshwater)	0	90	17400	550	18745	19729	20913	nr	Stout 1977	JOSHUA
SBR-08	8	SBR, Turtle Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	13900	200	15931	16566	17207	UCLA-0756	Wells and Berger 1967	(ROCK OUTCROP)
SBR-08	8	SBR, Turtle Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	19500	380	22337	23236	24196	UCLA-1063	Wells and Berger 1967	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Astragalus layneae seed pods	Packrat Midden	0	1	3450	800	1863	3786	5734	UCR-0188	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Midden #13, Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	12100	400	13213	14119	15194	UCR-0181	Taylor 1975 (RCJ); King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Midden #15, Miscellaneous twigs	Packrat Midden	0	1	1610	150	1273	1525	1870	UCR-0133	Taylor 1975 (RCJ); King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	3650	210	3446	3996	4531	UCR-0235	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	3690	210	3474	4049	4582	UCR-0237	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	3750	240	3559	4132	4822	UCR-0240	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	3750	205	3585	4129	4646	UCR-0236	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	4300	240	4239	4885	5481	UCR-0239	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	4470	345	4222	5085	5911	UCR-0234	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	5700	245	5986	6520	7029	UCR-0238	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	7100	250	7506	7935	8391	UCR-0241	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	7820	570	7588	8748	9958	UCR-0185	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	7800	350	7972	8691	9473	UCR-0249	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	8300	780	7568	9336	11291	UCR-0186	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Lucerne Valley	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	11100	420	11947	13003	13878	UCR-0187	King 1976a	(ROCK OUTCROP)
SBR-09	9	SBR, Negro Butte	Surface deposit	Natural	Uriniferous material	Packrat Midden	0	1	9140	140	9907	10331	10691	UCLA-0757	Wells and Berger 1967	(ROCK OUTCROP)
SBR-10	10	SBR, Lucerne Peak	Surface deposit	Natural	A single Larrea divaricata branch from midden	Packrat Midden	0	1	5800	250	6175	6633	7249	UCR-0135	Taylor 1975 (RCJ); King 1976a	(ROCK OUTCROP)
SBR-10	10	SBR, Sunset Cove	Surface deposit	Natural	Miscellaneous twigs from midden	Packrat Midden	0	1	5880	250	6201	6723	7307	UCR-0134	Taylor 1975 (RCJ); King 1976a	(ROCK OUTCROP)
SBR-11	11	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	10460	330	11248	12243	12943	GX-06178	Spaulding 1980	(ROCK OUTCROP)
SBR-12	12	SBR, Lucerne Valley, Ord Mountain	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds) from midden	Packrat Midden	0	1	11850	550	12781	13864	15383	UCR-0149	Taylor 1975 (RCJ); King 1976a	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Larrea tridentata twigs	Packrat Midden	0	1	1465	80	1262	1371	1538	GX-06179	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	1680	150	1301	1598	1898	GX-06181	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	4360	210	4421	4974	5479	GX-06184	Spaulding 1980	(ROCK OUTCROP)

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	7930	285	8281	8822	9474	GX-06185	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	8925	360	9239	10037	11093	GX-06186	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Miscellaneous twigs	Packrat Midden	0	1	10555	210	11766	12450	12902	GX-06189	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	3080	165	2853	3265	3641	GX-06177	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	4475	170	4803	5122	5585	GX-06187	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	5520	190	5909	6311	6736	GX-06191	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	7635	260	7939	8477	9092	GX-06190	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	9515	185	10294	10830	11237	GX-06180	Spaulding 1980	(ROCK OUTCROP)
SBR-13	13	SBR, Marble Mountains	Surface deposit	Natural	Wood (Juniperus sp. twigs/seeds)	Packrat Midden	0	1	8905	265	9409	9992	10705	GX-06188	Spaulding 1980	(ROCK OUTCROP)
SBR-14	14	SBR-0199, Newberry Cave	Surface deposit	Natural	Extinct ground sloth ribs	Bone (ground sloth)	0	1	11600	500	12593	13551	15015	UCR-01143	Davis 1981; Moratto 1984	
SBR-14	14	SBR-0199, Newberry Cave	Surface deposit	Cultural	Split wood figurines from Room 3, SWM cat. No. 3-102-19	Wood	45	60	2970	250	2654	3141	3724	LJ-993	Hubbs et al. 1965	
SBR-15	15	SBR, Marble Mountains	Surface deposit	Natural	Miscellaneous twigs and midden debris	Packrat Midden	0	1	10090	380	10678	11738	12813	GX-06182	Spaulding 1983	(ROCK OUTCROP)
SBR-15	15	SBR, Marble Mountains	Surface deposit	Natural	Neotoma sp. fecal pellets	Packrat Midden	0	1	10325	350	11092	12063	12929	GX-06183	Spaulding 1983	(ROCK OUTCROP)
SBR-16	16	SBR, Chemehuevi Mountain	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	16900	190	19743	20040	20427	UCLA-1666	Wells, 1983a	(ROCK OUTCROP)
SBR-17	17	SBR, Newberry Cave	Surface deposit	Natural	Uriniferous material	Packrat Midden	0	1	7400	100	8018	8222	8386	UCLA-0759	Wells and Hunziker 1976	Cajon
SBR-18	18	SBR, Calico Lakes	Buried deposit	Natural	Extinct large mammal, mole, and fish bones, SBCM locality 1.76.35 (Calico Lakes Phase I)	Charcoal	110	244	9050	350	9422	10199	11198	GX-10418	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-18	18	SBR, Calico Lakes	Buried deposit	Natural	Extinct large mammal, mole, and fish bones, SBCM locality 1.76.35 (Calico Lakes Phase I)	Bone (apatite)	274	304	12800	900	12939	15108	17597	GX-10417	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-18	18	SBR, Luz Foundation	Buried deposit	Natural	Fossil horse and small vertebrates recovered in deposits above sample	Charcoal	300	315	10910	425	11601	12767	13682	GX-10421	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-18	18	SBR, Solar One	Surface deposit	Natural	Associated with granitic river sands and lenses of silts (channel deposits?)	Charcoal	60	60	7350	115	7968	8169	8377	QC-0937	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-18	18	SBR, Solar One	Buried channel	Natural	From channel silts that contained human remains found and many small mammal bones	Charcoal	270	280	2090	105	1865	2074	2335	QC-939A	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-18	18	SBR, Solid Waste	Buried deposit	Natural	Associated with extinct fossil horse and small camel	Charcoal	182	219	1570	170	1171	1490	1878	GX-10419	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-18	18	SBR, Solid Waste	Buried deposit	Natural	Fossil mole bones, SBCM locality 1.76.33 (Solid Waste site)	Charcoal	329	344	12210	430	13247	14279	15409	GX-10420	Reynolds & Reynolds 1985; Reheis et al. 2007	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	?	Shell-f (Anodonta)	nr	nr	11810	100	12804	12919	13096	UCLA-2609A	Meek 1994a; Jefferson 2003	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	?	Shell-f (Anodonta)	nr	nr	12900	120	13638	13909	14195	UCLA-2609	Meek 1994a; Jefferson 2003	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	?	Shell-f (Anodonta)	nr	nr	13560	145	14254	14939	15408	UCLA-2609B	Meek 1994a; Jefferson 2003	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	13810	35	15036	15296	15601	WW-5354	Dudash 2006?	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	14335	40	15663	16024	16432	WW-5353	Dudash 2006?	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	15100	45	16596	17013	17424	WW-5144	Dudash 2006?	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	15825	45	18034	18297	18559	WW-5351	Dudash 2006?	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	16175	45	18590	18704	18812	WW-5352	Dudash 2006?	Cajon
SBR-19	19	SBR, Coyote Lake	Surface deposit	Natural	sandy mud	Shell-f (Anodonta)	nr	nr	13145	45	13992	14171	14574	WW-4564	Dudash 2006?	Cajon
SBR-19	19	SLO, Wallace Creek, SAF	Buried alluvium	Natural	Trench 10, colluvial wedge in middle of channel deposits	Organic Sediment	135	145	3780	155	3705	4166	4572	UW-0742	Sieh and Jahns 1984	Polonio
SBR-20	20	SBR, Afton Canyon	Surface deposit	Natural	in situ on the highest shoreline of Lake Manix	Shell-f (Anodonta)	0	1	14230	1325	14060	15893	17568	UCLA-2601	Meek 1989	Cajon
SBR-21	21	SBR, Coyote Lake	Lacustrine	Natural	From shoreline NE of Coyote Lake (playa)	Shell-f (Anodonta)	0	1	13800	600	13645	15243	16888	LJ-0958	Hubbs, Bien, and Suess 1965 (RCJ)	Playa
SBR-21	21	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	15707	45	17811	18093	18511	WW-5146	Dudash 2006?	Dune land
SBR-21	21	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	15805	45	18020	18285	18548	WW-5145	Dudash 2006?	Dune land
SBR-21	21	SBR, Coyote Lake	Surface deposit	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	15910	45	18087	18358	18630	WW-5147	Dudash 2006?	Dune land
SBR-21	21	SBR, Coyote Lake	Lacustrine	Natural	lacustrine sand	Shell-f (Anodonta)	nr	nr	19680	70	22207	22362	22515	WW-5519	Dudash 2006?	Dune land
SBR-21	21	SBR, Coyote Lake	Surface deposit	Natural	sand and gravel	Shell-f (Anodonta)	nr	nr	15590	45	17366	17878	18078	WW-5355	Dudash 2006?	Cajon
SBR-21	21	SBR, Coyote Lake	Surface deposit	Natural	sandy mud	Shell-f (Anodonta)	nr	nr	19660	70	22193	22347	22501	WW-4562	Dudash 2006?	Cajon
SBR-22	22	SBR, Coyote Lake	Lacustrine	Natural	Core in southern playa	Shell-f (Anodonta)	345	355	46240	790	49765	51345	52925	nr	Dudash 2006	Playa
SBR-23	23	SBR, Soda Lake	Surface deposit	Natural	Beach Ridge-Soda Lake, Elephant Ridge complex	Shell-f (Anodonta)	40	40	12020	130	12873	13070	13273	Beta-021199	Wells et al. 2003	CARRIZO
SBR-24	24	SBR, Silver Lake	Lacustrine	Natural	Dates Qe3 unit - early Holocene eolian deposit (dune sand)	Shell-f (Anodonta)	?	?	10333	120	10539	10823	11131	?	Wells et al. 1987, 1989, 1990; McDonald et al. 2003	Playa
SBR-24	24	SBR, Silver Lake	Lacustrine	Natural	Dates Ql2 unit - lates Holocene lacustrine deposit	Shell-f (Anodonta)	0	1	11320	120	11974	12395	12784	?	Wells et al. 1987, 1989, 1990; McDonald et al. 2003	Playa
SBR-24	24	SBR, Silver Lake	Surface deposit	Natural	Silver Lake fan delta (south end of lake)	Organic Sediment	15	17	390	90	282	422	556	Beta-025634	Wells et al. 2003	Playa
SBR-24	24	SBR, Silver Lake	Lacustrine	Natural	Silver Lake Sil-M Core (south end of lake)	Organic Sediment	55	59	3620	70	3811	3937	4098	Beta-025341	Wells et al. 2003	Playa
SBR-24	24	SBR, Silver Lake	Lacustrine	Natural	Silver Lake Sil-M Core (south end of lake)	Organic Sediment	300	310	9330	95	10247	10533	10765	Beta-024342	Wells et al. 2003	Playa
SBR-25	25	SBR, Soda Mountains	Surface deposit	Natural	Neotoma pellets from midden in alcover 6-8 m above channel dissecting Qf1 unit	Packrat Midden	0	1	3400	60	3551	3651	3780	DIC-3033	Wells et al. 1987, 1989, 1990; McDonald et al. 2003	Rock outcrop
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Charcoal	nr	nr	660	40	553	615	676	CAMS-76488	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Charcoal	nr	nr	710	50	628	665	731	CAMS-76487	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	nr	nr	810	40	-3	44	128	CAMS-76423	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	nr	nr	810	40	-3	44	128	CAMS-76425	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	nr	nr	850	50	-3	61	149	CAMS-76424	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Charcoal	nr	nr	860	50	687	776	834	CAMS-76489	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	44	56	8240	40	8151	8259	8369	CAMS-76419	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	44	56	9290	50	9391	9500	9653	CAMS-76420	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	44	56	9790	40	10033	10187	10337	CAMS-76422	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	44	56	9880	40	10170	10281	10422	CAMS-76421	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	48	60	9970	40	10237	10377	10502	CAMS-76413	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	nr	nr	9990	40	10249	10401	10518	CAMS-76426	Owens et al. 2007	GUNSIGHT

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	54	60	10320	40	10594	10774	11024	CAMS-76415	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	67	72	10420	40	10718	10941	11117	CAMS-76414	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	36	44	10430	40	10731	10955	11125	CAMS-76416	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	76	84	10480	40	10789	11030	11162	CAMS-76411	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	48	56	10580	40	11029	11149	11235	CAMS-76417	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	100	110	13230	50	14088	14372	14782	CAMS-76418	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	?	Shell-f (Anodonta)	112	120	13290	50	14164	14481	14875	CAMS-76412	Owens et al. 2007	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Beach ridge	Shell-f (Anodonta)	255	269	14550	140	15801	16303	16826	Y-1586	Ore and Warren 1971; Wells et al. 1989	CARRIZO
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Beach ridge	Shell-f (Anodonta)	255	269	15350	240	16623	17468	18208	Y-1587	Ore and Warren 1971; Wells et al. 1989	CARRIZO
SBR-26	26	SBR, Silver Lake	Surface deposit	Natural	Beach Ridge I, El Capitan complex	Shell-f (Anodonta)	138	148	13640	120	14616	15087	15556	Beta-026456	Brown 1990; Wells et al. 2003	CARRIZO
SBR-26	26	SBR, Silver Lake	Surface deposit	Natural	Beach Ridge III, El Capitan complex	Shell-f (Anodonta)	0	1	10330	120	10537	10819	11129	Beta-021200	Wells et al. 2003	CARRIZO
SBR-26	26	SBR, Silver Lake	Surface deposit	Natural	Beach Ridge V, El Capitan complex	Shell-f (Anodonta)	133	143	9390	120	9386	9648	10042	Beta-029552	Wells et al. 2003	CARRIZO
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Bench Mark Bay, northwest beaches	Shell-f (Anodonta)	100	100	9340	140	9250	9593	10038	Y-2407	Ore and Warren 1971; Wells et al. 2003	CARRIZO
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Bench Mark Bay, northwest beaches	Shell-f (Anodonta)	30	50	10270	160	10375	10753	11155	Y-2406	Ore and Warren 1971; Wells et al. 2003	Rock outcrop
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Bench Mark Bay, northwest beaches	Shell-f (Anodonta)	30	30	12450	160	13167	13462	13781	Y-2408	Ore and Warren 1971; Wells et al. 1989	CARRIZO
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	30	50	10260	400	9642	10759	11948	LJ-0932	Ore and Warren 1971; Wells et al. 1989	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	74	84	10580	100	10735	11120	11343	Y-1593	Ore and Warren 1971; Wells et al. 1989	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	64	130	10700	100	11050	11270	11714	Y-1591	Ore and Warren 1971; Wells et al. 1989	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	155	190	13290	350	13625	14532	15544	Y-1589	Ore and Warren 1971	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	155	190	13670	550	13631	15057	16581	LJ-0933	Ore and Warren 1971; Wells et al. 1989	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction, collected by Woodward of Union Oil Co; associated with Lake Mojave points	Shell-f (Anodonta)	30	50	9640	240	9420	9953	10527	LJ-0200	Hubbs et al. 1962; Wallace and DeCosta 1964; Meighan 1965; Ore and Warren 1971	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction, unreported date per H.C. Smith	Shell-f (Anodonta)	0	50	13150	350	13436	14368	15300	I-0000?	Hubbs et al. 1962; Wallace and DeCosta 1964	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Surface deposit	Natural	Northwest Silver Lake, El Capitan BR II	Shell-f (Anodonta)	0	10	11860	95	12829	12954	13112	DIC-2824	Wells et al. 2003	Rock outcrop
SBR-26	26	SBR, Silver Lake	Surface deposit	Natural	Northwest Silver Lake, El Capitan BR II	Shell-f (Anodonta)	0	10	11970	160	12828	13040	13284	Beta- (written comm.)	Weldon 1982; Wells et al. 2003	Rock outcrop
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Outlet channel, error often misreported as ± 100	Shell-f (Anodonta)	30	70	13620	160	14295	15035	15554	Y-1585	Ore and Warren 1971; Berger and Meek 1992; Wells et al. 1989; Wells et al. 2003	CARRIZO
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Silver Lake Sil-I Core (north end of lake)	Organic Sediment	600	600	14200	145	16403	16975	17559	Beta-025339	Wells et al. 2003	Playa
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Silver Lake Sil-I Core (north end of lake)	Organic Sediment	980	980	14660	260	16871	17726	18591	Beta-021800	Wells et al. 2003	Playa
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Silver Lake Sil-I Core (north end of lake)	Organic Sediment	1590	1590	20320	740	22672	24310	26000	Beta-021801	Wells et al. 2003	Playa
SBR-26	26	SBR, Silver Lake	Surface deposit	Natural	Tidewater Basin Beach, Ridge II-Silver Lake	Shell-f (Anodonta)	255	269	16270	310	17894	18685	19335	Beta-029553	Brown 1990; Wells et al. 1989; Wells et al. 2003	CARRIZO
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Upper of two shell layers exposed in gravel quarry in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	30	50	10000	300	9630	10406	11146	I-00444	Hubbs, Bien, and Suess 1965 (RCJ); Ore and Warren 1971	Playa
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Upper of two shell layers exposed in gravel quarry in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Shell-f (Anodonta)	155	190	13150	240	13722	14343	15079	I-00443	Hubbs, Bien, and Suess 1965 (RCJ); Ore and Warren 1971	GUNSIGHT
SBR-26	26	SBR, Silver Lake	Lacustrine	Natural	Wave-rounded tufa 30 cm above upper shell bed in gravel Pit in NE 1/4 of Sec. 29 3.2 km W of SL Junction	Carbonate (tufa)	0	20	9160	400	8389	9366	10329	LJ-935	Hubbs et al. 1965	GUNSIGHT
SBR-27	27	SBR, Ivanpah Mountains	Buried deposit	Natural	Near center of Late Pleist.-Early Holo. faunal deposit in Kokoweef Cave (SBCM site no. SBC1.11.13)	Charcoal	625	655	9830	150	10746	11280	11812	Beta-002155	Goodwin and Reynolds 1989; Bell and Jass 2004	Rock outcrop
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	700	60	617	655	731	Beta-052673	Spaulding 1999	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	1440	60	1268	1344	1420	Beta-052491	Spaulding 1995	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	1450	60	1278	1351	1422	Beta-052490	Spaulding 1995	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	2640	60	2696	2764	2877	Beta-053501	Koehler et al. 2005	Cajon
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	2640	70	2678	2762	2892	Beta-053503	Spaulding 1995	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	2790	90	2749	2914	3084	Beta-053502	Spaulding 1995	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	3030	70	3058	3230	3381	Beta-052676	Koehler et al. 2005	Cajon
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	3160	80	3205	3384	3573	Beta-052492	Spaulding 1995	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	3490	90	3555	3766	3986	Beta-052493	Spaulding 1995	ROCK OUTCROP (lithic torriorthents)
SBR-28	28	SBR, Granite Mountains	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	11470	70	13194	13321	13453	Beta-052489	Koehler et al. 2005	Cajon
SBR-29	29	SBR, Valley Wells	Buried marsh	Natural	Black organic mat from fossil spring	Organic sediment	nr	nr	10250	160	11386	11993	12416	AA-04898	Quade et al. 1995	Arizo
SBR-29	29	SBR, Valley Wells	Buried marsh	Natural	Black organic mat from fossil spring	Organic sediment	nr	nr	11600	120	13242	13460	13716	AA-05879	Quade et al. 1998	Arizo
SBR-29	29	SBR, Valley Wells	Buried marsh	Natural	Black organic mat from fossil spring	Organic sediment	nr	nr	2320	85	2129	2348	2546	AA-05880	Quade et al. 1998	Arizo
SBR-29	29	SBR, Valley Wells	Buried marsh	Natural	From green clay deposit in Unit X, capped by Unit E	Shell-f (gastropod)	nr	nr	30280	210	35199	35667	36135	nr	Pigati and Miller 2008	Arizo
SBR-29	29	SBR, Valley Wells	Buried marsh	Natural	From green clay deposit in Unit X, capped by Unit E	Shell-f (gastropod)	nr	nr	33770	220	38618	39146	39674	nr	Pigati and Miller 2008	Arizo
SBR-29	29	SBR, Valley Wells	Surface deposit	Natural	From light brown silt unit that caps Unit E2	Shell-f (gastropod)	nr	nr	7930	50	8628	8778	8983	nr	Pigati and Miller 2008	Arizo
SBR-29	29	SBR, Valley Wells	Surface deposit	Natural	From light brown silt unit that caps Unit E2	Shell-f (gastropod)	nr	nr	8630	60	9493	9601	9744	nr	Pigati and Miller 2008	Arizo
SBR-29	29	SBR, Valley Wells	Buried deposit	Natural	Organic-rich clay in Unit E2	Organic sediment	nr	nr	9650	50	10785	11011	11198	nr	Pigati and Miller 2008	Arizo
SBR-29	29	SBR, Valley Wells	Buried deposit	Natural	Organic-rich clay in Unit E2	Organic sediment	nr	nr	10780	40	12766	12823	12868	nr	Pigati and Miller 2008	Arizo

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 1	Carbonate (CaC03)	20	30	10371	62	10629	10864	11098		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 1	Carbonate (CaC03)	79	80	25272	204	29845	30415	30985		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 1	Carbonate (CaC03)	89	90	25064	255	29340	30118	30896		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 1	Carbonate (CaC03)	90	100	22941	191	27031	27541	28051		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 2	Carbonate (CaC03)	30	30	6663	48	6489	6658	6802		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 2	Carbonate (CaC03)	70	70	13331	69	14181	14559	14950		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 2	Carbonate (CaC03)	130	130	28696	228	33533	34093	34653		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 2, snail shell	Shell-f (gastropod)	35	35	>37000	na					Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 3	Carbonate (CaC03)	38	40	9386	72	9451	9615	9863		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 3	Carbonate (CaC03)	60	64	29768	186	34741	35185	35629		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 3	Carbonate (CaC03)	77	77	23154	469	26685	27781	28877		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles Lake, SE Shore	Lacustrine	Natural	Southeast shoreline, Trench 3	Carbonate (CaC03)	104	110	20973	213	23483	24087	24655		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles, Christmas Ridge Site	Lacustrine	Natural	TU5-A, southeast shoreline	Carbonate (CaC03)	20	20	18838	155	20772	21309	21939		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles, Lagunita Site	Lacustrine	Natural	TU2-A	Carbonate (CaC03)	30	30	10200	50	10481	10610	10813		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles, Lagunita Site	Lacustrine	Natural	TU2-B	Carbonate (CaC03)	40	40	11160	50	11852	12097	12357		Ramirez de Bryson 2004	Cajon
SBR-30	30	SBR, Searles, Lagunita Site	Lacustrine	Natural	TU2-C	Carbonate (CaC03)	80	90	21975	408	25400	26420	27440		Ramirez de Bryson 2004	Cajon
SBR-31	31	SBR, Awl	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	1360	70	1167	1280	1402	Beta-064991	Koehler et al. 2005	ROCK OUTCROP (lithic torriorthents)
SBR-31	31	SBR, Awl	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	1390	50	1240	1308	1389	Beta-064992	Koehler et al. 2005	ROCK OUTCROP (lithic torriorthents)
SBR-31	31	SBR, Awl	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	6770	100	7458	7627	7797	Beta-063230	Koehler et al. 2005	ROCK OUTCROP (lithic torriorthents)
SBR-31	31	SBR, Awl	Surface deposit	Natural	Packrat Midden	Packrat Midden	0	1	17870	120	20655	21115	21543	Beta-063231	Koehler et al. 2005	ROCK OUTCROP (lithic torriorthents)
SBR-32	32	SBR, Searles Lake, Pilot Knob	Buried deposit	Natural	Trench 2, east wall	Plant (twig)	37	38	267	60	264	328	492	AA-05774	McGill 1992	Depositional (inferred)
SBR-33	33	SBR, Silurian Lake	Lacustrine	Natural	Si-1-I, core at southern end of playa	Organic Sediment	580	580	13450	60	15618	15984	16399	Beta-085541	Anderson and Wells 2003b	Playa
SBR-33	33	SBR, Silurian Lake	Lacustrine	Natural	Si-1-II, core at southern end of playa	Organic Sediment	1800	1800	9210	70	10239	10380	10524	Beta-085542	Anderson and Wells 2003b	Playa
SBR-34	34	SBR, Clark Mountain	Surface deposit	Natural	Undifferentiated midden matrix	Packrat Midden	0	1	23600	950	26044	28302	30560	I-03557	Mehringer and Ferguson, 1969	Rock Outcrop (PENELAS-UBEHEBE)
SBR-34	34	SBR, Clark Mountain	Surface deposit	Natural	Undifferentiated midden matrix	Packrat Midden	0	1	28720	900	32233	34107	35981	I-03648	Mehringer and Ferguson, 1969	Rock Outcrop (PENELAS-UBEHEBE)
SBR-34	34	SBR, Clark Mountain	Surface deposit	Natural	Wood (Pinus monophylla)	Packrat Midden	0	1	12460	190	13976	14540	15136	I-03690	Mehringer and Ferguson, 1969	Rock Outcrop (PENELAS-UBEHEBE)
SBR-35	35	SBR, Searles, Navy Road	Lacustrine	Natural	Dry wash W of Navy-Randsburg Rd, SL93-12	Carbonate (tufa)	0	1	12400	100	13212	13398	13650	ETH-?	Lin et al 1998	Cajon
SBR-35	35	SBR, Searles, Navy Road	Lacustrine	Natural	Dry wash W of Navy-Randsburg Rd, Strat. Unit A	Carbonate (lithoid tufa)	0	1	10900	40	11289	11543	11760	USGS-2845	Garcia et al. 1993	Cajon
SBR-36	36	SBR, Clark Mountain	Surface deposit	Natural	Wood (Utah juniper needles)	Packrat Midden	0	1	19900	1500	22282	23515	25465	Gak-01987	Spaulding 1981	Rock Outcrop (PENELAS-UBEHEBE)
SBR-37	37	SBR, Pinnacles wash	Lacustrine	Natural	East side of dry wash, 0.3 m above base of Strat Unit A1	Carbonate (beach sand)	nr	nr	32300	290	37033	37693	38353	USGS-2843	Garcia et al. 1993	Cajon
SBR-37	37	SBR, Pinnacles wash	Lacustrine	Natural	East side of dry wash, on Strat Unit A 4	Carbonate (pod-like tufa)	nr	nr	18100	170	19975	20378	20855	USGS-2844	Garcia et al. 1993	Cajon
SBR-37	37	SBR, Pinnacles wash	Lacustrine	Natural	East side of dry wash, Unit A 3 over A1	Carbonate (tufa)	nr	nr	25400	140	30193	30577	30961	USGS-2841	Garcia et al. 1993	Cajon
SBR-37	37	SBR, Pinnacles wash	Lacustrine	Natural	East side of dry wash, Unit A 3 over A1	Carbonate (tufa)	nr	nr	29100	240	33942	34514	35086	USGS-2842	Garcia et al. 1993	Cajon
SBR-38	38	SBR, Lake Dumont/Salt Creek	Surface deposit	Natural	DU-1097, Alluvium	Charcoal	30	30	1720	50	1523	1631	1739	Beta-104954	Anderson and Wells 2003b	GUNSIGHT
SBR-38	38	SBR, Lake Dumont/Salt Creek	Lacustrine	Natural	DU-1-1, Spring	Organic Sediment	660	660	14870	60	17859	18151	18529	Beta-093120	Anderson and Wells 2003b	GUNSIGHT
SBR-38	38	SBR, Lake Dumont/Salt Creek	Surface deposit	Natural	DU-3-Qal, Alluvium, from dark gray ashy layer over oxidized burn layer (possible hearth?)	Charcoal	60	60	9200	60	10237	10366	10514	Beta-094111	Anderson and Wells 2003b	GUNSIGHT
SBR-38	38	SBR, Lake Dumont/Salt Creek	Surface deposit	Natural	DU-5-Qal, Alluvium	Charcoal	60	60	2330	50	2299	2349	2491	Beta-093386	Anderson and Wells 2003b	GUNSIGHT
SBR-38	38	SBR, Lake Dumont/Salt Creek	Lacustrine	Natural	KCADC-1, Spring, dark organic-rich layer 1 km downstream from 9.3 ka section	Organic Sediment	300	300	5200	70	5875	5970	6182	Beta-119674	Anderson and Wells 2003b	GUNSIGHT
SBR-38	38	SBR, Salt Creek, Lake Dumont	Surface deposit	Natural	Core DU-2	Organic Sediment	60	80	18500	80	21816	22110	22339	11.9	Anderson and Wells 2003; Bright and Anderson 2007	GUNSIGHT
SBR-38	38	SBR, Salt Creek, Lake Dumont	Lacustrine	Natural	Core DU-2	Organic Sediment	1070	1090	27500	360	32013	32837	33661	12.0	Anderson and Wells 2003; Bright and Anderson 2007	GUNSIGHT
SBR-39	39	KER, China Lake	Lacustrine	Natural	Boring ID: TTIWV-SB10, southwest of Mirror lake	Organic sediment	8839	9144	18280	60	21356	21778	22078	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
SBR-40	40	SBR, Searles Lake	Lacustrine	Natural	Shell from sand layer 8 ft above valley floor, S of highway, 0.5 miles E of mouth of Salt Wells Canyon, coll by GI Smith	Shell-f (Anodonta)	0	1	29200	1000	32551	34593	36635	W-1575	Ives, Levin, and Meyer 1967 (RCJ)	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. B, deep lake phase same as lower Parting Mud unit	Organic sediment (marl)	nr	nr	16090	130	19006	19260	19477	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C1a	Organic sediment (marl)	nr	nr	12900	100	14929	15240	15619	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C1c	Organic sediment (marl)	nr	nr	13200	100	15228	15632	16075	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C2	Organic sediment (marl)	nr	nr	12300	100	13108	13305	13534	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C2, shell with sand	Shell-f (Anodonta?)	nr	nr	12100	100	12933	13136	13299	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C3a	Shell-f (Anodonta?)	nr	nr	12300	100	13108	13305	13534	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C3b	Organic sediment (marl)	nr	nr	12200	100	13799	14073	14509	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Strat. C3c	Organic sediment (marl)	nr	nr	11200	100	12919	13097	13257	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	Surface location, SL93-21	Organic sediment (marl)	nr	nr	13800	95	16036	16440	16869	ETH-?	Lin et al 1998	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	T-5 arroyo cutbank	Carbonate (CaC03)	15	30	9370	55	9450	9587	9784		Ramirez de Bryson 2004	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	T-5 arroyo cutbank	Carbonate (CaC03)	30	40	9530	56	9583	9810	10083		Ramirez de Bryson 2004	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	T-5 arroyo cutbank	Carbonate (CaC03)	40	80	11819	65	12832	12913	13055	?	Ramirez de Bryson 2004	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	T-5 arroyo cutbank	Carbonate (CaC03)	80	110	11194	59	11915	12165	12389		Ramirez de Bryson 2004	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	T-5 arroyo cutbank	Carbonate (CaC03)	126	130	12050	64	12943	13096	13226	?	Ramirez de Bryson 2004	Cajon
SBR-40	40	SBR, Searles, Poison Canyon	Lacustrine	Natural	T-5 arroyo cutbank	Carbonate (CaC03)	135	148	11876	63	12858	12955	13085	?	Ramirez de Bryson 2004	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	From spillway between China and Searles lakes, coll by R. Kaldenberg	Shell-f (Anodonta)	0	1	12410	260	12941	13436	13923	Beta-190570	Hildebrandt and Darcangelo 2004	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	From spillway between China and Searles lakes, coll by R. Kaldenberg	Shell-f (Anodonta)	0	1	12440	170	13135	13454	13783	Beta-190572	Hildebrandt and Darcangelo 2004	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	RLK # AMP-01, east end of Teagle Wash	Shell-f (Anodonta)	0	1	12450	90	13262	13447	13674	Beta-211384	Kaldenberg 2006; Rogers 2009	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	RLK # AMP-02, east end of Teagle Wash	Shell-f (Anodonta)	0	1	12480	60	13310	13475	13656	Beta-211385	Kaldenberg 2006; Rogers 2009	Cajon
SBR-41	41	SBR, Salt Wells Valley	Surface deposit	Cultural	RLK # AMP-03, east end of Teagle Wash	Shell (Haliotis)	0	1	560	60		0		Beta-211386	Kaldenberg 2006; Rogers 2009	Cajon

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	RLK # AMP-04, east end of Teagle Wash	Shell-f (Anodonta)	0	1	12030	100	12902	13075	13246	Beta-211387	Kaldenberg 2006; Rogers 2009	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	RLK # AMP-05, east end of Teagle Wash	Shell-f (Anodonta)	0	1	12440	70	13273	13429	13634	Beta-211388	Kaldenberg 2006; Rogers 2009	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	RLK # AMP-06, east end of Teagle Wash	Shell-f (Anodonta)	0	1	13800	70	15038	15282	15567	Beta-211389	Kaldenberg 2006; Rogers 2009	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Cultural	RLK # AMP-07, wood ash from under roasting pit, east end of Teagle Wash	Charcoal (wood)	0	1	350	40	313	399	495	Beta-211390	Kaldenberg 2006; Rogers 2009	Cajon
SBR-41	41	SBR, Salt Wells Valley	Lacustrine	Natural	SWV, from base of large tufa tower below east slope of Lone Butte	Organic sediment	0	1	13040	120	15038	15417	15862	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Cajon
SBR-42	42	SBR, Searles Lake	Lacustrine	Natural	Brown, nodular travertine	Carbonate	nr	nr	14156	84		14937		AA-62078	Numelin et al. 2007	Arizo
SBR-42	42	SBR, Searles Lake	Lacustrine	Natural	Carbonate-cemented angular alluvial gravels	Carbonate	nr	nr	13235	77		13752		AA-62076	Numelin et al. 2007	Arizo
SBR-42	42	SBR, Searles Lake	Lacustrine	Natural	Carbonated rind between rounded lacustrine cobbles	Carbonate	nr	nr	12235	74		12219		AA-62077	Numelin et al. 2007	Arizo
SBR-42	42	SBR, Searles Lake	Lacustrine	Natural	Pedogenic hardground with dense lower carbonate-cemented layer	Carbonate (mixed)	nr	nr	11852	71		11726		AA-61607	Numelin et al. 2007	ROCK OUTCROP (Tecopa)
SBR-43	43	SBR, Searles Lake	Lacustrine	Natural	Buff travertine with shell fragments	Carbonate (mixed)	nr	nr	11239	68	11029	11167	11305	AA-61608	Numelin et al. 2007	ROCK OUTCROP (Tecopa)
SBR-44	44	SBR, Searles Lake	Lacustrine	Natural	Base of overburden mud deposited after lake	Organic Sediment	670	690	12390	400	13441	14489	15572	W-0892	Rubin and Berthold 1961 (RCJ), Smith 1979	Playa
SBR-45	45	SBR, China Lake	Lacustrine	Natural	Surface location: TT43-SL01 in lower lake basin	Organic sediment	150	167	14060	50	16362	16758	17111	I-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
SBR-45	45	SBR, China Lake	Lacustrine	Natural	Surface location: TT43-SL01 in lower lake basin	Organic sediment	150	167	12825	170	14436	15131	15720	AA-0?	Couch Appendix B in Tetra Tech EM Inc. 2003	Playa
SBR-45	45	SBR-12390, China Lake	Lacustrine	Natural	Parcel 18, test unit	Shell-f (Anodonta)	10	20	13460	80	14306	14812	15147	Beta-220691	Byrd 2007	CALVISTA
SBR-45	45	SBR-12391, China Lake	Lacustrine	Natural	Parcel 16, test unit, snail shell	Shell-f (gastropod)	10	20	14390	70	16787	17257	17706	Beta-220692	Byrd 2007	Playa
SBR-46	46	SBR, Searles Lake	Lacustrine	Natural	Core GS-18-11, lowest portion of parting mud	Organic Sediment	2005	2027	22400	500	25731	26919	28107	RC/SM-1-8	Flint and Gale 1959; Bray and Burke 1960 (RCJ)	Playa
SBR-46	46	SBR, Searles Lake	Lacustrine	Natural	Core X-16, mud below top of upper salt	Organic Sediment	800	810	10270	450	10685	11953	13000	RC/SM-36	Flint and Gale 1959; Bray and Burke 1960 (RCJ); Smith 1979	Playa
SBR-46	46	SBR, Searles Lake	Lacustrine	Natural	Core X-16, mud seam below top of upper salt	Organic Sediment	1000	1014	11400	600	11751	13330	15008	RC/SM-50	Flint and Gale 1959; Bray and Burke 1960 (RCJ); Smith 1979	Playa
SBR-46	46	SBR, Searles Lake	Lacustrine	Natural	Core, middle of capping sands	Wood (unknown)	240	240	3520	190	3375	3821	4299	?	Stuiver 1964; Davis 1978; Smith 1979	Playa
SBR-47	47	SBR, Searles Lake	Lacustrine	Natural	Core X-16, lowest portion of parting mud	Organic Sediment	2612	2627	22800	700	25737	27373	29009	RC/SM-33	Flint and Gale 1959; Bray and Burke 1960 (RCJ)	Cajon
SBR-47	47	SBR, Searles Lake	Lacustrine	Natural	Core X-16, mud from below top of upper salt	Organic Sediment	801	807	22600	700	25487	27141	28795	RC/SM-35	Flint and Gale 1959; Bray and Burke 1960 (RCJ)	Cajon
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core 129, sub by W.A. Gale of American Potash and Chemical Co., Whittier, CA	Organic Sediment (mud)	2231	2261	10494	560	11596	12175	12899	C-0894	Libby 1954; Flint and Gale 1959	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core 129, sub by W.A. Gale of American Potash and Chemical Co., Whittier, CA	Organic Sediment (mud)	2322	2352	15089	1000	16841	18013	19241	C-0895	Libby 1954; Flint and Gale 1959	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core 129, sub by W.A. Gale of American Potash and Chemical Co., Whittier, CA	Organic Sediment (mud)	2429	2560	18000	730	20491	21372	22207	C-0896	Libby 1954; Flint and Gale 1959	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core 129, sub by W.A. Gale of American Potash and Chemical Co., Whittier, CA	Organic Sediment (mud)	2523	2554	23923	900	26516	28682	30848	C-0897	Libby 1954; Flint and Gale 1959	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core GS-27, from ~3 ft above base of Lower Salt	Wood (twig)			26700	1000	29754	31966	34178	W-0340	Flint and Gale 1959; Rubin and Alexander 1958	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core GS-27, lowest 1 ft. of Parting Mud, see C-897	Organic sediment	2523	2554	21200	2170	22970	23928	26000	Y-0267	Preston, Person, & Devey 1955	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Core X-20, lowest 0.8 ft of Bottom Mud, 10.3 ft below top of Bottom Mud	Organic sediment			46350	750	49952	51452	52952	GRO-1464	Flint and Gale 1959	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit B	Shell (fresh-mollusc)	0	1	18600	130	20530	20952	21392	USGS-2327(?)	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit C	Shell (fresh-mollusc)	0	1	11700	160	12544	12834	13115	Y-?	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit C	Carbonate (Oolites)	0	1	11730	350	11681	12755	13484	W-1327	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit C	Carbonate (Oolites)	0	1	11820	400	11697	12849	13726	W-1680	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit C	Carbonate (Oolites)	0	1	13200	200	13823	14399	15027	Y-?	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit C	Carbonate (Oolites)	0	1	13350	200	13979	14584	15201	Y-?	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Unit C	Shell (fresh-mollusc)	0	1	14210	200	15224	15846	16486	Y-?	Benson et al. 1990	Rosamond
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Well X-20 made by American Potash and Chemical Co.	Organic Sediment	2380	2426	10700	130	12351	12706	12921	Y-0574b	Deevey et al. 1959 (RCJ), Smith 1979	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Well X-20 made by American Potash and Chemical Co.	Organic Sediment	2494	2511	12730	210	14162	14948	15590	Y-0575b	Deevey et al. 1959 (RCJ), Smith 1979	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Well X-20 made by American Potash and Chemical Co.	Organic Sediment	2600	2627	16620	320	19117	19765	20389	Y-0576b	Deevey et al. 1959 (RCJ), Smith 1979	Playa
SBR-48	48	SBR, Searles Lake	Lacustrine	Natural	Well X-20 made by American Potash and Chemical Co.	Organic Sediment	2740	2760	24690	535	28181	29601	31021	Y-0577b	Deevey et al. 1959 (RCJ), Smith 1979	Playa
SBR-49	49	SBR, Death Valley, Harry Wade	Lacustrine	Natural	Core 2	Organic Sediment	1580	1580	19530	80	22812	23294	23684	Beta-097592	Anderson and Wells 2003a	CARRIZO
SBR-49	49	SBR, Death Valley, Harry Wade	Lacustrine	Natural	Core 2	Organic Sediment	1700	1700	19710	70	23302	23612	23885	Beta-093412	Anderson and Wells 2003a	CARRIZO
SBR-50	50	SBR, Ibex Pass, S.R. 127	Surface deposit	Natural	Packrat Midden, near State Route 127	Packrat Midden	0	1	4760	70	5434	5494	5604	Beta-089912	Koehler et al. 2005	Arizo
SBR-51	51	SBR, Amargosa River	Surface deposit	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	40	45	274	44	274	358	475	Beta-019240	Anderson 2005	BADLAND-BITTERWATER
SBR-51	51	SBR, Amargosa River	Buried alluvium	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	160	165	330	40	305	392	484	Beta-093064	Anderson 2005	BADLAND-BITTERWATER
SBR-51	51	SBR, Amargosa River	Buried alluvium	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	296	306	340	40	308	395	488	Beta-093063	Anderson 2005	BADLAND-BITTERWATER
SBR-51	51	SBR, Amargosa River	Surface deposit	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	66	74	400	70	307	437	532	Beta-072090	Anderson 2005	BADLAND-BITTERWATER
SBR-51	51	SBR, Amargosa River	Buried alluvium	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	365	375	1340	60	1167	1263	1359	Beta-070974	Anderson 2005	BADLAND-BITTERWATER

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SBR-51	51	SBR, Amargosa River	Buried alluvium	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	420	424	1375	45	1235	1298	1367	AA-25671	Anderson 2005	BADLAND-BITTERWATER
SBR-51	51	SBR, Amargosa River	Buried alluvium	Natural	T1 terrace cutbank, confluence of Amargosa River & China Ranch Wash, S of Inyo Co. line	Charcoal	345	355	2374	48	2325	2424	2520	AA-19239	Anderson 2005	BADLAND-BITTERWATER
SLO-01	1	SLO, Cuyama River	Surface deposit	Natural	A1, Qa2	Charcoal	370	380	754	30	665	689	728	AA-55381	DeLong and Arnold 2007	Stutzville
SLO-01	1	SLO, Cuyama River	Surface deposit	Natural	A1, Qa3	Charcoal	20	30	176	52	-3	170	300	AA-53626	DeLong and Arnold 2007	Stutzville
SLO-01	1	SLO, Cuyama River	Surface deposit	Natural	A1, Qa3	Charcoal	120	130	169	20	-2	178	291	AA-55845	DeLong and Arnold 2007	Stutzville
SLO-02	2	SLO, Cuyama River	Buried deposit	Natural	Burn layer (hearth?) in south bank of gully, north of river, south of S.R. 166	Charcoal	250	260	175	15	167	185	217	OS-71317	Meyer, Rosenthal, and Young (in progress)	Panoche
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	N10/W19.5, flotation sample from ground stone cluster	Nutshell (Prunus ilicifolia)	40	50	3500	50	3676	3773	3896	Beta-175779	Leach-Palm and Joslin 2003	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	N30/W10.5, flotation sample at NE-edge of site	Charcoal	30	50	450	90	305	479	565	Beta-178731	Leach-Palm and Joslin 2003	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	300	70	268	372	506	Beta-021667	Gerber pc in CRD	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	400	90	284	430	558	Beta-021670	Gerber pc in CRD	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	420	70	308	455	543	Beta-021669	Gerber pc in CRD	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	620	70	522	603	677	Beta-021666	Gerber pc in CRD	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	640	70	526	608	688	Beta-021671	Gerber pc in CRD	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	680	80	526	637	741	Beta-021668	Gerber pc in CRD	PLEASANTON
SLO-03	3	SLO-1180, Cuyama Valley	Surface deposit	Cultural	nr	nr	nr	nr	1410	90	1169	1325	1526	Beta-021672	Gerber pc in CRD	PLEASANTON
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 3, Strat. 630 into which channel was cut	Wood (unknown)	315	320	830	20	692	734	779	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	615	25	551	602	654	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	630	25	554	598	610	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	630	20	556	596	607	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	665	20	638	643	670	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Wood (unknown)	135	150	675	20	642	654	673	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	675	20	642	654	673	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	705	20	652	668	683	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-04	4	SLO, Van Matre Ranch, SAF	Buried soil	Natural	Trench 8, Strat. 860 into which channel was cut	Charcoal	135	150	795	20	681	709	734	UCI-Keck-?	Noriega et al. 2006	Padres
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	838	35	681	747	797	?	Sims 1994	Polonio
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	1003	20	907	930	962	?	Sims 1994	Polonio
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	1236	15	1121	1182	1260	?	Sims 1994	Polonio
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	1361	38	1236	1289	1343	?	Sims 1994	Polonio
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	3335	129	3322	3584	3904	?	Arrowsmith 1995	Polonio
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	3764	45	3981	4130	4256	?	Arrowsmith 1995	Polonio
SLO-05	5	SLO, Phelan Creeks, SAF	Buried channel	Natural	?	Charcoal	?	?	6778	62	7558	7629	7737	?	Arrowsmith 1995	Polonio
SLO-05	5	SLO, Phelan Ranch Fan, SAF	Buried deposit	Natural	Trench 2, Qpf (not shown)	Charcoal	nr	nr	13860	100	16096	16513	16939	AA-05575	Grant and Seih 1993	Polonio
SLO-05	5	SLO, Phelan Ranch Fan, SAF	Buried colluvium	Natural	Trench 3, colluvium (same sample with different correction)	Charcoal	40	45	370	60	307	414	510	AA-05072b	Grant and Seih 1993	Polonio
SLO-05	5	SLO, Phelan Ranch Fan, SAF	Buried colluvium	Natural	Trench 3, colluvium (same sample with different correction)	Charcoal	40	45	476	60	428	516	564	AA-05072a	Grant and Seih 1993	Polonio
SLO-05	5	SLO, Phelan Ranch Fan, SAF	Buried colluvium	Natural	Trench 3, debris flow deposit	Charcoal	15	20	139	32	59	140	281	AA-05073	Grant and Seih 1993	Polonio
SLO-05	5	SLO, Phelan Ranch Fan, SAF	Buried channel	Natural	Trench 3, gravel	Charcoal	35	40	535	40	507	548	564	AA-05074	Grant and Seih 1993	Polonio
SLO-05	5	SLO, Phelan Ranch Fan, SAF	Buried channel	Natural	Trench 4, fire scar/burned horizon	Charcoal	60	65	1016	19	919	938	962	UW-QL-4470	Grant and Seih 1993	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried alluvium	Natural	?	Charcoal	nr	nr	4480	270	4412	5112	5749	UW-0744	Sieh and Jahns 1984	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 1	Charcoal	?	?	170	40	124	173	295	U5-03	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 1	Charcoal	?	?	470	40	461	516	553	U7-24	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 1	Charcoal	?	?	530	40	506	545	563	U9-08	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 1	Charcoal	?	?	560	40	583	591	649	U10-01	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 1	Charcoal	?	?	2980	50	2999	3165	3273	Dn2-ne-10-03	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 2-b	Charcoal	?	?	330	40	305	392	484	Dn5-ne06-01	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 2-b	Charcoal	?	?	610	80	510	601	683	U3-02	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 2-b	Charcoal	?	?	760	40	656	696	743	U8-03	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 2-b	Charcoal	?	?	780	40	666	707	768	U-903	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 4	Charcoal	?	?	1760	50	1560	1672	1816	U7-31	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 4	Charcoal	?	?	1780	40	1601	1704	1820	U9-09	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 4	Charcoal	?	?	1855	45	1696	1790	1893	U5-04	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 5-g	Charcoal	?	?	1140	40	963	1045	1150	Dn-03	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 5-g	Charcoal	?	?	1310	40	1172	1245	1303	U8-07	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 6	Charcoal	?	?	200	50	59	181	234	U7-09	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 6	Charcoal	?	?	270	40	346	337	464	U8-01	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 7	Charcoal	?	?	2690	40	2747	2796	2861	U5-01	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 7	Charcoal	?	?	2760	40	2774	2853	2951	U4-01	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 7	Charcoal	?	?	2830	45	2843	2939	3075	U7-19	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 8	Charcoal	?	?	2490	30	2457	2580	2725	U7-20(1)	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 8	Charcoal	?	?	3010	50	3063	3212	3358	U7-20(2)	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 8	Charcoal	?	?	3380	40	3551	3623	3717	U7-22	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 9	Charcoal	?	?	2520	50	2454	2590	2748	U8-04	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 9	Charcoal	?	?	2580	50	2665	2704	2783	U4-03	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 9	Charcoal	?	?	3380	40	3551	3623	3717	U7-01	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 9	Charcoal	?	?	3380	40	3551	3623	3717	U8-05	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Channel 9	Charcoal	?	?	3600	40	3826	3908	3993	U7-10	Liu-Zeng et al. 2006	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Trench 11, Modern Channel	Charcoal	250	250	1035	235	621	970	1373	UW-0745	Sieh and Jahns 1984	Polonio

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
SLO-05	5	SLO, Wallace Creek, SAF	Buried soil	Natural	Trench 2, Younger Fan	Charcoal	245	255	13250	1650	13693	15721	17881	UW-0572	Sieh and Jahns 1984	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Trench 5, Older channel alluvium	Charcoal	60	70	3680	155	3615	4030	4437	UW-0563b	Sieh and Jahns 1984	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Trench 5, Older channel alluvium	Charcoal	110	120	4190	290	3967	4722	5474	UW-0565	Sieh and Jahns 1984	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried channel	Natural	Trench 5, Older channel alluvium	Charcoal	295	305	5845	225	6268	6680	7248	UW-0564	Sieh and Jahns 1984	Polonio
SLO-05	5	SLO, Wallace Creek, SAF	Buried soil	Natural	Trench 5, Older Fan	Charcoal	400	400	19430	1000	20721	23185	25595	UW-0567	Sieh and Jahns 1984	Polonio
TUL-01	1	TUL-877, Rockhouse Basin	Surface deposit	Cultural	N2/E2	Charcoal	20	30	495	165	257	500	771	I-13185	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-877, Rockhouse Basin	Surface deposit	Cultural	S38/W19	Charcoal	30	40	590	150	302	586	798	I-13186	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-877, Rockhouse Basin	Surface deposit	Cultural	S38/W19	Charcoal	40	50	765	170	488	729	1057	I-13187	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	N1/W3	Charcoal	30	40	250	75	250	293	493	I-13190	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	N1/W3	Charcoal	130	140	395	75	301	431	537	I-13191	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	N1/W3	Charcoal	140	150	570	75	504	590	669	I-13192	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	N6/W4	Charcoal	20	30	245	75	244	285	484	I-13188	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	N6/W4	Charcoal	100	110	1110	160	726	1035	1306	I-13189	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	RB3, N2W2	Charcoal	60	70	320	65	282	387	507	UGA-3840	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	RB3, N2W2	Charcoal	100	110	635	85	513	609	711	UGA-3838	Garfinkel et al.1984; CRD 1996	Chaix
TUL-01	1	TUL-879, Rockhouse Basin	Surface deposit	Cultural	RB3, N2W2	Charcoal	100	110	635	85	513	609	711	UGa-3841	McGuire 1981; Gold 2005	Chaix
TUL-02	2	FRE, Pixley	Surface deposit	Natural	CaCO3-silica Ccam horizon of Fresno (now Akers) soil, too young per Marchand (min. age)	Carbonate (calcium)	nr	nr	4600	100	5030	5293	5489	USGS-0062	Robinson 1977; Price 1982 (#114)	Akers
TUL-03	3	TUL-890A, Kennedy Meadows	Surface deposit	Cultural	RB12, N1E1	Charcoal	10	20	580	135	310	581	765	UGa-3842	McGuire 1981; Gold 2005	Xeric Haplargids
TUL-03	3	TUL-890B, Kennedy Meadows	Surface deposit	Cultural	N4W4	Charcoal	40	50	1280	90	1048	1195	1342	UGa-3843 (ok)	McGuire 1981; Gold 2005	Xeric Haplargids
TUL-03	3	TUL-891, Kennedy Meadows	Surface deposit	Cultural	RB13, Hearth Feature	Charcoal	10	20	225	80	58	222	340	UGa-3841b	McGuire 1981; Gold 2005	Chaix
TUL-04	4	TUL-898, Kennedy Meadows	Surface deposit	Cultural	N49/E7-8 (level 4)	Charcoal	30	40	820	80	659	755	920	I-13665	Bard et al.1985; CRD 1996; Gold 2005	Chaix
TUL-05	5	TUL, Tulare River	Buried soil	Natural	2ABkb, in N bank of Tulare River channel below Colpien soil as mapped	Soil (SOM)	280	290	7560	40	8315	8379	8427	Beta-255483	Meyer, Rosenthal, and Young (in progress)	Colpien
TUL-05	5	TUL, Tulare River	Buried soil	Natural	3ABkb, in N bank of Tulare River channel below Colpien soil	Soil (SOM)	330	350	7010	50	7722	7848	7946	OS-73065	Meyer, Rosenthal, and Young (in progress)	Colpien
TUL-06	6	TUL, Lloyds Meadow, Sequoia N.P.	Surface deposit	Natural	From granitic bedrock 4 m from nearest living bush	Wood (Manzanita)	0	1	520	100	424	543	672	UCR-0177	Taylor 1975 (RCJ)	Chawanakee 2
TUL-07	7	TUL, Monache Meadow	Buried meadow	Natural	Site 2, E of S-Fork Kings River, Sequoia N.P.	Organic Sediment	62	65	3350	110	3365	3597	3860	Beta-078725	Dull, Robert A. 1995 (MA thesis)	Rock outcrop
TUL-08	8	TUL, Dogwood Meadow	Surface deposit	Natural	Core #4	Organic Sediment (?)	85	99	1900	70	1693	1841	1997	Beta-034995	Anderson and Smith 1997	Dome
TUL-08	8	TUL, Dogwood Meadow	Buried meadow	Natural	Core #4	Organic Sediment (?)	155	160	4130	70	4514	4665	4837	Beta-034996	Anderson and Smith 1997	Dome
TUL-08	8	TUL, Dogwood Meadow	Buried meadow	Natural	Core #4	Organic Sediment (?)	175	180	9370	80	10291	10592	10786	Beta-062501	Anderson and Smith 1997	Dome
TUL-08	8	TUL, Dogwood Meadow	Buried meadow	Natural	Core #4	Organic Sediment (?)	221	220	9400	70	10412	10632	10793	Beta-031988	Anderson and Smith 1997	Dome
TUL-08	8	TUL, Kings Canyon, Sequoia N.P.	Surface plant	Natural	Centennial Stump at Enterprise Mill site	Wood (tree stump)	0	1	2710	130	2459	2836	3169	C-0159	RCJ	Dome
TUL-08	8	TUL-1052, Sunset Point	Buried soil	Cultural	Unit 5, east bank of Bear Creek, Mountain Home Demonstration State Forest	Charcoal	125	132	8130	60	8977	9081	9285	Beta-047034	Dillon 1992; Foster and Betts 2004?	Chaix
TUL-09	9	TUL, Circle Meadow	Buried meadow	Natural	Core #3	Organic Sediment (?)	65	81	1780	90	1517	1703	1902	Beta-043961	Anderson and Smith 1997	Rock outcrop
TUL-09	9	TUL, Circle Meadow	Buried meadow	Natural	Core #3	Organic Sediment (?)	117	122	4340	70	4816	4935	5074	Beta-042422	Anderson and Smith 1997	Rock outcrop
TUL-09	9	TUL, Circle Meadow	Buried meadow	Natural	Core #3	Organic Sediment (?)	170	175	8480	130	9090	9466	9773	Beta-042423	Anderson and Smith 1997	Rock outcrop
TUL-09	9	TUL, Circle Meadow	Buried meadow	Natural	Core #3	Organic Sediment (?)	269	279	10120	140	11243	11734	12187	Beta-031987	Anderson and Smith 1997	Rock outcrop
TUL-09	9	TUL, Circle Meadow	Buried meadow	Natural	Core #5	Organic Sediment (?)	89	84	200	70	-3	187	325	Beta-046004	Anderson and Smith 1997	Rock outcrop
TUL-10	10	TUL, Bear Den Cave	Surface deposit	Natural	Test pit A	Charcoal	35	40	6260	100	6940	7171	7418	Beta-188747	Mead et al. 2006	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	85	92	2410	80	2328	2489	2729	Beta-062505	Anderson and Smith 1997	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	198	206	4690	140	5026	5396	5664	Beta-062506	Anderson and Smith 1997	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	393	401	9530	80	10646	10873	11141	Beta-027597	Anderson and Smith 1997	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Core #3	Organic Sediment (?)	54	60	370	70	298	411	521	Beta-042421	Anderson and Smith 1997	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Sediment core	Organic Sediment (?)	240	248	2690	80	2698	2813	3001	Beta-025934	Anderson 1994	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Sediment core	Organic Sediment (?)	355	392	4190	90	4509	4708	4888	Beta-025935	Anderson 1994	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Sediment core	Organic Sediment (?)	707	715	9010	120	9734	10121	10435	Beta-025936	Anderson 1994	Rock outcrop
TUL-11	11	TUL, Log Meadow	Buried meadow	Natural	Sediment core	Organic Sediment (?)	945	955	10210	180	11267	11912	12407	Beta-022449	Anderson 1994	Rock outcrop
TUL-12	12	FRE, Redwood Canyon	Surface deposit	Natural	Cave, C-Lil-1	Wood (root)	nr	nr	1350	90	1056	1263	1415	UM-2124	Crabtree et al.1981 (RCJ)	CHAWANAKEE
TUL-12	12	FRE, Redwood Canyon	Surface deposit	Natural	Cave, C-Lil-2	Charcoal	nr	nr	1670	90	1384	1578	1744	UM-2125	Crabtree et al.1981 (RCJ)	CHAWANAKEE
TUL-12	12	FRE, Redwood Canyon	Surface deposit	Natural	Cave, C-Lil-3	Charcoal	nr	nr	1020	90	735	934	1095	UM-2126	Crabtree et al.1981 (RCJ)	CHAWANAKEE
TUL-12	12	FRE, Redwood Canyon	Surface deposit	Natural	Cave, C-Lil-4	Charcoal (or wood?)	nr	nr	1350	90	1056	1263	1415	UM-2127	Crabtree et al.1981 (RCJ)	CHAWANAKEE
TUL-13	13	TUL, Weston Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	55	60	1080	80	891	1004	1178	Beta-029030	Anderson and Smith 1997	Dome
TUL-13	13	TUL, Weston Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	95	100	2130	60	1986	2118	2313	Beta-062507	Anderson and Smith 1997	Dome
TUL-13	13	TUL, Weston Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	134	144	5430	90	5996	6216	6398	Beta-029031	Anderson and Smith 1997	Dome
TUL-13	13	TUL, Weston Meadow	Buried meadow	Natural	Core #2	Organic Sediment (?)	247	256	10360	70	11977	12231	12405	Beta-027602	Anderson and Smith 1997	Dome
TUL-14	14	TUL, Boggy Meadow	Buried soil	Natural	7 cm stump rooted in basal paleosol buried in meadow; Kings Canyon N.P.	Wood (tree stump)	610	610	8705	95	9526	9716	9952	UGa-0620	Wood 1975	GERLE
TUL-14	14	TUL, Boggy Meadow	Buried soil	Natural	Boggy Mdw., Kings Canyon N.P.	Charcoal	670	670	10185	105	11392	11857	12240	UGa-0623	Wood 1975	GERLE
TUO-01	1	TUO, Yosemite, East Meadow	Buried soil	Natural	East Meadow, Yosemite N.P.	Wood (fir)	250	250	2830	65	2782	2947	3083	UGa-0448	Wood 1975	GERLE
TUO-01	1	TUO, Yosemite, East Meadow	Buried soil	Natural	From O of O/A/C profile on granitic bedrock	Charcoal	700	710	9020	270	9488	10138	10794	UGa-0447	Wood 1975	GERLE
TUO-01	1	TUO, Yosemite, East Meadow	Buried soil	Natural	In situ stump rooted in UGa-447 paleosol	Wood (pine stump)	580	590	9480	90	10514	10777	11107	UGa-0452	Wood 1975	GERLE
TUO-01	1	TUO, Yosemite, East Meadow	Surface deposit	Natural	With ash layer in gully 1.5 m E of Aspen Valley	Charcoal	30	30	1545	90	1293	1448	1618	I-06049	Wood 1975	
TUO-02	2	TUO-0166, Tuolumne Mdws	Surface deposit	Cultural	EU 11	Charcoal	16	16	1830	170	1370	1764	2152	Beta-077975	Hull et al. 1995	
TUO-02	2	TUO-0166, Tuolumne Mdws	Surface deposit	Cultural	EU 11	Charcoal	28	28	2200	80	2003	2205	2346	Beta-077976	Hull et al. 1995	
TUO-02	2	TUO-0166, Tuolumne Mdws	Surface deposit	Cultural	EU 3	Charcoal	20	20	1210	90	961	1133	1291	Beta-077974	Hull et al. 1995	
TUO-03	3	TUO-2833, Dana Meadows	Surface deposit	Cultural	EU 1, on moraine	Charcoal	16	16	2660	160	2349	2766	3161	Beta-067237	Montague 1994 (a)	
TUO-03	3	TUO-2833, Dana Meadows	Surface deposit	Cultural	EU 2, on moraine	Charcoal	24	24	1880	80	1614	1817	1994	Beta-067238	Montague 1994 (a)	
TUO-03	3	TUO-2834, Dana Meadows	Buried deposit	Cultural	EU 1, on moraine	Charcoal	32	32	2220	90	1987	2217	2367	Beta-067239	Montague 1994 (a)	
TUO-03	3	TUO-2834, Dana Meadows	Buried deposit	Cultural	EU 2, on moraine	Charcoal	33	33	2250	90	1996	2240	2487	Beta-067242	Montague 1994 (a)	

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
TUO-03	3	TUO-2834, Dana Meadows	Buried deposit	Cultural	EU 2, on moraine	Charcoal	25	25	2410	70	2339	2483	2623	Beta-067241	Montague 1994 (a)	
TUO-03	3	TUO-2834, Dana Meadows	Buried deposit	Cultural	EU 4, on moraine	Charcoal	25	25	4600	80	5039	5304	5483	Beta-067240	Montague 1994 (a)	
TUO-04	4	TUO-0001, New Melones	Surface deposit	Cultural	M-102-W	Charcoal	60	60	580	80	501	592	676	I-09041	Moratto 1985 in Breshini et al. 1996	
TUO-04	4	TUO-0001, New Melones	Surface deposit	Cultural	M-104-W	Charcoal	50	60	465	80	417	500	565	I-09043	Moratto 1985 in Breshini et al. 1996	
TUO-05	5	TUO, ESB I, Curtis Creek	Buried soil	Natural	Cutbank south of Standard Road, 2Ab	Soil (SOM)	100	120	1630	90	1320	1530	1720	Beta-169300	Meyer and Dalldorf 2004	
TUO-05	5	TUO, ESB I, Curtis Creek	Buried soil	Natural	Cutbank south of Standard Road, 4Ab	Soil (SOM)	240	260	2900	90	2790	3000	3330	Beta-169301	Meyer and Dalldorf 2004	
TUO-05	5	TUO, ESB I, Curtis Creek	Buried soil	Natural	Cutbank south of Standard Road, 6Ab	Soil (SOM)	385	395	4480	80	4860	5190	5320	Beta-169302	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESB I, Bergel Road	Buried alluvium	Natural	Bergel, Tr. 10-9-7, Strat. I, 3Cox	Charcoal	175	180	250	80	60	300	495	Beta-149147	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESB I, Bergel Road	Buried soil	Natural	Bergel, Tr. 10-9-7, Strat. II, 2Ab	Charcoal	70	75	220	60	245	290	330	Beta-149148	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESB I, Bergel Road	Surface deposit	Natural	Bergel, Tr. 10-9-7, Strat. III, A	Charcoal	30	40	40	80	0	40	120	Beta-149149	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESB I, Phoenix Lake Rd	Buried soil	Natural	Phoenix Tr. 10-10-6, Strat. I, 2Btb	Soil (SOM)	85	110	3160	50	3310	3380	3470	Beta-149151	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESB I, Phoenix Lake Rd	Buried alluvium	Natural	Phoenix Tr. 10-13-2, Strat. IV, 3Cu	Charcoal	80	85	160	70	0	145	315	Beta-149150	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESBI, Calvalieri Road	Buried soil	Natural	Cavalieri Tr. 9, Strat. II, 2ABtb	Soil (SOM)	65	80	1900	40	1730	1860	1920	Beta-157607	Meyer and Dalldorf 2004	
TUO-06	6	TUO, ESBI, Calvalieri Road	Surface deposit	Natural	Cavalieri Tr. 9, Strat. III, Bt	Soil (SOM)	30	45	1220	70	970	1160	1280	Beta-157608	Meyer and Dalldorf 2004	
TUO-06	6	TUO-0407, Sullivan Creek	Surface deposit	Cultural	Feat. 06: N103/E96-97andN104/E96-98, Stratum A4	Soil (SOM)	18	24	980	60	740	875	1046	Beta-019814	Van Bueren et al. 1987	
TUO-06	6	TUO-0407, Sullivan Creek	Surface deposit	Cultural	N100/E100, Strat. A3	Soil (SOM)	60	70	680	70	543	631	728	Beta-018855	Van Bueren et al. 1987	
TUO-06	6	TUO-0407, Sullivan Creek	Surface deposit	Cultural	N104/E97, Strat A4, above Feat. 06	Charcoal	19	19	320	110	0	365	540	Beta-020422	Van Bueren et al. 1987	
TUO-06	6	TUO-2194, Hartman Site	Surface deposit	Cultural	Cat. #2097	Charcoal	?	?	130	40	70	150	230	Beta-207137	Rosenthal 2006	
TUO-06	6	TUO-2642, Kelley	Surface deposit	Cultural	Unit 05	Charcoal (acorn kernal)	100	110	130	70	5	160	285	Beta-181900	Rosenthal 2006	
TUO-06	6	TUO-2642, Kelley	Surface deposit	Cultural	Unit 05	Charcoal (gray pine)	60	70	580	70	665	550	505	Beta-181899	Rosenthal 2006	
TUO-06	6	TUO-2643, Costa	Buried soil	Cultural	CU-1, Strat. II, 2Ab	Bone (bear rib)	60	70	1570	40	1360	1470	1540	Beta-209549	Meyer et al. 2006	
TUO-06	6	TUO-2643, Costa	Buried soil	Cultural	CU-4, Feature 01, Strat A, flot #215	Charcoal (acorn)	70	78	220	40	265	290	315	Beta-182067	Meyer et al. 2006	
TUO-06	6	TUO-2643, Costa	Buried soil	Cultural	CU-4, Feature 01, Strat B, flot #485	Charcoal (gray pine)	30	70	910	90	670	795	970	Beta-182066	Meyer et al. 2006	
TUO-06	6	TUO-2643, Costa	Buried soil	Cultural	CU-4, Feature 01, Strat. A, flot #251	Charcoal (wood)	70	78	110	60	0	110	170	Beta-182065	Meyer et al. 2006	
TUO-06	6	TUO-2643, Costa	Surface deposit	Natural	Phoenix Tr. 10-11-1, Strat. II, Bt	Soil (SOM)	60	80	1410	70	1230	1300	1420	Beta-149152	Meyer et al. 2006	
TUO-06	6	TUO-2643, Costa	Buried soil	Natural	Phoenix Tr. 10-11-1, Strat., 2Ab	Soil (SOM)	150	170	1740	90	1420	1660	1870	Beta-149146	Meyer et al. 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N0/W10, Flot 1, Feature 01	Charcoal	50	60	350	30	490	373	310	Beta-183234	Rosenthal 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N4/E0, Flot 12	Charcoal (acorn nutshell)	30	50	1490	40	1300	1360	1480	Beta-185283	Rosenthal 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N4/E0, Flot 12	Charcoal (gray pine)	30	50	5290	40	6190	6010	5940	Beta-183235	Rosenthal 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N5.5/W10, Flot 20	Charcoal (gray pine)	20	56	1730	40	1720	1620	1540	Beta-183238	Rosenthal 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N5/E4, Flot. 13	Charcoal	20	36	270	30	430	300	290	Beta-183236	Rosenthal 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N6/W1, Flot 19	Charcoal (acorn nutshell)	40	50	2490	40	2370	2600	2730	Beta-185284	Rosenthal 2006	
TUO-06	6	TUO-4513, Hess House	Buried soil	Cultural	N6/W1, Flot 19	Charcoal (gray pine)	40	50	4830	40	5620	5590	5480	Beta-183237	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Natural	N0/E39, Strat I	Soil (SOM)	60	70	3980	70	4780	4430	4240	Beta-173000	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S10/E26, Strat II	Charcoal	30	40	930	40	935	855	745	Beta-181901	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S18/E26-27, Feature 03, Strat II	Charcoal	28	50	2510	40	2745	2720	2450	Beta-181903	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S27/E27, Feature 01, Strat II	Charcoal	45	55	2440	50	2730	2465	2345	Beta-181902	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S28.25/E32	Charcoal	65	70	710	50	710	660	560	Beta-173003	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Surface deposit	Natural	S28.25/E33, strat III	Charcoal	29	29	730	50	730	670	570	Beta-173005	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S6.75/E29, Strat II	Charcoal	27	50	1120	40	1140	1023	950	Beta-183240	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S7.75/E27, Strat I	Charcoal	70	90	2980	40	3310	3165	3005	Beta-181904	Rosenthal 2006	
TUO-06	6	TUO-4514, Lower Chipper	Buried soil	Cultural	S7.75/E29, Strat II	Charcoal	30	40	1670	40	1690	1550	1510	Beta-183239	Rosenthal 2006	
TUO-06	6	TUO-4514, Upper Chipper	Buried soil	Cultural	N135/E16, Strat I	Charcoal	55	55	530	40	630	540	510	Beta-173007	Rosenthal 2006	
TUO-06	6	TUO-4514, Upper Chipper	Surface deposit	Cultural	N135/E21, Strat III	Charcoal	20	20	690	70	730	660	540	Beta-173004	Rosenthal 2006	
TUO-06	6	TUO-4514, Upper Chipper	Buried soil	Cultural	N145/E10, Strat I	Charcoal	138	138	2220	40	2340	2243	2130	Beta-173006	Rosenthal 2006	
TUO-06	6	TUO-4514, Upper Chipper	Buried soil	Natural	T5-7-2, Strat I	Soil (SOM)	66	74	2570	70	2780	2740	2380	Beta-173002	Rosenthal 2006	
TUO-06	6	TUO-4514, Upper Chipper	Buried soil	Natural	T5-7-2, Strat II	Soil (SOM)	42	50	1240	70	1290	1170	980	Beta-173001	Rosenthal 2006	
TUO-06	6	TUO-4559, Edgemont, Apple	Surface deposit	Cultural	CU-7, column sample, flot #214	Charcoal (wood)	50	70	1210	40	1050	1155	1250	Beta-182064	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Surface deposit	Natural	CU-2 column, flot #12	Charcoal (wood/bark)	20	30	710	40	640	660	690	Beta-180148	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Natural	CU-2, Feat. 04, column sample, upper fill	Soil (SOM)	40	60	3950	60	4235	4415	4535	Beta-182075	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	CU-8, column/flot heavy-fraction, Strat. II, 2Ab	Charcoal (gray pine)	70	80	4540	40	5050	5290	5320	Beta-209550	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Surface deposit	Cultural	CU-9, flot #217, cap deposit	Charcoal (wood)	20	30	310	60	280	400	500	Beta-182074	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Feature 01, field screent. #3476	Charcoal (gray pine)	17	36	1760	40	1560	1695	1795	Beta-182068	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Natural	Feature 04, Strata A, lower fill	Soil (SOM)	207	240	4940	70	5585	5650	5770	Beta-182076	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Feature 04, Tier 2, Strat. A	Charcoal	120	120	4150	40	4540	4760	4830	Beta-178692	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Feature 04, Tier 3, Strat. A	Charcoal	165	165	4110	90	4410	4580	4850	Beta-178693	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Feature 05, Strata Y, pre-collapse fill	Charcoal (bark, wood)	175	200	4360	40	4845	4875	5040	Beta-182072	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Feature 08, beneath Artifacts I, N, R, S	Charcoal (gray pine)	35	53	1220	40	1055	1165	1260	Beta-182073	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Feature 08, under Art. OO	Charcoal	88	88	4120	40	4520	4780	4820	Beta-178691	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-1, Feature 07, housefloor, flot #236	Charcoal (gray pine)	90	100	5740	40	6430	6510	6650	Beta-182071	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-1, Feature 07c, flot #37	Charcoal (gray pine)	40	50	4040	40	4420	4520	4595	Beta-182070	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-1, Feature 07c, flot #52	Charcoal (gray pine)	270	280	4470	40	4960	5050	5300	Beta-178696	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-1, Feature 07c, flot #55	Charcoal (gray pine)	300	310	4620	40	5290	5320	5340	Beta-178697	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-2, Feature 07b, flot #64	Charcoal (acorn nutshell)	185	205	4150	40	4540	4760	4830	Beta-206505	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-2, Feature 07b, flot #65t. #4787	Charcoal (gray pine)	225	245	4280	40	4820	4840	4870	Beta-182069	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-2, Feature 07b, flot #65t. #4787	Charcoal (acorn nutshell)	225	245	4320	40	4830	4860	4970	Beta-206506	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-3, Feat. 07d/bisect, flot#68	Charcoal (gray pine)	100	110	5470	40	6190	6280	6310	Beta-180150	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	HEU-3, Feat. 07d/bisect, flot#68	Charcoal (acorn nutshell)	100	110	7820	40	8510	8600	8650	Beta-206507	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	NW1/4, Tier 3, Feat. 02, flot #106	Charcoal (gray pine)	120	200	4050	40	4420	4520	4620	Beta-180151	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Tier 4, Feature 06, flot #103	Charcoal (gray pine)	240	280	4420	40	4860	4980	5070	Beta-178698	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Trench 1, west wall, HEU-1, Feature 07b	Charcoal	200	220	4490	40	4970	5180	5300	Beta-167779	Meyer et al. 2006	

Map ID (Figure 13)	Local No.	County, Area or Site Number	Deposit	Type	Location, Provenience, and/or Description	Material	Min. Depth cm	Max. Depth cm	14C BP	±	Min. Cal BP	Cal BP (med. prob.)	Max. Cal BP	Lab or Sample No.	Source Reference	Surface Soil Series (STATSGO and SSURGO)
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Trench 3, east wall, flot #239	Charcoal (wood)	40	60	4060	40	4430	4530	4630	Beta-180149	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Trench 3, Feature 010, flot #80	Charcoal (gray pine)	70	110	4870	40	5580	5600	5660	Beta-178694	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Trench 3, Feature 010, flot #80	Charcoal (acorn nutshell)	70	110	5230	40	5920	5970	6020	Beta-206508	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Cultural	Trench 3, Feature 011, flot #91	Charcoal (gray pine)	74	110	4700	40	5320	5370	5490	Beta-178695	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Natural	Trench 3, west wall, above EU-15	Charcoal	95	115	440	40	450	510	530	Beta-167355	Meyer et al. 2006	
TUO-06	6	TUO-4559, Edgemont, Knoll	Buried soil	Natural	Trench 3, west wall, above EU-15	Soil (SOM)	95	115	4660	70	5290	5410	5480	Beta-167354	Meyer et al. 2006	
TUO-07	7	TUO, ESB II, Area 10	Buried soil	Natural	Area 10, Trench 5, Strat I, 3Btb	Soil (SOM)	220	250	8450	150	9120	9500	9760	Beta-183850	Meyer and Dalldorf 2004	
TUO-07	7	TUO, ESB II, Area 12	Surface deposit	Natural	Area 12, Trench 1, Strat III, AB	Soil (SOM)	100	120	4010	100	4220	4480	4830	Beta-183851	Meyer and Dalldorf 2004	
TUO-07	7	TUO, ESB II, Area 12	Buried soil	Natural	Area 12, Trench A12-1, Strat. I, 2ABtb	Soil (SOM)	160	180	6000	40	6735	6795	6915	Beta-181373	Meyer and Dalldorf 2004	
TUO-07	7	TUO, ESB II, Area 12	Buried soil	Natural	Area 12, Trench A12-2, Strat. I, 2Btb	Soil (SOM)	100	120	4470	40	4960	5055	5295	Beta-181374	Meyer and Dalldorf 2004	
TUO-07	7	TUO, ESB II, Area 2	Buried soil	Natural	Area 2, Trench 9N, Strat I, 2Btb	Soil (SOM)	130	170	4090	40	4500	4560	4710	Beta-183848	Meyer and Dalldorf 2004	
TUO-07	7	TUO, ESB II, Area 9	Buried soil	Natural	Area 9, Trench 1, Strat I, 2Ab	Soil (SOM)	55	95	2390	60	2330	2360	2720	Beta-183846	Meyer and Dalldorf 2004	
TUO-07	7	TUO, ESB II, Area 9	Buried soil	Natural	Area 9, Trench 1, Strat I, 3AB	Soil (SOM)	140	215	4040	40	4420	4520	4600	Beta-183845	Meyer and Dalldorf 2004	
TUO-07	7	TUO-2192, Sturgis Site	Buried soil	Natural	Area 11, Trench A11-8, Strat. I, 2ABtb	Soil (SOM)	150	190	6890	40	7655	7695	7785	Beta-181372	Meyer and Dalldorf 2004	
TUO-07	7	TUO-2197, JD Site	Surface deposit	Cultural	Cat. #866	Charcoal	?	?	130	40	54	132	280	Beta-207138	Rosenthal 2006	
TUO-07	7	TUO-2197, JD Site	Surface deposit	Cultural	Unit 03, Feature 02, Strat II	Charcoal	50	50	3750	80	3900	4118	4300	Beta-036429	Waugh and Rondeau 1990	
TUO-07	7	TUO-2197, JD Site	Surface deposit	Cultural	Unit 04, Feature 03, Strat I	Charcoal	30	30	270	50	269	340	479	Beta-036430	Waugh and Rondeau 1990	
TUO-07	7	TUO-2197, JD Site	Surface deposit	Cultural	Unit 05, Feature 03, Strat I	Charcoal	35	35	270	70	256	329	501	Beta-036428	Waugh and Rondeau 1990	
TUO-07	7	TUO-4627/H, Jenness Site	Buried soil	Natural	Area 4, Trench 21, 16.3m E, Strat IV, 4ABtb	Soil (SOM)	124	151	4410	100	4830	4970	5310	Beta-183844	Meyer and Dalldorf 2004	
TUO-07	7	TUO-4627/H, Jenness Site	Buried soil	Natural	Area 4, Trench 21, 16.3m E, Strat V, 3Btb	Soil (SOM)	56	83	1510	60	1300	1390	1530	Beta-183842	Meyer and Dalldorf 2004	
TUO-07	7	TUO-4627/H, Jenness Site	Buried soil	Natural	Area 4, Trench 21, 7.25m E, Strat II, 6ABtb	Soil (SOM)	93	111	6670	40	7470	7570	7600	Beta-183843	Meyer and Dalldorf 2004	
TUO-07	7	TUO-4627/H, Jenness Site	Buried soil	Natural	Area 4, Trench A4-21, 3.25m E, Strat I, 7Btb	Soil (SOM)	105	125	4250	80	4560	4840	4970	Beta-183849	Meyer and Dalldorf 2004	
TUO-07	7	TUO-4627/H, Jenness Site	Buried soil	Natural	Area 4, Trench A4-3, Strat. I, 2ABtb	Soil (SOM)	125	140	6210	40	6995	7170	7240	Beta-181371	Meyer and Dalldorf 2004	
TUO-08	8	TUO-1289, Sapps Meadow	Surface deposit	Cultural	13N 6W	Charcoal	40	50	1110	80	906	1034	1188	Beta-018162	Peak and Neuenschwander 1991	
TUO-08	8	TUO-1289, Sapps Meadow	Surface deposit	Cultural	14N 6/7W	Charcoal	60	70	900	80	682	822	937	Beta-018163	Peak and Neuenschwander 1991	
TUO-09	9	KER- site?	?	?	Dated about 1978-79 based on lab no's.; Info. obtained by Haversat from UC Riverside master date lists (CRD 1996)	Charcoal	nr	nr	1200	100	937	1123	1291	UCR-0873	CRD 1996	Holland
TUO-09	9	KER- site?	?	?	Dated about 1978-79 based on lab no's.; Info. obtained by Haversat from UC Riverside master date lists (CRD 1996)	Charcoal	nr	nr	2500	100	2347	2566	2760	UCR-0871	CRD 1996	Holland
TUO-09	9	KER- site?	?	?	Dated about 1978-79 based on lab no's.; Info. obtained by Haversat from UC Riverside master date lists (CRD 1996)	Charcoal	nr	nr	8990	440	8997	10137	11317	UCR-0872	CRD 1996	Holland
TUO-09	9	KER-0505, Edwards AFB	Surface deposit	Cultural	Info. from UC Riverside master date lists obtained by Haversat per CRD 1996	Charcoal	10	20	100	10	88	119	256	UCR-0532	Sutton and Robinson 1977; Norwood in Robinson 1987; CRD 1996	Leuhman
TUO-09	9	KER-0505, Edwards AFB	Surface deposit	Cultural	Info. from UC Riverside master date lists obtained by Haversat per CRD 1996	Charcoal	10	10	100	10	88	119	256	UCR-0533	Sutton and Robinson 1977; Norwood in Robinson 1987; CRD 1996	Leuhman
TUO-09	9	KER-0505, Edwards AFB	Surface deposit	Cultural	Info. from UC Riverside master date lists obtained by Haversat per CRD 1996	Charcoal	40	50	210	110	-4	217	342	UCR-0531	Sutton and Robinson 1977; Norwood in Robinson 1987; CRD 1996	Leuhman
TUO-10	10	TUO-0935, Phoenix Hydro.	Surface deposit	Natural	N200/E184	Charcoal	60	60	600	70	518	599	670	Beta-023037	Davis-King and Goldberg 1988	
TUO-10	10	TUO-0935, Phoenix Hydro.	Surface deposit	Natural	Near bedrock in Unit N200/184E	Soil (SOM)	87	90	2200	80	2003	2205	2346	Beta-023038	Davis-King and Goldberg 1988	
TUO-10	10	TUO-0935, Phoenix Hydro.	Surface deposit	Natural	Unit 02 below metate/above bedrock	Soil (SOM)	70	80	1250	70	1051	1178	1297	Beta-023566	Davis-King and Goldberg 1988	
TUO-11	11	TUO-2111, Phoenix Hydro.	Surface deposit	Natural	Near bedrock in Unit 02, post-BRM?	Soil (SOM)	28	30	1150	80	930	1076	1190	Beta-023568	Davis-King and Goldberg 1988	
	23	INY-0272, Death Valley	Surface deposit	Cultural	Shelter A, primarily Scirpus grass	Plant (grass)	70	70	180	60	55	172	307	?	Yohe and Valdez 1996 in Albion 2005	(no location)
	49	KER, Beacon Solar/Cantil	Buried soil	Natural	Pine Tree Wash, Stratum 2	Soil (SOM)	150	150	12730	70	14720	15029	15294	Beta-254726	Young 2009	(D. Craig has location?)
		MNO, Inyo Craters, Mammoth Mountain	Surface volcanic	Natural	Phreatic explosion on north side of mountain	Charcoal	-	-	500	200	240	495	793	?	Wood 1977b; Kilbourne and Anderson 1981	Vitrandic Xeropsamments 2
		MNO, Mono Craters, Panum Crater	Surface deposit	Natural	Moderate to large Plinean ash eruption and dome	Charcoal	-	-	1175	65	962	1101	1191	?	Wood and Brooks 1979; Kilbourne and Anderson 1981	Rock outcrop-Rubble land
		MNO, Mono Craters, Panum Crater	Surface deposit	Natural	Moderate to large Plinean ash eruption and dome	Charcoal	-	-	1210	65	1047	1137	1278	?	Wood and Brooks 1979; Kilbourne and Anderson 1981	Rock outcrop-Rubble land
		MNO, Mono Craters, Panum Crater	Surface deposit	Natural	Pumice tephra explosion and dome formation	Charcoal	-	-	680	40	625	644	687	?	Wood and Brooks 1979; Kilbourne and Anderson 1981	Rock outcrop-Rubble land
		MNO, Mono Craters, South Coulee	Buried deposit	Natural	Charred log from roadcut N of Benton Rd/Hwy 120; dates pumice tephra eruption	Charcoal	60	70	1185	80	959	1112	1277	W-3661	Wood 1983	Rock outcrop-Rubble land
		MNO, Mono Craters, South Coulee	Surface deposit	Natural	South Coulee pumice tephra eruption; approx. loc.	Charcoal	-	-	1695	60	1478	1606	1734	?	Wood 1977b; Kilbourne and Anderson 1981	Rock outcrop-Rubble land

APPENDIX C

SOIL TYPES, AGE ASSIGNMENTS, AND DEFINITIONS FOR SOIL HORIZONS AND LAYERS

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Abgese	SSURGO	Abgese-Berent-Toeja families association, 30 to 70 percent slopes	1													1
		Risue-Abgese-Preston families association, 2 to 15 percent slopes	1													1
		Tweedy-Abgese families association, 1 to 15 percent slopes	1													1
Abgese family 2	SSURGO	Rock outcrop-Abgese-Pass Canyon families complex, 30 to 60 percent slopes	1													1
		Rock outcrop-Abgese-Pass Canyon families complex, 60 to 90 percent slopes	1													1
Academy	SSURGO	Academy loam, 0 to 3 percent slopes		1												1
		Academy loam, 3 to 9 percent slopes		1												1
Adelanto	SSURGO	Adelanto coarse sandy loam, 2 to 5 percent slopes		1												1
		Adelanto loamy sand, 2 to 5 percent slopes		1												1
Agnal	SSURGO	Agnal silty clay, 0 to 1 percent slopes								1						1
Agua Dulce family	SSURGO	Agua Dulce-Los Robles-Modjeska families association, 10 to 60 percent slopes											1			1
Ahwahnee	SSURGO	Ahwahnee and Auberry coarse sandy loams, 15 to 30 percent slope	1													1
		Ahwahnee and Auberry coarse sandy loams, 8 to 15 percent slopes	1													1
		Ahwahnee and Auberry rocky coarse sandy loams, 3 to 8 percent slopes	1													1
		Ahwahnee and Auberry rocky coarse sandy loams, 30 to 45 percent slopes	1													1
		Ahwahnee and Auberry rocky coarse sandy loams, 8 to 30 percent slopes	1													1
		Ahwahnee and auberry very rocky coarse sandy loams, 15 to 30 percent slopes	1													1
		Ahwahnee and auberry very rocky coarse sandy loams, 30 to 75 percent slopes	1													1
		Ahwahnee and Vista coarse sandy loams, 15 to 30 percent slopes	1													1
		Ahwahnee and Vista coarse sandy loams, 3 to 8 percent slopes	1													1
		Ahwahnee and Vista coarse sandy loams, 8 to 15 percent slopes	1													1
		Ahwahnee and Vista rocky coarse sandy loams, 3 to 8 percent slopes	1													1
		Ahwahnee and Vista rocky coarse sandy loams, 30 to 45 percent slopes	1													1
		Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes	1													1
		Ahwahnee and Vista very rocky coarse sandy loams, 15 to 30 percent slopes	1													1
		Ahwahnee and Vista very rocky coarse sandy loams, 30 to 75 percent slopes	1													1
		Ahwahnee coarse sandy loam, 15 to 30 percent slopes	1													1
		Ahwahnee coarse sandy loam, 3 to 9 percent slopes	1													1
		Ahwahnee coarse sandy loam, 30 to 45 percent slopes	1													1
		Ahwahnee coarse sandy loam, 9 to 15 percent slopes	1													1
		Ahwahnee very rocky coarse sandy loam, 3 to 30 percent slopes	1													1
		Ahwahnee very rocky coarse sandy loam, 30 to 45 percent slopes	1													1
		Ahwahnee very rocky coarse sandy loam, 45 to 70 percent slopes	1													1
		Ahwahnee very rocky coarse sandy loam, shallow, 3 to 30 percent slopes	1													1
		Ahwahnee very rocky coarse sandy loam, shallow, 30 to 70 percent slopes	1													1
		Ahwahnee-Sierra coarse sandy loams, 15 to 30 percent slopes	1													1
		Ahwahnee-Sierra coarse sandy loams, 30 to 45 percent slopes	1													1
		Ahwahnee-Tollhouse-Rock land complex, 45 to 70 percent slopes	1													1
Ahwahnee family	SSURGO	Ahwahnee family, 35 to 65 percent slopes	2													2
		AHWAHNEE FAMILY, 5 TO 35 PERCENT SLOPES	1													1
		Ahwahnee family-Rock outcrop complex, 35 to 75 percent slopes	2													2
Aido	SSURGO	Aido clay 30 to 50 percent slopes	1													1
		Aido clay, 50 to 75 percent slopes	1													1
		Aido clay, 9 to 30 percent slopes	1													1

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Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Aiken	SSURGO	Aiken loam, 3 to 9 percent slopes	1													1
		Aiken very rocky loam, 45 to 70 percent slopes	1													1
Akers	SSURGO	Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes							1							1
Alamedawell	SSURGO	Alamedawell gravelly substratum-Brantel association, 0 to 4 percent slopes										1				1
		Alamedawell loamy sand, 0 to 2 percent slopes										1				1
		Alamedawell sandy substratum-Deepwell association, 2 to 15 percent slopes										1				1
		Alamedawell sandy substratum-Deepwell association, non-saline, 2 to 15 percent slopes										1				1
		Alamedawell-Brantel association, 2 to 15 percent slopes										1				1
		Alamedawell-Conway-Xerofluvents complex, 0 to 4 percent slopes										1				1
		Alamedawell-Deepwell association, 2 to 15 percent slopes										1				1
		Alamedawell-Orecart complex, 0 to 4 percent slopes										1				1
		Alamedawell-Orecart complex, 4 to 15 percent slopes										1				1
Alamo	SSURGO	Alamo clay		1												1
		Alamo clay, 0 to 1 percent slopes		1												1
Alberti	SSURGO	Alberti complex, 15 to 50 percent slopes	1													1
		Alberti gravelly loam, 5 to 30 percent slopes	1													1
		Alberti-Urban land complex, 0 to 30 percent slopes	1													1
Alko	SSURGO	Alko-Neuralia sandy loams, 0 to 9 percent slopes			1											1
Altamont	SSURGO	Altamont clay, 5 to 8 percent slopes	1													1
		Vaquero-Altamont complex, 15 to 50 percent slopes	1													1
		Vaquero-Altamont complex, 50 to 75 percent slopes	1													1
Altaslough	SSURGO	Altaslough clay loam, 0 to 1 percent slopes								1						1
Amargosa	SSURGO	Amargosa rocky coarse sandy loam, 9 to 55 percent slopes, eroded	1													1
Anaheim variant	SSURGO	Anaheim variant very fine sandy loam, 2 to 30 percent s lopes	1													1
Anaverde	SSURGO	Anaverde gravelly loam, 30 to 50 percent slopes	1													1
		Anaverde gravelly loam, 50 to 75 percent slopes	1													1
		Anaverde loam, 15 to 30 percent slopes	1													1
		Anaverde rocky loam, 30 to 50 percent slopes	1													1
Anela	SSURGO	Anela very gravelly sandy loam, 0 to 2 percent slopes									1					1
		Anela-vernalis association, 0 to 5 percent slopes									1					1
		Cerini-Anela-Fluvaquents, saline-Sodic, association, 0 to 2 percent slopes									1					1
Angelwhine	SSURGO	Angelwhine-Hawkinspeak-Hawkridge association	1													1
		Hawkinspeak-Thiefridge-Angelwhine association	1													1
Aquandic Endoaquolls	SSURGO	Aquandic Endoaqolls, 0 to 5 percent slopes									1					1
Aquents	SSURGO	Aquents-Aquic torripsamments association, 0 to 2 percent slopes											1			1
		Aquents-Aquolls-Riverwash complex, 0 to 5 percent slopes, flooded											1			1
Aquic Cryoborolls	SSURGO	Aquic Cryoborolls, 5 to 30 percent slopes									1					1
Aquic Cryumbrepts	SSURGO	STECUM FAMILY-AQUIC CRYUMBREPTS ASSOCIATION, 1 TO 25 PERCENT SLOPES									1					1
Aquic Dystric Xerochrepts	SSURGO	AQUIC DYSTRIC XEROCHEPTS, 1 TO 15 PERCENT SLOPES									1					1
Aquic Haploxerolls	SSURGO	Aquic Haploxerolls, 0 to 9 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Aquic Torrifluvents	SSURGO	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes											1			1
Aquic Torriorthents	SSURGO	Aquic Torriorthents-Aquents complex, 0 to 2 percent slopes											1			1
		Aquic Torriorthents-Aquents-Cashbaugh association, 0 to 15 percent slopes											1			1
		Aquic Torriorthents-Aquents-Deepwell complex, 0 to 15 percent slopes											1			1
		Aquic Torriorthents-Aquic torripsamments complex, 0 to 2 percent slopes											1			1
Aramburu	SSURGO	Aramburu very shaly clay loam, 15 to 30 percent slopes	1													1
		Aramburu very shaly clay loam, 30 to 50 percent slopes	1													1
		Aramburu very shaly clay loam, 50 to 75 percent slopes	1													1
		Aramburu-Temblor complex, 30 to 50 percent slopes	1													1
		Aramburu-Temblor complex, 50 to 75 percent slopes	1													1
	STATSGO	ARAMBURU-REWARD-POTTINGER (CA343)	1													1
ARAMBURU VARIANT	STATSGO	ARAMBURU VARIANT-MODJESKA FAMILY-COARSEGOLD (CA542)	1													1
Arburua	SSURGO	Arburua loam, 15 to 30 percent slopes	1													1
		Arburua loam, 2 to 8 percent slopes	1													1
		Arburua loam, 30 to 50 percent slopes	1													1
		Arburua loam, 8 to 15 percent slopes	1													1
		Arburua-Morenogulch association, 15 to 80 percent slopes	1													1
Arizo	SSURGO	Arizo gravelly loamy sand, 0 to 5 percent slopes									1					1
		Arizo gravelly loamy sand, 2 to 9 percent slopes									1					1
		Arizo gravelly loamy sand, 5 to 9 percent slopes									1					1
		Arizo gravelly loamy sand, 9 to 15 percent slopes									1					1
		Arizo-Yellowrock complex, 2 to 5 percent slopes									1					1
		Arizo-Yellowrock complex, 5 to 9 percent slopes									1					1
		Arizo-Yellowrock complex, 9 to 15 percent slopes									1					1
	STATSGO	ARIZO-BLUEPOINT-CAJON (CA901)								1						1
		ARIZO-BLUEWING FAMILY-YELLOWROCK (CA741)								1						1
		ARIZO-YELLOWROCK-RIVERWASH (CA740)								1						1
		NICKEL-ARIZO-BITTER (CA930)								1						1
Armoine	SSURGO	Armoine-Blappert-Rock outcrop association	1													1
		Armoine-Tulecan association	1													1
Armona	SSURGO	Armona loam, partially drained									1					1
		Armona loam, partially drained, 0 to 1 percent slopes									1					1
		Armona sandy loam, partially drained, 0 to 1 percent slopes									1					1
Artray family	SSURGO	Artray-Chesaw families complex, 0 to 5 percent slopes									1					1
Arujo	SSURGO	Arujo sandy loam, 9 to 15 percent slopes	1													1
		Arujo-Feethill-Sesame association, 15 to 45 percent slopes	1													1
		Arujo-Feethill-Sesame association, 30 to 60 percent slopes	1													1
		Arujo-Friant-Tunis complex, 15 to 50 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Arujo-Friant-Tunis complex, 50 to 75 percent slopes	1													1
		Arujo-Friant-Tunis, 9 to 15 percent slopes	1													1
		Arujo-Urban land complex, 0 to 15 percent slopes	1													1
		Arujo-Walong-Tunis association, 30 to 75 percent slopes	1													1
		Arujo-Walong-Tunis association, 9 to 30 percent slopes	1													1
Arvin	SSURGO	Arvin sandy loam, 2 to 5 percent slopes									1					1
		Arvin sandy loam, 5 to 9 percent slopes									1					1
		Arvin stony sandy loam, 5 to 9 percent slopes									1					1
Aspetill	SSURGO	Aspetill association			1											1
		Aspetill association, very stony			1											1
Aspocket	SSURGO	Aspocket association	1													1
Atesh	SSURGO	Atesh-Jerryslu association, 0 to 2 percent slopes				1										1
Atravesada	SSURGO	Atravesada gravelly sandy loam, 30 to 70 percent slopes	1													1
Atter family	SSURGO	Atter family, 15 to 60 percent slopes		1												1
		Wrango-Atter families complex, 30 to 60 percent slopes		1												1
Atwater	SSURGO	Atwater loamy sand, 0 to 3 percent slopes			1											1
		Atwater loamy sand, 3 to 8 percent slopes			1											1
		Atwater loamy sand, 3 to 9 percent slopes			1											1
		Atwater loamy sand, moderately deep and deep over hardpan, 0 to 3 percent slopes			1											1
		Atwater loamy sand, moderately deep and very deep over hardpan, 3 to 8 percent slopes			1											1
		Atwater loamy sand, moderately deep, 0 to 3 percent slopes			1											1
		Atwater sandy loam, 0 to 3 percent slopes			1											1
		Atwater sandy loam, 3 to 9 percent slopes			1											1
		Atwater sandy loam, clay substratum, 0 to 3 percent slopes			1											1
		Atwater sandy loam, moderately deep, 0 to 3 percent slopes			1											1
Auberry	SSURGO	Auberry coarse sandy loam, 15 to 30 percent slopes	1													1
		Auberry coarse sandy loam, 15 to 30 percent slopes, eroded	1													1
		Auberry coarse sandy loam, 3 to 9 percent slopes	1													1
		Auberry coarse sandy loam, 3 to 9 percent slopes, eroded	1													1
		Auberry coarse sandy loam, 30 to 45 percent slopes	1													1
		Auberry coarse sandy loam, 45 to 70 percent slopes	1													1
		Auberry coarse sandy loam, 9 to 15 percent slopes	1													1
		Auberry coarse sandy loam, 9 to 15 percent slopes, eroded	1													1
		Auberry sandy loam, 10 to 30 percent slopes	1													1
		Auberry sandy loam, 15 to 30 percent slopes	1													1
		Auberry sandy loam, 30 to 50 percent slopes	1													1
		Auberry sandy loam, 5 to 9 percent slopes	1													1
		Auberry sandy loam, 50 to 75 percent slopes	1													1
		Auberry sandy loam, 9 to 15 percent slopes	1													1
		Auberry very rocky coarse sandy loam, 3 to 30 percent slopes	1													1
		Auberry very rocky coarse sandy loam, 30 to 45 percent slopes	1													1
		Auberry very rocky coarse sandy loam, 45 to 70 percent slopes	1													1
		Auberry very rocky coarse sandy loam, shallow, 30 to 70 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Auberry-cieneba-rock outcrop complex, 10 to 30 percent slopes	1													1
		Auberry-Cieneba-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Auberry-Holland association, moderately steep	1													1
		Auberry-Holland association, very steep	1													1
		Auberry-Rock outcrop complex, 9 to 50 percent slopes	1													1
		Auberry-sierra coarse sandy loams, 15 to 30 percent slopes	1													1
		Auberry-sierra coarse sandy loams, 30 to 45 percent slopes	1													1
		Auberry-sierra coarse sandy loams, 45 to 70 percent slopes	1													1
		Auberry-sierra very rocky coarse sandy loams, 45 to 70 percent slopes	1													1
		Auberry-Tollhouse-Rock land complex, 30 to 70 percent slopes	1													1
Auberry 2	SSURGO	Rock outcrop-Auberry-Kanaka family association, steep	1													1
		Rock outcrop-Auberry-Kanaka family association, very steep	1													1
Auberry family	SSURGO	Auberry family, 35 to 65 percent slopes	2													2
		AUBERRY FAMILY, 5 TO 35 PERCENT SLOPES	1													1
		AUBERRY FAMILY-ROCK OUTCROP COMPLEX, 35 TO 75 PERCENT SLOPES	1													1
		AUBERRY-AHWAHNEE FAMILIES ASOCIATION, 5 TO 35 PERCENT SLOPES	1													1
		Auberry-Ahwahnee families association, 35 to 65 percent slopes	2													2
		AUBERRY-TOLLHOUSE FAMILIES-ROCK OUTCROP ASSOCIATION, 25 TO 65 PERCENT SLOPES	1													1
		Coarsegold-Auberry families association, 35 to 65 percent slopes	2													2
Avalmount	SSURGO	Avalmount-Lava flows complex, 5 to 30 percent slopes		1												1
		Avalmount-Rock outcrop-Rubble land complex, 50 to 75 percent slopes											1			1
Avenal	SSURGO	Avenal loam, 0 to 5 percent slopes		1												1
Ayar	SSURGO	Ayar clay loam, 5 to 15 percent slopes	1													1
		Ayar clay, 5 to 8 percent slopes	1													1
		Ayar silty clay, 5 to 9 percent slopes	1													1
		Ayar-Arburua complex, 8 to 15 percent slopes	1													1
		Ayar-Bluestone complex, 9 to 30 percent slopes	1													1
		Ayar-Hillbrick-Aido complex, 30 to 50 percent slopes	1													1
		Ayar-Hillbrick-Aido complex, 50 to 75 percent slopes	1													1
Backcanyon	SSURGO	Backcanyon-Rock outcrop complex, 15 to 50 percent slopes	1													1
Badgerpass	SSURGO	Dystric Xeropsamments-Typic Dystroxerepts-Badgerpass-Rock outcrop association, 5 to 35 percent slopes, mountain valleys, mountain slopes, frigid			1											1
Badland	SSURGO	Badland	1	1												2
		Badland-Orthents complex, 30 to 75 percent slopes		1												1
	STATSGO	BADLAND-BITTERWATER-CAJON (CA910)		1												1
		BADLAND-ROSITAS-BEELINE (CA911)		1												1
Badlands	SSURGO	Loslobos-Xeric Torriorthents, very gravelly-Badlands association, 30 to 50 percent slopes	1													1
Bairs	SSURGO	Bairs bouldery loamy coarse sand, 5 to 15 percent slopes		1												1
		Bairs bouldery loamy coarse sand, moist, 5 to 15 percent slopes		1												1
		Bairs-Kilburn family complex, 8 to 30 percent slopes		1												1
		Bairs-Nipintuck family association, 4 to 30 percent slopes		1												1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Bairs family	SSURGO	Bairs family, 15 to 50 percent slopes		1												1
Bakersfield	SSURGO	Bakersfield fine sandy loam, drained, 0 to 1 percent slopes									1					1
		Bakersfield sandy loam, partially drained, 0 to 1 percent slopes									1					1
Bakscratch	SSURGO	Bakscratch-Grandridge-McTom association	1													1
Balcom	SSURGO	Balcom-Rock outcrop complex, 50 to 75 percent slopes	1													1
Balcom variant	SSURGO	Balcom variant clay loam, 5 to 30 percent slopes	1													1
Baldmountain	SSURGO	Baldmountain-Rock outcrop-Jumpe family complex, 30 to 50 percent slopes	1													1
Baldmountain 2	SSURGO	Rock outcrop-Baldmountain complex, 30 to 50 percent slopes	1													1
		Rock outcrop-Baldmountain complex, 50 to 75 percent slopes	1													1
Ballinger	SSURGO	Ballinger silty clay, 15 to 50 percent slopes	1													1
		Ballinger-Panoza-Beam association, 15 to 50 percent slopes	1													1
		Bitcreek-Balhud-Ballinger complex, 5 to 30 percent slopes	1													1
		Pleito-Ballinger-Balhud complex, 15 to 50 percent slopes	1													1
Bapos	SSURGO	Bapos clay loam, 2 to 8 percent slopes		1												1
Barasco	SSURGO	Barasco loamy fine sand, 0 to 2 percent slopes									1					1
Bartine	SSURGO	Supervisor-Bartine families association, 30 to 70 percent slopes	1													1
Basalt flow	SSURGO	Basalt flow		1												1
Basket	SSURGO	Basket-Bondranch families-Rock outcrop, metasedimentary association, 60 to 80 percent slopes	1													1
		Credo-Basket families complex, 30 to 60 percent slopes	1													1
Basket family	SSURGO	Neuske-Basket families complex, 30 to 60 percent slopes	1													1
BEAM	SSURGO	Panoza-Beam association, 15 to 30 percent slopes	1													1
		Panoza-Beam association, 15 to 75 percent slopes	1													1
		Panoza-Beam complex, 15 to 30 percent slopes	1													1
		Xeric Torriorthents-Badlands-Beam association, 30 to 75 percent slopes	1													1
		Zonap-Harrisranch-Beam complex, 15 to 50 percent slopes	1													1
	STATSGO	BEAM-PANOZA-KILMER (CA585)	1													1
Bear Creek	SSURGO	Bear Creek loam, 0 to 3 percent slopes								1						1
Bearskin	SSURGO	Bearskin-Toeja families complex. 30 to 60 percent slopes	1													1
Bearskin family	SSURGO	Nanamkin-Bearskin families association, 0 to 30 percent slopes	1													1
Bearskin family 2	SSURGO	Bearskin family-Rock outcrop complex, 0 to 30 percent slopes	1													1
		Rock outcrop-Bearskin family complex, 60 to 90 percent slopes	1													1
Belgarra	SSURGO	Belgarra-Arburua-Morenogulch association, 15 to 65 percent slopes	1													1
		Grazer-Belgarra-Arburua association, 8 to 50 percent slopes	1													1
Bellyspring	SSURGO	Bellyspring-Xeric Torriorthents complex, 15 to 30 percent slopes	1													1
		Bellyspring-Xeric Torriorthents complex, 30 to 50 percent slopes	1													1
		Bellyspring-Xeric Torriorthents complex, 9 to 15 percent slopes	1													1
Benemes	SSURGO	Benemes-Brantel complex, 2 to 15 percent slopes										1				1
Berent	SSURGO	Berent-Glenbrook-Nanamkin families association, 30 to 50 percent slopes	1													1
		Berent family, 5 to 15 percent slopes	1													1
		Risue-Berent families association, 2 to 15 percent slopes	1													1

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Berent family	SSURGO	Berent-Glenbrook-Nanamkin families association, 30 to 50 percent slopes	1													1
		Berent family, 15 to 30 percent slopes	1													1
		Berent family-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Delaney-Berent families-Rock outcrop complex, 15 to 60 percent slopes	1													1
		Wrango-Berent families-Rock outcrop association, 30 to 60 percent slopes	1													1
Berent family 2	SSURGO	Berent family-Rock outcrop complex, 30 to 60 percent slopes	1													1
BESHERM	STATSGO	BESHERM-NOPAH-HAYMONT (CA937)						1								1
Beveridge	SSURGO	Beveridge family-Rock outcrop, limestone complex, 60 to 80 percent slopes	1													1
	STATSGO	BEVERIDGE-ROCK OUTCROP-ADINOT (CA743)	1													1
Biggriz	SSURGO	Biggriz-Biggriz, saline-Sodic, complex, 0 to 2 percent slopes						1								1
Biglake family	SSURGO	Biglake family, 0 to 15 percent slopes			1											1
		Rock outcrop-Biglake-Salt Chuck families complex, 30 to 60 percent slopes			1											1
Biglake family 2	SSURGO	Biglake-Chesaw families-Rock outcrop complex, 15 to 60 percent slopes										1				1
		Rock outcrop-Biglake family complex, 30 to 70 percent slopes			1											1
Birdcanyon	SSURGO	Birdcanyon coarse sand, 4 to 15 percent slopes								1						1
Bisgani	SSURGO	Bisgani sandy loam, drained, 0 to 1 percent slopes											1			1
		Bisgani-Elnido association, 0 to 1 percent slopes											1			1
Bitcreek	SSURGO	Bitcreek loam, 2 to 5 percent slopes	1													1
		Bitcreek sandy loam, 2 to 9 percent slopes	1													1
		Bitcreek-Dibble-Eaglerest complex, 15 to 50 percent slopes	1													1
		Bitcreek-Shimmon-Balhud complex 30 to 75 percent slopes	1													1
		Bitcreek-Shimmon-Balhud complex, 9 to 50 percent slopes	1													1
Bitterwater	SSURGO	Bitterwater gravelly sandy loam, 15 to 50 percent slope s	1													1
		Bitterwater sandy loam, 15 to 50 percent slopes	1													1
		Bitterwater sandy loam, 9 to 15 percent slopes	1													1
		Bitterwater-Aridic Calcixerolls loamy complex, 9 to 15 percent slopes	1													1
		Bitterwater-Delgado association, 30 to 75 percent slope s	1													1
		Bitterwater-Delgado association, 9 to 30 percent slopes	1													1
		Bitterwater-Typic Torriorthents very gravelly complex, 15 to 30 percent slopes	1													1
		Bitterwater-Typic Torriorthents very gravelly complex, 30 to 50 percent slopes	1													1
BLACKMOUNT	STATSGO	NICKEL-ARIZO-BLACKMOUNT (CA902)		1												1
Blackston	SSURGO	Blackston family, 15 to 30 percent slopes		1												1
BLACKTOP	STATSGO	BLACKTOP-DOWNEYVILLE-ROCK OUTCROP (CA788)	1													1
Blasingame	SSURGO	Blasingame clay loam, shallow, 30 to 45 percent slopes	1													1
		Blasingame clay loam, shallow, 9 to 30 percent slopes	1													1
		Blasingame extremely rocky loam, shallow, 30 to 70 percent slopes	1													1
		Blasingame loam, 15 to 30 percent slopes	1													1
		Blasingame loam, 3 to 15 percent slopes	1													1
		Blasingame loam, 30 to 45 percent slopes	1													1
		Blasingame loam, 45 to 70 percent slopes	2													2

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Blasingame loam, shallow, 45 to 70 percent slopes	1													1
		Blasingame sandy loam, 15 to 30 percent slopes	1													1
		Blasingame sandy loam, 30 to 50 percent slopes	1													1
		Blasingame sandy loam, 9 to 15 percent slopes	1													1
		Blasingame very rocky clay loam, 30 to 45 percent slopes	1													1
		Blasingame very rocky loam, 3 to 30 percent slopes	1													1
		Blasingame very rocky loam, 45 to 70 percent slopes	2													2
		Blasingame-Arujo-Cieneba association, 15 to 45 percent slopes	1													1
		Blasingame-Rock outcrop complex, 9 to 50 percent slopes	1													1
Blasingame 2	SSURGO	Blasingame-Rock outcrop complex, 9 to 50 percent slopes	1													1
Blindspring	SSURGO	Blindspring gravelly loamy sand, 0 to 5 percent slopes									1					1
		Blindspring gravelly loamy sand, dry, 0 to 5 percent slopes									1					1
Bluewing	SSURGO	Trocken-Bluewing families complex, 15 to 30 percent slopes	1													1
Boggs	SSURGO	Boggs sandy loam, partially drained									1					1
Bohna	SSURGO	Bohna loam, 30 to 50 percent slopes	1													1
		Bohna loam, 5 to 30 percent slopes	1													1
		Holland-Bohna association, steep	1													1
Bolfar	SSURGO	Bolfar loam, drained, 0 to 1 percent slopes									1					1
Bondranch	SSURGO	Basket-Bondranch families complex, 15 to 30 percent slopes	1													1
Boomer	SSURGO	Boomer-Crozier-Rock outcrop complex, 5 to 40 percent slopes	1													1
Borden	SSURGO	Borden fine sandy loam, 0 to 1 percent slopes			1											1
		Borden fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes			1											1
		Borden loam			1											1
		Borden loam, 0 to 1 percent slopes			1											1
		Borden loam, moderately deep			1											1
		Borden loam, moderately deep, saline alkali			1											1
		Borden loam, saline-alkali			1											1
		Borden loam, slightly saline-alkali, 0 to 1 percent slopes			1											1
BOREALIS	STATSGO	BOREALIS-RATTO FAMILY-ITCA (CA779)		1												1
Borreguero	SSURGO	Currymountain-Wisflat-Borreguero association, 30 to 75 percent slopes	1													1
		Millsholm-borreguero complex, 30 to 65 percent slopes	1													1
		Rock outcrop-Borreguero complex, 30 to 65 percent slopes	1													1
Brad	SSURGO	Brad family-Rock outcrop, granitic complex, 15 to 30 percent slopes	1													1
Brader family 2	SSURGO	Rock outcrop-Brader-Siskiyou families complex, 20 to 60 percent slopes	1													1
		Rock outcrop-Cieneba-Brader family complex, 50 to 75 percent slopes	1													1
		Siskiyou-Brader families-Rock outcrop complex, 5 to 30 percent slopes	1													1
Brantel	SSURGO	Brantel gravelly coarse sand, 2 to 8 percent slopes									1					1
		Brantel gravelly coarse sand, cool, 2 to 8 percent slopes									1					1
		Brantel gravelly loamy sand, 0 to 4 percent slopes									1					1
		Brantel gravelly loamy sand, low elevation, 0 to 5 percent slopes									1					1
		Brantel gravelly loamy sand, moist, 0 to 4 percent slopes									1					1
	STATSGO	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)										1				1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Brantel family	SSURGO	Brantel family, 0 to 15 percent slopes										1				1
		Brantel family, 30 to 60 percent slopes										1				1
		Vitrandic Torriorthents, gravelly-Brantel family complex, 2 to 30 percent slopes										1				1
Brantel family 2	SSURGO	Brantel family-Rock outcrop complex, 0 to 30 percent slopes										1				1
Brecken	SSURGO	Brecken-Cuyama-Pleito complex, 15 to 60 percent slopes		1												1
Bregar	SSURGO	Basket-Bregar families complex, 15 to 30 percent slopes	1													1
BRIER	STATSGO	BRIER-SQUAWTIP-ITCA (CA789)	1													1
Brokenhoe	SSURGO	Brokenhoe-Fisherdig association			1											1
Brownlee family	SSURGO	Brownlee family-Hotaw variant complex, 30 to 50 percent slopes	1													1
		Hotaw variant-Brownlee family-Rock outcrop complex, 40 to 75 percent slopes	1													1
Buchenau	SSURGO	Buchenau fine sandy loam, 0 to 3 percent slopes						1								1
		Buchenau fine sandy loam, slightly saline-alkali, 0 to 3 percen slopes						1								1
		Buchenau fine sandy loam, strongly saline-alkali, 0 to 3 percen slopes						1								1
		Buchenau loam, 0 to 3 percent slopes						1								1
Buggin	SSURGO	Buggin-Rock outcrop complex, 30 to 75 percent slopes	1													1
BULAKE FAMILY	STATSGO	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)	1													1
BUNKERHILL	STATSGO	BUNKERHILL-SALT FLATS-DUNE LAND (CA742)									1					1
Burchflat	SSURGO	Burchflat-Celeridge-Loope association	1													1
		Burchflat-Loope association	1													1
Buscones	SSURGO	Buscones very gravelly loamy sand, 2 to 15 percent slopes										1				1
		Buscones very gravelly loamy sand, dry, 2 to 15 percent slopes										1				1
		Buscones very gravelly loamy sand, moist, 2 to 15 percent slopes										1				1
		Buscones-Brantel-Pizona association, 2 to 30 percent slopes										1				1
		Buscones-Brantel-Sherwin association, 2 to 30 percent slopes										1				1
		Buscones-Cashbaugh-Rock outcrop association, 0 to 8 percent slopes										1				1
		Buscones-Pizona association, 4 to 30 percent slopes										1				1
Buscones family	SSURGO	Sherwin-Buscones families complex, 0 to 15 percent slopes										1				1
Buttonwillow	SSURGO	Buttonwillow clay, drained									1					1
		Buttonwillow clay, partially drained									1					1
		Buttonwillow clay, partially drained, 0 to 1 percent slopes									1					1
	STATSGO	LOKERN-BUTTONWILLOW (CA349)									1					1
CAGLE	STATSGO	ISTER-CAGLE-HYLOC (CA859)	1													1
Cagwin	SSURGO	Cagwin-Toem rock outcrop complex, 50 to 75 percent slopes	1													1
		Cagwin-Toem-Monache association, steep	1													1
Cagwin 2	SSURGO	Cagwin-Toem rock outcrop complex, 30 to 50 percent slopes	1													1
		Cagwin-Toem-Rock outcrop complex, 5 to 30 percent slopes	1													1
Cagwin family	SSURGO	Cagwin family, 25 to 60 percent slopes	2													2
		Cagwin family-Lithic Xeropsamments-Rock outcrop complex, 15 to 45 percent slopes	2													2

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		CAGWIN FAMILY-LITHIC XEROPSAMMENTS-ROCK OUTCROP COMPLEX, 45 TO 65 PERCENT SLOPES	1													1
		CAGWIN FAMILY-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES	1													1
		Cagwin family-Rock outcrop complex, 35 to 65 percent slopes	2													2
		Cagwin-Cannell families complex, 2 to 25 percent slopes	2													2
		GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES	1													1
Cagwin family 2	SSURGO	CAGWIN FAMILY-LITHIC XEROPSAMMENTS-ROCK OUTCROP COMPLEX, 45 TO 65 PERCENT SLOPES	1													1
Cagwin variant	SSURGO	Cagwin variant loamy coarse sand, 5 to 15 percent slopes								1						1
Cajon	SSURGO	Cajon coarse sandy loam									1					1
		Cajon coarse sandy loam, moderately deep, saline alkali									1					1
		Cajon coarse sandy loam, saline alkali									1					1
		Cajon gravelly loamy sand, 0 to 5 percent slopes									1					1
		Cajon gravelly loamy sand, 0 to 9 percent slopes									1					1
		Cajon gravelly sand, 0 to 5 percent slopes									1					1
		Cajon loamy coarse sand									1					1
		Cajon loamy coarse sand, 0 to 5 percent slopes									1					1
		Cajon loamy coarse sand, saline-alkali									1					1
		Cajon loamy fine sand, 0 to 2 percent slopes									1					1
		Cajon loamy fine sand, 2 to 9 percent slopes									1					1
		Cajon loamy sand, 0 to 1 percent slopes											1			1
		Cajon loamy sand, 0 to 2 percent slopes									1		1			2
		Cajon loamy sand, 0 to 5 percent slopes									1					1
		Cajon loamy sand, 2 to 5 percent slopes									1					1
		Cajon loamy sand, 2 to 9 percent slopes									1					1
		Cajon loamy sand, loamy substratum, 0 to 2 percent slopes									1					1
		Cajon loamy sand, moderately saline-alkali, 0 to 1 percent slopes									1					1
		Cajon loamy sand, saline-alkali, 0 to 2 percent slopes									1					1
		Cajon loamy sand, slightly saline-alkali, 0 to 1 percent slopes											1			1
		Cajon loamy sand, stratified substratum, 0 to 5 percent slopes									1					1
		Cajon loamy sand, strongly saline-alkali, 0 to 1 percent slopes									1					1
		Cajon sand, 5 to 15 percent slopes									1					1
		Cajon sandy loam									1					1
		Cajon sandy loam, overblown, 0 to 2 percent slopes											1			1
		Cajon-Challenger complex, 2 to 9 percent slopes									1					1
		Cajon-Garlock sands, 2 to 9 percent slopes									1					1
		Cajon-Machone complex, 2 to 9 percent slopes									1					1
		Cajon-Mazourka complex, 0 to 2 percent slopes									1					1
		Cajon-Mazourka-Eclipse complex, 0 to 2 percent slopes									1					1
		Cajon-Norob complex, 0 to 15 percent slopes									1					1
		Cajon-Norob complex, 0 to 5 percent slopes									1					1
		Cajon-Norob complex, 2 to 9 percent slopes									1					1
		Cajon-Typic Torriorthents complex, 0 to 5 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
	STATSGO	CAJON-ARIZO-VICTORVILLE VARIANT (CA931)									1					1
		CAJON-HESPERIA FAMILY-HELENDALE (CA764)									1					1
		CAJON-WASCO-ROSAMOND (CA635)									1					1
		CAJON-WESTHAVEN-EXCELSIOR (CA354)									1					1
Calcic Haploxerepts	SSURGO	Calcic Haploxerepts-Calcic Pachic Argixerolls, fine-Xerorthents, shallow complex, 30 to 75 percent slopes		1												1
		Calcic Haploxerepts-Xerorthents, shallow-Badlands complex, 30 to 100 percent slopes		1												1
		Xeric Torriorthents-Calcic Haploxerepts association, 15 to 60 percent slopes		1												1
Calflax	SSURGO	Calflax clay loam, saline-sodic, 0 to 2 percent slopes								1						1
		Calflax clay loam, saline-sodic, wet, 0 to 1 percent slopes								1						1
		Calflax fine sandy loam, 0 to 1 percent slopes								1						1
		Calflax loam, 0 to 1 percent slopes								1						1
Calgro	SSURGO	Calgro-Calgro, saline-Sodic complex, 0 to 2 percent slopes						1								1
		Calgro-Calgro, saline-Sodic, complex, 0 to 2 percent slopes						1								1
Calhi	SSURGO	Calhi loamy sand, 0 to 3 percent slopes											1			1
		Calhi loamy sand, 3 to 9 percent slopes											1			1
		Calhi loamy sand, moderately alkali, 0 to 8 percent slopes											1			1
		Calhi loamy sand, moderately deep and deep over silt, moderatel saline-alkali, 0 to 3 percent slopes											1			1
		Calhi loamy sand, moderately deep and deep over silt, moderatel saline-alkali, 3 to 8 percent slopes											1			1
		Calhi loamy sand, moderately deep and deep over silt, slightly saline-alkali, 0 to 3 percent slopes											1			1
		Calhi loamy sand, moderately deep and deep over silt, slightly saline-alkali, 3 to 8 percent slopes											1			1
		Calhi loamy sand, moderately deep and deep over silt, strongly saline-alkali, 0 to 3 percent slopes											1			1
		Calhi loamy sand, moderately deep, 0 to 3 percent slopes											1			1
		Calhi loamy sand, slightly alkali, 0 to 8 percent slopes											1			1
Calhi variant	SSURGO	Calhi loamy sand, shallow over hardpan variant, moderately saline-alkali, 0 to 1 percent slopes											1			1
Calicreek	SSURGO	Calicreek loamy coarse sand, 0 to 2 percent slopes, occasionally flooded									1					1
		Calicreek loamy coarse sand, 0 to 2 percent slopes, rarely flooded									1					1
		Calicreek sandy loam, 0 to 2 percent slopes, occasionally flooded									1					1
Calpine family	SSURGO	Calpine family, 5 to 30 percent slopes			1											1
Calpine family 2	SSURGO	Calpine family-Rock outcrop complex, 0 to 15 percent slopes			1											1
Calvista	SSURGO	Calvista-Hi Vista complex, 2 to 9 percent slopes	1													1
		Calvista-Hi Vista rocky complex, 9 to 30 percent slopes	1													1
	STATSGO	CALVISTA-ROCK OUTCROP-TRIGGER (CA919)	1													1
Cambidic Haplodurids	SSURGO	Cambidic Haplodurids-Typic Haplodurids association, 5 to 50 percent slopes		1												1
		Cambidic Haplodurids-Typic Haplodurids association, cool, 5 to 50 percent slopes		1												1

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Canebrake	SSURGO	Canebrake-Lachim complex, 30 to 60 percent slopes	1													1
		Canebrake-Lachim-Rock outcrop complex, 30 to 60 percent slopes	1													1
Canfire	SSURGO	Canfire-Crispy-Rock outcrop association	1													1
Canisrocks	SSURGO	Canisrocks, 5 to 35 percent slopes, mountain valleys, cryic			1											1
		Canisrocks-Crazymule complex, 15 to 45 percent slopes, mountain slopes, lateral moraines, cryic			1											1
		Canisrocks-Glacierpoint complex, 0 to 25 percent slopes, lateral moraines, cryic			1											1
		Canisrocks-Glacierpoint-Humic Dystrocryepts complex, 15 to 55 percent slopes, lateral moraines, cryic			1											1
Canisrocks 2	SSURGO	Rock outcrop-Canisrocks complex, 30 to 70 percent slopes, mountain slopes, cryic			1											1
		Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 5 to 45 percent slopes, moraines, mountain slopes, cryic			1											1
Cannell	SSURGO	Cannell-Kriest family,-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Cannell-Kriest family,-Rock outcrop complex, 5 to 30 percent slopes	1													1
		Cannell-Sirretta-Nanny family complex, 30 to 50 percent slopes	1													1
		Cannell-Sirretta-Nanny family complex, 5 to 30 percent slopes	1													1
		Kriest family,-Cannell-Rock outcrop complex, 5 to 30 percent slopes	1													1
		Sirretta-Rock outcrop-Cannell complex, 5 to 30 percent slopes	1													1
Cannell 2	SSURGO	Cannell-Kriest family,-Rock outcrop complex, 50 to 75 percent slopes	1													1
Cannell family	SSURGO	CANNELL FAMILY, 15 TO 45 PERCENT SLOPES	1													1
Cantua	SSURGO	Cantua coarse sandy loam, 15 to 30 percent slopes	1													1
		Cantua coarse sandy loam, 5 to 15 percent slopes	1													1
Capay	SSURGO	Capay silty clay, 2 to 9 percent slopes								1						1
Carollo	SSURGO	Carollo clay loam, 5 to 20 percent	1													1
		Carollo-Twisselman saline alkali association, 2 to 15 p ercent slopes	1													1
Carranza	SSURGO	Carranza gravelly sandy loam, 2 to 8 percent slopes						1								1
CARRIZO	STATSGO	CARRIZO-CHUCKAWALLA-ROCK OUTCROP (CA935)						1								1
		CARRIZO-ROSITAS-GUNSIGHT (CA922)						1								1
Carshal	SSURGO	Carshal-Loope-Rock outcrop complex, 15 to 75 percent slopes	1													1
CARSITAS	STATSGO	ROSITAS-CARSITAS-DUNE LAND (CA921)											1			1
Cartago	SSURGO	Cartago gravelly loamy coarse sand, 5 to 30 percent slopes							1							1
		Cartago gravelly loamy coarse sand, moist, 5 to 30 percent slopes							1							1
		Cartago gravelly loamy sand, 0 to 2 percent slopes							1							1
		Cartago gravelly loamy sand, 2 to 5 percent slopes							1							1
		Cartago-Goodale complex, 0 to 2 percent slopes							1							1
		Cartago-Hesperia complex, 0 to 2 percent slopes							1							1
	STATSGO	CARTAGO-YERMO-TINEMAHA (CA760)							1							1
Cartago family	SSURGO	Goodale-Cartago families complex, 5 to 15 percent slopes							1							1
Cashbaugh	SSURGO	Cashbaugh-Brantel association, 0 to 4 percent slopes										1				1
		Cashbaugh-Buscones complex, 0 to 4 percent slopes										1				1
		Cashbaugh-Buscones-Calpine family complex, 0 to 4 percent slopes										1				1

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		Cashbaugh-Buscones-Rock outcrop association, 0 to 15 percent slopes										1				1
Cath	SSURGO	Midas-Cath-Mackey families complex, 4 to 15 percent slopes		1												1
Celeridge	SSURGO	Celeridge-Gerdog-Loope association	1													1
Centennial	SSURGO	Centennial-Helendale complex, 2 to 9 percent slopes			1											1
Centerville	SSURGO	Centerville clay, 0 to 2 percent slopes		1												1
		Centerville clay, 0 to 3 percent slopes		1												1
		Centerville clay, 15 to 30 percent slopes		1												1
		Centerville clay, 2 to 5 percent slopes		1												1
		Centerville clay, 2 to 9 percent slopes		1												1
		Centerville clay, 3 to 15 percent slopes		1												1
		Centerville clay, 9 to 15 percent slopes		1												1
		Centerville cobbly clay, 3 to 9 percent slopes		1												1
		Centerville cobbly clay, 9 to 30 percent slopes		1												1
		Centerville-Delvar complex, 2 to 9 percent slopes		1												1
		Centerville-Delvar complex, 9 to 30 percent slopes		1												1
Cerini	SSURGO	Cerini clay loam, 0 to 2 percent slopes									1					1
		Cerini clay loam, 2 to 5 percent slopes									1					1
		Cerini clay loam, subsided, 0 to 5 percent slopes									1					1
		Cerini loam, 0 to 2 percent slopes									1					1
		Cerini loam, 2 to 5 percent slopes									1					1
		Cerini sandy loam, 0 to 2 percent slopes									1					1
		Cerini sandy loam, subsided, 0 to 5 percent slopes									1					1
Chaix	SSURGO	Chaix-Dome-Holland association, moderately steep	1													1
		Chaix-Dome-Holland association, steep	1													1
		Chaix-Dome-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Chaix-Dome-Rock outcrop complex, 50 to 75 percent slopes	1													1
		Chaix-Rock outcrop-Chawanakee complex, 30 to 50 percent slopes	1													1
		Chaix-Rock outcrop-Chawanakee complex, 50 to 75 percent slopes	1													1
		Chaix-Rock outcrop-Dome complex, 10 to 30 percent slopes	1													1
		Chaix-Rock outcrop-Dome complex, 30 to 50 percent slopes	1													1
		Chaix-Rock outcrop-Dome complex, 50 to 75 percent slopes	1													1
		Chaix-Wind River family-Tollhouse association, sloping	1													1
		Dome-Rock outcrop-Chaix complex, 30 to 50 percent slopes	1													1
		Dowe-Chaix-Rock outcrop association, moderately steep	1													1
Chaix 2	SSURGO	Chawanakee-Rock outcrop-Chaix complex, 5 to 30 percent slopes	1													1
Chaix family	SSURGO	CHAIX FAMILY, 35 TO 65 PERCENT SLOPES	1													1
		CHAIX FAMILY, 5 TO 35 PERCENT SLOPES	1													1
		CHAIX FAMILY, DEEP, 5 TO 45 PERCENT SLOPES	1													1
		CHAIX FAMILY-CHAIX FAMILY, DEEP COMPLEX, 15 TO 50 PERCENT SLOPES	1													1
		CHAIX-CHAWANAKEE FAMILIES-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES	1													1
		CHAIX-CHAWANAKEE FAMILIES-ROCK OUTCROP COMPLEX, 35 TO 65 PERCENT SLOPES	1													1
		CHAIX-HOLLAND FAMILIES COMPLEX, 15 TO 35 PERCENT SLOPES	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		CHAIX-HOLLAND FAMILIES COMPLEX, 35 TO 65 PERCENT SLOPES	1													1
CHAIX VARIANT	STATSGO	SIRRETTA-CHAIX VARIANT-ROCK OUTCROP (CA716)	1													1
Challenger	SSURGO	Challenger sand, 0 to 5 percent slopes									1					1
		Challenger-Leuhman complex, 0 to 9 percent slopes									1					1
Chanac	SSURGO	Chanac clay loam, 15 to 30 percent slopes		1												1
		Chanac clay loam, 2 to 9 percent slopes		1												1
		Chanac clay loam, 9 to 15 percent slopes		1												1
		Chanac-Badland complex, 30 to 50 percent slopes		1												1
		Chanac-Pleito complex, 2 to 5 percent slopes		1												1
		Chanac-Pleito complex, 30 to 50 percent slopes		1												1
		Chanac-Pleito complex, 5 to 30 percent slopes		1												1
		Chanac-Pleito complex, 9 to 30 percent slopes		1												1
		Chanac-Torriorthents, stratified association, 15 to 50 percent slopes		1												1
Chaqua	SSURGO	Chaqua loam, 2 to 8 percent slopes		1												1
Charcol family 2	SSURGO	Stecum-Charcol familes-Rock outcrop complex, 30 to 70 percent slopes	1													1
Chateau	SSURGO	Chateau clay, partially drained, 0 to 1 percent slopes							1							1
Chawanakee	SSURGO	Chawanakee-Rock outcrop-Chaix complex, 50 to 75 percent slopes	1													1
	STATSGO	CHAWANAKEE-ROCK OUTCROP-TOLLHOUSE (CA703)	1													1
Chawanakee 2	SSURGO	Chaix-Chawanakee-Rock outcrop complex, 5 to 30 percent slopes	1													1
		Chawanakee-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Rock outcrop-Chawanakee-Chaix complex, 15 to 30 percent slopes	1													1
		Rock outcrop-Chawanakee-Chaix complex, 30 to 50 percent slopes	1													1
		Rock outcrop-Chawanakee-Chaix complex, 50 to 75 percent slopes	1													1
Chawanakee family	SSURGO	Chawanakee family-Rock outcrop complex, 35 to 65 percent slopes	2													2
		Rock outcrop-Chawanakee family association, 35 to 65 percent slopes	2													2
Checkett	SSURGO	Mulett-Checkett families-Rock outcrop, granitic complex, 60 to 80 percent slopes	1													1
Chesaw	SSURGO	Chesaw-Nanny families association, steep			1											1
		Chesaw-Nanny families-Monache association, moderately steep			1											1
Chesaw family	SSURGO	Chesaw family, 0 to 5 percent slopes			1											1
		Chesaw family, 15 to 30 percent slopes			1											1
		Chesaw family, 5 to 15 percent slopes			1											1
		Chesaw-Hagga-Wursten families association, 0 to 5 percent slopes			1											1
		Chesaw family, 60 to 80 percent slopes			1											1
Chidago	SSURGO	Chidago gravelly loamy sand, 2 to 9 percent slopes		1												1
Chino	SSURGO	Chino clay loam, 0 to 1 percent slopes									1					1
		Chino clay loam, moderately saline-alkali, 0 to 1 percent slope									1					1
		Chino clay loam, slightly saline-alkali, 0 to 1 percent slopes									1					1
		Chino fine sandy loam									1					1
		Chino fine sandy loam, 0 to 1 percent slopes									1					1
		Chino fine sandy loam, moderately deep, saline-alkali									1					1
		Chino fine sandy loam, moderately saline-alkali, 0 to 1 percent slopes									1					1
		Chino fine sandy loam, saline-alkali									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Chino fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes									1					1
		Chino loam									1					1
		Chino loam, 0 to 1 percent slopes									1					1
		Chino loam, moderately saline-alkali, 0 to 1 percent slopes									1					1
		Chino loam, saline-alkali									1					1
		Chino loam, slightly saline-alkali, 0 to 1 percent slopes									1					1
		Chino loam, strongly saline-alkali, 0 to 1 percent slopes									1					1
		Chino sandy loam									1					1
		Chino sandy loam, saline-alkali									1					1
Chino variant	SSURGO	Chino variant clay loam, 0 to 2 percent slopes								1						1
Choice	SSURGO	Choice clay, 5 to 30 percent slopes	1													1
Chollawell	SSURGO	Chollawell gravelly loamy coarse sand, 2 to 5 percent slopes			1											1
		Chollawell gravelly loamy coarse sand, 5 to 15 percent slopes			1											1
		Chollawell gravelly loamy coarse sand, 5 to 20 percent slopes			1											1
		Chollawell gravelly sandy loam, 5 to 15 percent slopes			1											1
		Chollawell gravelly sandy loam, cobbly substratum, 5 to 15 percent slopes			1											1
		Chollawell, cobbly substratum-Chollawell, gravelly, complex, 2 to 15 percent slopes			1											1
		Chollawell-Inyo complex, 5 to 15 percent slopes			1											1
		Chollawell-Urban land complex, 0 to 15 percent slopes			1											1
		Chollawell-Urban land complex, 0 to 5 percent slopes			1											1
Chrisflat	SSURGO	Chrisflat very gravelly coarse sandy loam, 4 to 15 percent slopes			1											1
Chualar	SSURGO	Chualar sandy loam, 0 to 3 percent slopes		1												1
		Chualar sandy loam, 3 to 9 percent slopes		1												1
Chualar family	SSURGO	Chualar family-rock outcrop complex, 15 -30 percent slopes	1													1
		Chualar family-Rock outcrop complex, 50 to 75 percent slopes	1													1
		Rock outcrop-Chualar family complex, 50 to 75 percent slopes	1													1
Chuchupate	SSURGO	Chuchupate gravelly sandy loam, 50 to 75 percent slopes	1													1
Cibo	SSURGO	Cibo clay, 15 to 30 percent slopes	1													1
		Cibo clay, 3 to 15 percent slopes	1													1
		Cibo clay, 30 to 45 percent slopes	1													1
		Cibo clay, 30 to 50 percent slopes	1													1
		Cibo cobbly clay, 2 to 30 percent slopes	1													1
		Cibo cobbly clay, 30 to 75 percent slopes	1													1
		Cibo extremely rocky clay, 3 to 30 percent slopes	1													1
		Cibo extremely rocky clay, 30 to 45 percent slopes	1													1
		Cibo very rocky clay, 3 to 30 percent slopes	1													1
		Cibo very rocky clay, 30 to 45 percent slopes	1													1
		Cibo very rocky clay, 45 to 70 percent slopes	1													1
		Cibo-Rock outcrop complex, 15 to 50 percent slopes	1													1
CIENEBA	SSURGO	Cieneba-Rock outcrop complex, 15 to 50	1													1
		Cieneba-Rock outcrop complex, 15 to 75 percent slopes	1													1
		Cieneba-rock outcrop complex, 50 to 75 percent slopes	1													1
		Cieneba-Vista-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Rock outcrop-Cieneba complex, 30 to 50 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
	STATSGO	CIENEBA-ANDREGG-VISTA (CA507)									1					1
Cieneba 2	SSURGO	Cieneba-Rock outcrop complex, 15 to 75 percent slopes	1													1
		Rock outcrop-Cieneba complex, 50 to 75 percent slopes	1													1
		Rock outcrop-Cieneba-Chawanakee complex, 30 to 75 percent slopes	1													1
Ciervo	SSURGO	Ciervo clay, 0 to 2 percent slopes								1						1
		Ciervo clay, saline-sodic, wet, 0 to 1 percent slopes								1						1
		Ciervo, wet-Ciervo complex, saline-sodic, 0 to 1 percent slopes								1						1
Cinco	SSURGO	Cinco gravelly loamy sand, 50 to 75 percent slopes	1													1
Cinder cones	SSURGO	Cinder cones.		1												1
Clear Lake	SSURGO	Clear Lake clay, drained									1					1
Climara	SSURGO	Climara clay, 15 to 50 percent slopes	1													1
		Hentine-Climara association, 15 to 50 percent slopes	1													1
Cloudburst	SSURGO	Cloudburst-Murain association			1											1
		Cloudburst-Murain-Hardtil association			1											1
Coarsegold	SSURGO	Coarsegold fine sandy loam, 15 to 30 percent slopes	1													1
		Coarsegold fine sandy loam, 30 to 45 percent slopes	1													1
		Coarsegold fine sandy loam, 45 to 70 percent slopes	1													1
		Coarsegold fine sandy loam, 9 to 15 percent slopes	1													1
		Coarsegold loam, 15 to 30 percent slope	1													1
		Coarsegold loam, 30 to 50 percent slopes	1													1
		Coarsegold loam, 45 to 75 percent slopes	1													1
		Coarsegold loam, 8 to 30 percent slopes	1													1
		Coarsegold rocky fine sandy loam, 45 to 70 percent slopes	1													1
		Coarsegold rocky loam, 15 to 30 percent slopes	1													1
		Coarsegold rocky loam, 30 to 75 percent slopes	1													1
		Coarsegold-Auberry families-Rock outcrop association, 35 to 85 percent slopes	2													2
	STATSGO	COARSEGOLD-ROCK OUTCROP-FRIANT (CA314)	1													1
Coarsegold 2	SSURGO	Coarsegold-Rock outcrop complex, 15 to 50 percent slope s	1													1
COBATUS	STATSGO	COBATUS-WINNEDUMAH-NUMU (CA767)								1						1
Coldtree	SSURGO	Coldtree-Rubble land complex, 30 to 75 percent slopes	1													1
Colluvial land	SSURGO	Colluvial land	1													1
Colpien	SSURGO	Colpien loam, 0 to 2 percent slopes						1								1
Columbia	SSURGO	Columbia fine sandy loam, 0 to 1 percent slopes											1			1
		Columbia fine sandy loam, moderately deep and deep over hardpan 0 to 1 percent slopes									1					1
		Columbia fine sandy loam, moderately deep and deep over temple soils, 0 to 1 percent slopes									1					1
		Columbia loamy sand, 0 to 1 percent slopes											1			1
		Columbia loamy sand, over temple soils, 0 to 1 percent slopes									1					1
		Columbia sandy loam, 0 to 1 percent slopes											1			1
		Columbia sandy loam, moderately deep over sand, 0 to 1 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Columbia soils	SSURGO	Columbia soils, channeled, 0 to 8 percent slopes											1			1
Cometa	SSURGO	Cometa gravelly sandy loam, 3 to 8 percent slopes		1												1
		Cometa loam, 2 to 9 percent slopes		1												1
		Cometa loam, 3 to 8 percent slopes		1												1
		Cometa sandy loam, 15 to 30 percent slopes		1												1
		Cometa sandy loam, 3 to 9 percent slopes		1												1
		Cometa sandy loam, 9 to 15 percent slopes		1												1
		Cometa sandy loams, 0 to 3 percent slopes		1												1
		Cometa sandy loams, 3 to 8 percent slopes		1												1
		Cometa sandy loams, 8 to 15 percent slopes		1												1
		Cometa-San Joaquin sandy loams, 3 to 9 percent slopes		1												1
		Cometa-Whitney sandy loams, 3 to 8 percent slopes		1												1
		Cometa-Whitney sandy loams, 8 to 15 percent slopes		1												1
Conosta	SSURGO	Conosta clay loam, 2 to 8 percent slopes		1												1
Conway	SSURGO	Conway sandy loam, 0 to 8 percent slopes									1					1
		Conway-Aquents-Watterson complex, 0 to 2 percent slopes									1					1
		Conway-Conway cobbly-Chesaw family association, 0 to 15 percent slopes									1					1
		Conway-Roundval complex, 2 to 5 percent slopes									1					1
		Conway-Watterson complex, 0 to 2 percent slopes									1					1
Copus	SSURGO	Copus clay, partially drained, 0 to 1 percent slopes											1			1
		Copus silty clay, partially drained, 0 to 1 percent slopes											1			1
Corbett family	SSURGO	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes										1				1
		Nanamkin-Corbett families association, 30 to 60 percent slopes										1				1
		Vitrandic Xeropsamments-Corbett family-Rock outcrop complex, 15 to 30 percent slopes										1				1
Corning	SSURGO	Corning gravelly loam, 0 to 3 percent slopes		1												1
		Corning gravelly loam, 3 to 8 percent slopes		1												1
Corona	SSURGO	Corona silt loam						1								1
Cowood family	SSURGO	Charcol-Cowood families complex, 2 to 30 percent slopes	1													1
Cowspring	SSURGO	Cowspring gravelly loamy coarse sand, 15 to 50 percent slopes	1													1
Cowspring 2	SSURGO	Cowspring-Tips-Rock outcrop complex, 30 to 50 percent slopes	1													1
Cowtrack	SSURGO	Cowtrack loamy sand, 2 to 30 percent slopes										1				1
Cozetica	SSURGO	Cozetica gravelly coarse sand, 0 to 8 percent slopes										1				1
Cozetica family	SSURGO	Cozetica family, 0 to 30 percent slopes										1				1
Cozetica family 2	SSURGO	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes										1				1
Craneflat	SSURGO	Rock outcrop-Craneflat-Dystric Xerorthents complex, 30 to 65 percent slopes, mountain slopes, frigid	1													1
Crazymule	SSURGO	Crazymule-Canisrocks complex, 0 to 20 percent slopes, ground moraines, cryic			1											1
Credo	SSURGO	Credo family, 15 to 30 percent slopes	1													1
Credo family	SSURGO	Credo-Mascamp families complex, 15 to 60 percent slopes	1													1
Crosscreek	SSURGO	Crosscreek-Kai association, 0 to 2 percent slopes			1											1
Crouch	SSURGO	Auberry-Crouch-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Crouch coarse sandy loam, 15 to 30 percent slopes	1													1
		Crouch coarse sandy loam, 30 to 50 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Crouch-Rock outcrop complex, 15 to 50 percent slopes	1													1
Crouch 2	SSURGO	Crouch-Rock outcrop complex, 15 to 50 percent slopes	1													1
Cryoborolls	SSURGO	Cryoborolls bouldery-Cryoborolls-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Cryoborolls-Cryoborolls calcareous complex, 15 to 50 percent slopes	1													1
Cryorthents	SSURGO	Cryorthents-Rock outcrop complex, 30 to 50 percent slopes			1											1
Cryorthents 2	SSURGO	Rock outcrop-Cryorthents complex, 5 to 50 percent slopes	2													2
Cryumbrepts	SSURGO	Cryumbrepts very bouldery-Cryumbrepts very gravelly association, 2 to 30 percent slopes	1													1
Cumulic Endoaquolls	SSURGO	Cumulic Endoaquolls, frigid, 0 to 5 percent slopes								1						1
Currymountain	SSURGO	Currymountain-Rock outcrop-Quinto association, 50 to 75 percent slopes	1													1
Cutterbank	SSURGO	Cutterbank association, 15 to 60 percent slopes	1													1
		Dovecanyon-Cutterbank association, 4 to 50 percent slopes	1													1
Cuyama	SSURGO	Cuyama loam, 2 to 9 percent slopes		1												1
		Cuyama loam, 9 to 15 percent slopes		1												1
		Cuyama sandy loam, 15 to 30 percent slopes		1												1
		Cuyama sandy loam, 2 to 5 percent slopes		1												1
		Cuyama sandy loam, 5 to 15 percent slopes		1												1
		Cuyama-Urban land-Delano complex, 2 to 9 percent slopes		1												1
Cymric	SSURGO	Cymric loam, 5 to 30 percent slopes		1												1
Dab	SSURGO	Dab association	1													1
		Dab-Aspocket-Hawkridge association	1													1
Dam, Dump, Pit, or Quarry	SSURGO	ATRAVESADA-PITS, ASBESTOS COMPLEX, 2 TO 30 PERCENT SLOPES												1		1
		ATRAVESADA-PITS, ASBESTOS COMPLEX, 30 TO 65 PERCENT SLOPES												1		1
		Dam												1		1
		Dams												2		2
		Dumps												1		1
		Dumps, mine												1		1
		Dumps-Pits, complex, asbestos, 2 to 30 percent slopes												1		1
		Gravel pits												1		1
		Pits												1		1
		Pits and dumps												2		2
		Pits, gravel												1		1
		Pits-Delano-Oil-Waste land complex, 1 to 9 percent slopes												1		1
		Pits-Dumps complex, 0 to 50 percent slopes												1		1
		Quarries												1		1
		Sewage disposal pond												1		1
		Spillway												1		1
		Terrace escarpments												1		1
Damluis	STATSGO	DAMLUIS-BAPOS-LOS BANOS (CA365)		1												1
Daulton	SSURGO	Daulton fine sandy loam, 3 to 8 percent slopes	1													1
		Daulton fine sandy loam, 30 to 45 percent slopes	1													1
		Daulton fine sandy loam, 8 to 30 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Daulton loam, 8 to 30 percent slopes	1													1
		Daulton rocky fine sandy loam, 3 to 8 percent slopes	1													1
		Daulton rocky fine sandy loam, 30 to 45 percent slopes	1													1
Deadfoot	SSURGO	Deadfoot-Scodie-Rock outcrop complex, 30 to 60 percent slopes	1													1
Dechambeau	SSURGO	Dechambeau gravelly sandy loam, 0 to 2 percent slopes										1				1
		Dechambeau gravelly sandy loam, 2 to 4 percent slopes										1				1
		Dechambeau very gravelly-Dechambeau complex, 0 to 4 percent slopes										1				1
		Dechambeau-Nipintuck family-Warrior association, 2 to 30 percent slopes										1				1
		Dechambeau-Orecart complex, 2 to 15 percent slopes										1				1
Dechambeau family	SSURGO	Dechambeau family, 2 to 5 percnr slopes										1				1
Deerspring	SSURGO	Deerspring fine sandy loam, 0 to 5 percent slopes									1					1
		Deerspring loam, partially drained, 0 to 5 percent slopes									1					1
Dehy	SSURGO	Dehy loam, 0 to 2 percent slopes									1					1
		Dehy sandy loam, 0 to 2 percent slopes									1					1
		Dehy sandy loam, cool, 0 to 2 percent slopes									1					1
		Dehy sandy loam, loamy substratum, 0 to 2 percent slopes									1					1
		Dehy-Conway-Lubkin association, 0 to 9 percent slopes									1					1
		Dehy-Dehy calcareous complex, 0 to 2 percent slopes									1					1
		Dehy-Dehy saline complex, 0 to 2 percent slopes									1					1
Delaney family	SSURGO	Delaney family-Rock outcrop complex, 0 to 30 percent slopes		1												1
		Delaney family-Rock outcrop complex, 30 to 60 percent slopes		1												1
Delano	SSURGO	Delano loamy sand, 0 to 2 percent slopes		1												1
		Delano sandy clay loam, 0 to 2 percent slopes		1												1
		Delano sandy loam, 0 to 2 percent slopes		1												1
		Delano sandy loam, 1 to 5 percent slopes		1												1
		Delano sandy loam, 2 to 5 percent slopes		1												1
		Delano sandy loam, 5 to 9 percent slopes		1												1
		Delano-Cuyama-Premier complex, 5 to 30 percent slopes		1												1
		Delano-Urban land complex, 0 to 5 percent slopes		1												1
		Urban land-Delano complex, 0 to 2 percent slopes		1												1
Delano variant	SSURGO	Delano variant clay loam, 0 to 9 percent slopes		1												1
Deldota	SSURGO	Deldota clay, partially drained, 0 to 1 percent slopes							1							1
Delgado	SSURGO	Delgado gravelly sandy loam, 15 to 30 percent slopes	1													1
		Delgado sandy loam, 15 to 30 percent slopes	1													1
		Delgado sandy loam, 15 to 30 percent slopes, eroded	1													1
		Delgado sandy loam, 5 to 15 percent slopes	1													1
		Delgado sandy loam, 5 to 15 percent slopes, eroded	1													1
		Delgado sandy loam, 5 to 30 percent slopes	1													1
		Kettleman-Delgado-Mercey association, 5 to 15 percent slopes, eroded	1													1
Delhew	SSURGO	Delhew-Grandridge-Bakscratch association	1													1
		Grandridge-Delhew association	1													1
Delhi	SSURGO	Delhi loamy sand, 0 to 2 percent slopes									1					1
		Delhi loamy sand, 0 to 3 percent slopes									1					1
		Delhi loamy sand, 3 to 9 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Delhi loamy sand, moderately deep, 0 to 3 percent slopes									1					1
		Delhi sand, 0 to 3 percent slopes									1					1
		Delhi sand, 3 to 8 percent slopes									1					1
		Delhi sand, 3 to 9 percent slopes									1					1
		Delhi sand, moderately deep and deep over hardpan, 0 to 3 percent slopes									1					1
Dello	SSURGO	Dello loamy sand											1			1
		Dello sandy loam											1			1
Delpiedra	SSURGO	Delpiedra extremely stony loam, 30 to 45 percent slopes	1													1
		Delpiedra extremely stony loam, 45 to 70 percent slopes	1													1
		Delpiedra-Fancher extremely stony loams, 45 to 70 percent slopes	1													1
Delpiedra family 2	SSURGO	DELPIEDRA FAMILY-ROCK OUTCROP COMPLEX, 30 TO 60 PERCENT SLOPES	1													1
Delvar	SSURGO	Delvar clay loam, 2 to 9 percent slopes		1												1
		Delvar-Pleito complex, 9 to 30 percent slopes		1												1
DeStazo	SSURGO	DeStazo complex, 0 to 5 percent slopes						1								1
		DeStazo sandy loam, 0 to 2 percent slopes						1								1
		DeStazo sandy loam, 5 to 9 percent slopes, eroded						1								1
Dibble	SSURGO	Dibble-Geghus complex, 50 to 75 percent slopes	1													1
DiGiorgio	SSURGO	DiGiorgio sandy clay loam, 0 to 2 percent slopes									1					1
Dinuba	SSURGO	Dinuba fine sandy loam, 0 to 1 percent slopes						1								1
		Dinuba loam, 0 to 1 percent slopes						1								1
		Dinuba-El Peco fine sandy loams, moderately saline alkali, 0 to 1 percent slopes						1								1
		Dinuba-El Peco fine sandy loams, slightly saline alkali, 0 to 1 percent slopes						1								1
		Dinuba-El Peco loams, moderately saline alkali, 0 to 1 percent slopes						1								1
		Dinuba-El Peco loams, slightly saline alkali, 0 to 1 percent slopes						1								1
Division	SSURGO	Division-Numu complex, 0 to 2 percent slopes						1								1
Dogbed	SSURGO	Dogbed-Celeridge-Carshal association	1													1
Dome	SSURGO	Dome-Chaix association, moderately steep	1													1
		Dome-Chaix association, steep	1													1
		Dome-Chaix association, very steep	1													1
		Dome-Chaix-Rock outcrop association, steep	1													1
		Dome-Rock outcrop-Chaix complex, 50 to 75 percent slopes	1													1
		Holland-Dome-Chaix association, moderately steep	1													1
Domengine	SSURGO	Domengine-Lilten-Rock outcrop complex, 30 to 65 percent slopes	1													1
Dospalos	SSURGO	Dospalos clay loam, drained, 0 to 1 percent slopes									1					1
		Dospalos clay, drained, 0 to 1 percent slopes									1					1
Dovecanyon	SSURGO	Dovecanyon association, 2 to 8 percent slopes		1												1
		Dovecanyon loamy sand, 2 to 8 percent slopes		1												1
Driver	SSURGO	Driver coarse sandy loam, 0 to 2 percent slopes		1												1
Duco	SSURGO	Duco-Vetagrande-Pinenut association	1													1
Dunderberg	SSURGO	Dunderberg association		1												1
		Dunderberg-Conwayridge association		1												1
Dune land	SSURGO	Dune land								1						1
Dunul	SSURGO	Hartig-Dunul families-Rock outcrop, granitic association, 50 to 70 percent slopes	1													1
Durargidic Argixerolls	SSURGO	Gol family-Durargidic Argixerolls complex, 2 to 15 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)													Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Dystric Cryochrepts	SSURGO	Dystric Cryochrepts-Entic Cryumbrepts-Typic Cryorthents complex, 0 to 45 percent slopes			1											1
		Dystric Cryochrepts-Humic Cryaquepts association, 0 to 5 percent slopes			1											1
		Dystric Cryochrepts-Typic Cryorthents association, 0 to 30 percent slopes			1											1
Dystric Lithic Xerochrepts	SSURGO	ROCK OUTCROP-DYSTRIC LITHIC XEROCHREPTS COMPLEX, 65 TO 85 PERCENT SLOPES	1													1
Dystric Lithic Xerochrepts 2	SSURGO	Rock outcrop-Dystric Lithic Xerochrepts complex, 30 to 100 percent slopes	1													1
Dystric Xerochrepts	SSURGO	Dystric Xerochrepts and Typic Xerumbrepts, 20 to 50 percent slopes	1													1
Dystric Xerorthents	SSURGO	Dystric Xerorthents-Dystric Xerochrepts complex, 15 to 50 percent slopes	1													1
		Dystric Xerorthents-Dystric Xerochrepts-Rock outcrop complex, 40 to 85 percent slopes	1													1
		Dystric Xerorthents-Rock outcrop-Typic Xerumbrepts complex, 0 to 30 percent slopes	1													1
		Dystric Xerorthents-Typic Xerumbrepts-Rock outcrop complex, 15 to 45 percent slopes	1													1
		Rock outcrop-Craneflat-Dystric Xerorthents complex, 30 to 65 percent slopes, mountain slopes, frigid	1													1
		Typic Dystroxerepts-Badgerpass-Dystric Xerorthents complex, 15 to 45 percent slopes, mountain slopes, moraines, frigid	1													1
Dystric Xerorthents 2	SSURGO	Rock outcrop-Dystric Xerorthents complex, 30 to 75 percent slopes	1													1
		Rock outcrop-Dystric Xerorthents-Dystric Xerochrepts complex, 15 to 50 percent slopes	1													1
Eaglepass	SSURGO	Eaglepass-Rock outcrop complex, 30 to 75 percent slopes	1													1
ECLIPSE	STATSGO	ECLIPSE-MAZOURKA-CAJON (CA765)							1							1
Edmundston	SSURGO	Edmundston gravelly sandy loam, 30 to 50 percent slopes	1													1
		Edmundston gravelly sandy loam, 50 to 75 percent slopes	1													1
		Edmundston gravelly sandy loam, dry, 30 to 50 percent slopes	1													1
		Edmundston sandy loam, 30 to 50 percent slopes	1													1
		Edmundston-Godde-Tollhouse complex, 30 to 50 percent slopes	1													1
		Edmundston-Godde-Tollhouse complex, 50 to 75 percent slopes	1													1
		Edmundston-Tweedy-Walong association, 30 to 60 percent slopes	1													1
El Peco	SSURGO	El Peco fine sandy loam						1								1
		El Peco loam						1								1
		El Peco sandy loam						1								1
		El Peco-Dinuba fine sandy loams, strongly saline alkali, 0 to 1 percent slopes						1								1
		Fresno, El Peco, and Lewis soils, strongly saline-alkali, 0 to 1 percent slopes						1								1
Elaero	SSURGO	Elaero association	1													1
		Elaero-Granidry-Rock outcrop association	1													1
		Elaero-Lockgate-Granhogany association	1													1
Elkhills	SSURGO	Elkhills gravelly sandy loam, 15 to 50 percent slopes		1												1
		Elkhills gravelly sandy loam, 9 to 15 percent slopes		1												1
		Elkhills sandy loam, 15 to 30 percent slopes		1												1
		Elkhills sandy loam, 30 to 60 percent slopes		1												1

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Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Elkhills sandy loam, 5 to 15 percent slopes		1												1
		Elkhills sandy loam, 9 to 50 percent slopes, eroded		1												1
		Elkhills-Badlands complex, 30 to 50 percent slopes		1												1
		Elkhills-Bitterwater-Kettleman association, 9 to 50 per cent slopes		1												1
		Elkhills-Legray complex, 15 to 30 percent slopes		1												1
		Elkhills-Legray complex, 30 to 50 percent slopes		1												1
		Elkhills-Pyxo association, 15 to 50 percent slopes		1												1
		Elkhills-Torriorthents stratified complex, 9 to 15 perc ent slopes		1												1
		Elkhills-Torriorthents stratified, eroded complex, 15 t o 50 percent slopes		1												1
		Haplocambids, thick-Elkhills complex, 30 to 50 percent slopes		1												1
		Sodic Haplocambids, thick-Torriorthents, very thin, eroded-Elkhills complex, 15 to 50 percent slopes		1												1
		Welport-Elkhills association, 9 to 30 percent slopes		1												1
Elnido	SSURGO	Elnido sandy loam, drained, 0 to 1 percent slopes											1			1
Entic Cryumbrepts	SSURGO	ENTIC CRYUMBREPTS, 5 TO 50 PERCENT SLOPES	1													1
		Entic Cryumbrepts-Mollic Cryoboralfs association, 0 to 25 percent slopes	1													1
		Entic Cryumbrepts-Rock outcrop complex, 15 to 55 percent slopes			2											2
		Rock outcrop-Entic Cryumbrepts association, 25 to 60 percent slopes			2											2
Entic Haploxerolls	SSURGO	Entic Haploxerolls-Typic Cryoborolls association, 15 to 45 percent slopes	1													1
		Entic Haploxerolls-Typic Cryoborolls-Rock outcrop association, 50 to 85 percent slopes	1													1
Entic Xerumbrepts	SSURGO	Entic Xerumbrepts-Dystric Xerorthents-Rock outcrop association, 40 to 85 percent slopes	1													1
Epvip	SSURGO	Epvip-Domehill-Ashflat association	1													1
		Epvip-Hardnut-Vetash association	1													1
		Epvip-Vetash association	1													1
Erskine	SSURGO	Erskine-Hyte-Rock outcrop association, 30 to 60 percent slopes	1													1
Excelsior	SSURGO	Excelsior fine sandy loam, 0 to 1 percent slopes									1					1
		Excelsior fine sandy loam, saline-sodic, 0 to 1 percent slopes									1					1
		Excelsior loam, 0 to 2 percent slopes									1					1
		Excelsior loamy sand, sandy substratum, 0 to 1 percent slopes, eroded									1					1
		Excelsior sandy loam									1					1
		Excelsior sandy loam, 0 to 2 percent slopes									1					1
		Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes									1					1
Excelsior variant	SSURGO	Excelsior variant silt loam											1			1
Exeter	SSURGO	Exeter loam		1												1
		Exeter loam, 0 to 2 percent slopes		1												1
		Exeter loam, 2 to 5 percent slopes		1												1
		Exeter loam, 2 to 9 percent slopes		1												1
		Exeter sandy loam		1												1
		Exeter sandy loam, 0 to 2 percent slopes		1												1
		Exeter sandy loam, 2 to 9 percent slopes		1												1
		Exeter sandy loam, shallow		1												1
Fages	SSURGO	Fages clay, 0 to 1 percent slopes						1								1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Fallbrook	SSURGO	Fallbrook extremely rocky sandy loam, 30 to 45 percent slopes	1													1
		Fallbrook sandy loam, 15 to 30 percent slopes	1													1
		Fallbrook sandy loam, 3 to 9 percent slopes	1													1
		Fallbrook sandy loam, 30 to 45 percent slopes	1													1
		Fallbrook sandy loam, 30 to 50 percent slopes	1													1
		Fallbrook sandy loam, 9 to 15 percent slopes	1													1
		Fallbrook sandy loam, shallow, 3 to 9 percent slopes	1													1
		Fallbrook sandy loam, shallow, 9 to 30 percent slopes	1													1
		Fallbrook very rocky sandy loam, 3 to 30 percent slopes	1													1
		Fallbrook very rocky sandy loam, 30 to 70 percent slopes	1													1
		Fallbrook very rocky sandy loam, shallow, 3 to 30 percent slopes	1													1
		Fallbrook very rocky sandy loam, shallow, 30 to 70 percent slopes	1													1
		Fallbrook-Rock outcrop complex, 9 to 50 percent slopes	1													1
Fancher	SSURGO	Fancher extremely stony loam, 30 to 45 percent slopes	1													1
		Fancher extremely stony loam, 45 to 70 percent slopes	2													2
		Fancher-Blasingame complex, 30 to 45 percent	1													1
		Fancher-Blasingame complex, 45 to 70 percent slopes	1													1
Feethill	SSURGO	Feethill-Cibo-Cieneba complex, 15 to 30 percent slopes	1													1
		Feethill-Vista-Rock outcrop complex, 9 to 30 percent slopes	1													1
		Feethill-Vista-Walong association, 15 to 60 percent slopes	1													1
Feethill 2	SSURGO	Feethill-Vista-Rock outcrop complex, 9 to 30 percent slopes	1													1
Fez family	SSURGO	Fez family, 2 to 15 percent slopes										1				1
		Fez family-Vitrandic Xeropsamments complex, 0 to 30 percent slopes										1				1
		Fez family-Vitrandic Xeropsamments complex, 30 to 60 percent slopes										1				1
Finley	SSURGO	Finley family, 15 to 30 percent slopes	1													1
Fishsnooze 2	SSURGO	Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes	1													1
		Lithnip-Rock outcrop-Fishsnooze complex, 30 to 75 percent slopes, mountains, cryic	1													1
		Lithnip-Rock outcrop-Fishsnooze complex, 8 to 30 percent slopes	1													1
		Lithnip-Rock outcrop-Fishsnooze complex, 8 to 30 percent slopes, mountains, cryic	1													1
Flamen	SSURGO	Flamen loam, 0 to 2 percent slopes			1											1
Fluvaquentic Endoaquolls	SSURGO	Fluvaquentic Endoaquolls-Xerofluvents complex, 0 to 4 percent slopes											1			1
Fluvents	SSURGO	Fluvents, ponded											1			1
Forsell	SSURGO	Forsell-Snowtell-Rock outcrop complex, 8 to 30 percent slopes	1													1
Foster	SSURGO	Foster clay loam, 0 to 1 percent slopes									1					1
		Foster clay loam, moderately saline-alkali, 0 to 1 percent slopes									1					1
		Foster clay loam, slightly saline-alkali, 0 to 1 percent slopes									1					1
		Foster clay loam, strongly saline-alkali, 0 to 1 percent slopes									1					1
		Foster loam									1					1
		Foster loam, moderately deep									1					1
		Foster loam, moderately deep, saline-alkali									1					1
		Foster loam, saline-alkali									1					1
		Foster loams, 0 to 1 percent slopes									1					1
		Foster loams, moderately deep and deep over temple soils, 0 to percent slopes									1					1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Foster loams, moderately deep and deep over temple soils, moderately saline-Alkali, 0 to 1 percent slopes									1					1
		Foster loams, moderately saline-Alkali, 0 to 1 percent slopes									1					1
		Foster loams, sandy substratum, 0 to 1 percent slopes									1					1
		Foster loams, slightly saline-Alkali, 0 to 1 percent slopes									1					1
		Foster loams, strongly saline-Alkali, 0 to 1 percent slopes									1					1
		Foster sandy loam									1					1
		Foster-Chino loams, strongly saline alkali, 0 to 1 percent slopes									1					1
Franciscan	SSURGO	Franciscan gravelly sandy loam, 30 to 50 percent slopes	1													1
		Hentine-Franciscan-Rock outcrop complex, 30 to 65 percent slopes	1													1
FRANKTOWN	STATSGO	FRANKTOWN-ROCK OUTCROP-ALDI (CA865)	1													1
Frazier	SSURGO	Frazier gravelly sandy loam, 50 to 75 percent slopes	1													1
Fresno	SSURGO	Fresno and El Peco fine sandy loams, moderately saline-alkali, to 1 percent slopes			1											1
		Fresno and El Peco fine sandy loams, slightly saline-alkali, 0 to 1 percent slopes			1											1
		Fresno and El Peco fine sandy loams, strongly saline-alkali, 0 to 1 percent slopes			1											1
		Fresno and El Peco loams, moderately saline-alkali, 0 to 1 percent slopes			1											1
		Fresno and El Peco loams, slightly saline-alkali, 0 to 1 percen slopes			1											1
		Fresno and El Peco loams, strongly saline-alkali, 0 to 1 percen slopes			1											1
		Fresno clay loam			1											1
		Fresno fine sandy loam			1											1
		Fresno fine sandy loam, shallow			1											1
		Fresno sandy loam			1											1
		Fresno sandy loam, shallow			1											1
		Fresno, El Peco, and Chino soils, moderately saline-alkali, 0 t 1 percent slopes			1											1
		Fresno, El Peco, and Chino soils, slightly saline-alkali, 0 to percent slopes			1											1
		Fresno, El Peco, and Lewis soils, moderately saline-alkali, 0 t 1 percent slopes			1											1
		Fresno, El Peco, and Pozo soils, moderately saline-alkali, 0 to 1 percent slopes			1											1
		Fresno, El Peco, and Pozo soils, slightly saline-alkali, 0 to 1 percent slopes			1											1
		Fresno-Traver complex			1											1
Friant	SSURGO	Friant fine sandy loam, 30 to 45 percent slopes	1													1
		Friant fine sandy loam, 9 to 30 percent slopes	1													1
		Friant sandy loam, 50 to 75 percent slopes	1													1
		Friant-Rock outcrop complex, 15 to 75 percent slopes	1													1
Gabbvally	SSURGO	Gabbvally very stony loam, 15 to 50 percent slopes	1													1
		Gabbvally-Beelem-Rock outcrop association	1													1
GAMBOA	STATSGO	LOS GATOS-GAMBOA-HILT (CA544)	1													1
Gambogy	SSURGO	Gambogy loam, drained, 0 to 1 percent slopes									1					1
		Gambogy-Biggriz, saline-Sodic, association, drained, 0 to 2 percent slopes									1					1
Garces	SSURGO	Garces loam				1										1
		Garces loam, 0 to 1 percent slopes				1										1
		Garces silt loam				1										1
		Garces silt loam, hard substratum				1										1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Garces silt loam, moderately wet				1										1
	STATSGO	GARCES-PANOCHE-KIMBERLINA (CA351)			1											1
Gareck	SSURGO	Gareck-Garces association, 0 to 2 percent slopes				1										1
Garlet family	SSURGO	Stecum-Garlet families association, 5 to 30 percent slopes	1													1
Garlet family 2	SSURGO	Garlet-Cowood families-Rock outcrop association, 15 to 60 percent slopes	1													1
Garlock	SSURGO	Garlock loamy sand, 2 to 9 percent slopes		1												1
Gaviota	SSURGO	Gaviota-Borreguero-Rock outcrop complex, 40 to 75 percent slopes	1													1
		Gaviota-Rock outcrop complex, 50 to 75 percent slopes	1													1
Gaviota 2	SSURGO	Gaviota-Borreguero-Rock outcrop complex, 40 to 75 percent slopes	1													1
Geghus	SSURGO	Geghus-Selby complex, 30 to 75 percent slopes	1													1
		Geghus-Tecuya association, 30 to 75 percent slopes	1													1
		Geghus-Tecuya association, 9 to 30 percent slopes	1													1
		Geghus-Xeric Torriorthents, very gravelly association, 30 to 50 percent slopes	1													1
Gepford	SSURGO	Gepford clay, 0 to 1 percent slopes											1			1
		Gepford clay, partially drained											1			1
		Gepford clay, sandy substratum, partially drained											1			1
		Gepford silty clay, partially drained, 0 to 1 percent slopes											1			1
		Gepford silty clay, partially drained, sandy substratum , 0 to 1 percent slopes											1			1
	STATSGO	GEPFORD-WESTCAMP-ARMONA (CA383)									1					1
GERLE	STATSGO	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)			1											1
Gerle family	SSURGO	Gerle-Cagwin families association, 35 to 55 percent slopes			2											2
Getrail	SSURGO	Getrail-Vernado-Rock outcrop association, 15 to 65 percent slopes	1													1
Gewter	SSURGO	Gewter clay, 15 to 30 percent slopes	1													1
Glacierpoint	SSURGO	Canisrocks-Glacierpoint-Vitrandic Dystrocryepts complex, bouldery, 20 to 45 percent slopes, medial moraines, cryic			1											1
		Canisrocks-Rock outcrop-Glacierpoint complex, 30 to 70 percent slopes, mountain slopes, cryic			1											1
Glacierpoint 2	SSURGO	Canisrocks-Rock outcrop-Glacierpoint complex, 30 to 70 percent slopes, mountain slopes, cryic			1											1
		Rock outcrop-Canisrocks-Glacierpoint complex, 30 to 80 percent slopes, mountain slopes, joints, cryic			1											1
Glean family	SSURGO	Glean family, 0 to 50 percent slopes			1											1
		Rubble land-Nanamkin-Glean families complex, 30 to 80 percent slopes			1											1
GLENBROOK	STATSGO	GLENBROOK-LINHART-BEDELL (CA334)	1													1
GLENCARB	STATSGO	GLENCARB-BLUEPOINT-CAVE (CA934)									1					1
Godde	SSURGO	Godde-Tollhouse gravelly sandy loams, 30 to 75 percent slopes	1													1
GODECKE	STATSGO	DANGBERG-GODECKE-FETTIC (CA771)									1					1
Goldberg	SSURGO	Goldberg loam, drained				1										1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Goldberg loam, partially drained				1										1
Goldpeak	SSURGO	Goldpeak gravelly loamy sand, 2 to 8 percent slopes		1												1
		Goldpeak-Pinyonpeak association, 2 to 30 percent slopes		1												1
Goodale	SSURGO	Goodale loamy coarse sand, 5 to 15 percent slopes								1						1
		Goodale loamy coarse sand, moist, 5 to 15 percent slopes								1						1
		Goodale-Cartago complex, 0 to 2 percent slopes								1						1
		Goodale-Cartago complex, 2 to 5 percent slopes								1						1
		Goodale-Cartago complex, 5 to 15 percent slopes								1						1
		Goodale-Cartago complex, moist, 2 to 5 percent slopes								1						1
		Goodale-Cartago complex, moist, 5 to 15 percent slopes								1						1
Gorman	SSURGO	Gorman sandy loam, 15 to 30 percent slopes, eroded		1												1
		Gorman sandy loam, 15 to 50 percent slopes		1												1
		Gorman sandy loam, 30 to 50 percent slopes, eroded		1												1
		Gorman sandy loam, 9 to 15 percent slopes		1												1
		Gorman sandy loam, 9 to 15 percent slopes, eroded		1												1
	STATSGO	GORMAN-OAK GLEN-GAVIOTA (CA646)		1												1
Grandora	SSURGO	Grandora-Pinyonpeak association, 8 to 60 percent slopes	1													1
Grandridge	SSURGO	Grandridge-Delhew-Bullville association	1													1
Grangeville	SSURGO	Grangeville fine sandy loam											1			1
		Grangeville fine sandy loam, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, deep over alkali hardpan, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, deep over alkali hardpan, slightly saline-alkali, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, deep over hardpan, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, gravelly substratum									1					1
		Grangeville fine sandy loam, hard substratum									1					1
		Grangeville fine sandy loam, hard substratum, saline-alkali									1					1
		Grangeville fine sandy loam, moderately deep and deep over temple soils, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, over traver soils, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, over traver soils, slightly saline alkali, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, partially drained									1					1
		Grangeville fine sandy loam, saline alkali									1					1
		Grangeville fine sandy loam, saline-alkali, partially d rained									1					1
		Grangeville fine sandy loam, saline-alkali, partially drained									1					1
		Grangeville fine sandy loam, saline-sodic, 0 to 1 percent slopes									1					1
		Grangeville fine sandy loam, sandy substratum									1					1
		Grangeville fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes											1			1
		Grangeville fine sandy loam, water table									1					1
		Grangeville fine sandy loam, water table, saline alkali									1					1
		Grangeville sandy loam									1					1
		Grangeville sandy loam, 0 to 1 percent slopes											1			1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Grangeville sandy loam, drained, 0 to 2 percent slopes									1					1
		Grangeville sandy loam, saline alkali									1					1
		Grangeville sandy loam, saline-alkali									1					1
		Grangeville sandy loam, sandy substratum									1					1
		Grangeville sandy loam, slightly saline-alkali, 0 to 1 percent slopes											1			1
		Grangeville silt loam, drained									1					1
		Grangeville soils, channeled											1			1
	STATSGO	GRANGEVILLE-PACHAPPA-TRAVER (CA392)									1					1
Granhogany 2	SSURGO	Granhogany-Rock outcrop complex, 15 to 50 percent slopes	1													1
Granitic rock land	SSURGO	Granitic rock land	1													1
Granoso	SSURGO	Granoso gravelly loamy sand, 0 to 2 percent slopes											1			1
		Granoso loamy sand, 0 to 2 percent slopes											1			1
		Granoso loamy sand, 2 to 5 percent slopes											1			1
		Granoso loamy sand, loamy substratum, 0 to 2 percent slopes											1			1
		Granoso sandy loam, 0 to 2 percent slopes, overwash											1			1
		Kimberlina-Granoso, occasionally flooded-Riverwash complex, 0 to 5 percent slopes											1			1
Grazer	SSURGO	Exclose-Wisflat-Grazer association, 15 to 65 percent slopes	1													1
		Lilten-Grazer-Arburua association, 15 to 65 percent slopes	1													1
Grazer 2	SSURGO	Borreguero-Grazer-Rock outcrop association, 15 to 65 percent slopes	1													1
Green Bluff family	SSURGO	Morical-Supan-Greenbluff families association, 10 to 60 percent slopes	1													1
Greenfield	SSURGO	Greenfield coarse sandy loam, 0 to 3 percent slopes						1								1
		Greenfield coarse sandy loam, 3 to 8 percent slopes						1								1
		Greenfield fine sandy loam, 0 to 3 percent slopes						1								1
		Greenfield fine sandy loam, 3 to 8 percent slopes						1								1
		Greenfield sandy loam, 0 to 2 percent slopes						1								1
		Greenfield sandy loam, 0 to 3 percent slopes						1								1
		Greenfield sandy loam, 2 to 5 percent slopes						1								1
		Greenfield sandy loam, 2 to 9 percent slopes						1								1
		Greenfield sandy loam, 2 to 9 percent slopes, eroded						1								1
		Greenfield sandy loam, 3 to 8 percent slopes						1								1
		Greenfield sandy loam, 3 to 9 percent slopes						1								1
		Greenfield sandy loam, 9 to 15 percent slopes, eroded						1								1
		Greenfield sandy loam, moderately deep and deep over hardpan, 0 to 3 percent slopes						1								1
		Greenfield sandy loam, moderately deep and deep over hardpan, 3 to 8 percent slopes						1								1
		Greenfield sandy loam, moderately deep, 0 to 3 percent slopes						1								1
Guijarral	SSURGO	Guijarral complex, 2 to 9 percent slopes				1										1
		Guijarral gravelly sandy loam, 2 to 5 percent slopes				1										1
		Guijarral sandy loam, 0 to 2 percent slopes				1										1
		Guijarral sandy loam, 2 to 5 percent slopes				1										1
		Guijarral sandy loam, 2 to 9 percent slopes				1										1
		Guijarral-Klipstein complex, 2 to 5 percent slopes				1										1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Klipstein-Guijarral complex, 5 to 15 percent slopes				1										1
		Polvadero-Guijarral complex, 5 to 15 percent slopes				1										1
Gullied land	SSURGO	Gullied land	1													1
GUNSIGHT	STATSGO	GUNSIGHT-RILLITO-CHUCKAWALLA (CA927)			1											1
Haar family	SSURGO	Haar family, 2 to 15 percent slopes	1													1
		Haar family-Rock outcrop association, 15 to 50 percent slopes	1													1
Hades family	SSURGO	Hades-Ginser-Ola families association, 10 to 30 percent slopes	1													1
		Hades-Ginser-Ola families association, 30 to 60 percent slopes	1													1
Halfash	SSURGO	Halfash-Domehill association	1													1
Hanford	SSURGO	Hanford coarse sandy loam									1					1
		Hanford coarse sandy loam, 0 to 2 percent slopes									1					1
		Hanford coarse sandy loam, 2 to 9 percent slopes									1					1
		Hanford coarse sandy loam, 9 to 15 percent slopes									1					1
		Hanford coarse sandy loam, hard substratum									1					1
		Hanford fine sandy loam									1					1
		Hanford fine sandy loam, 0 to 1 percent slopes									1					1
		Hanford fine sandy loam, clay loam substratum									1					1
		Hanford fine sandy loam, gravelly substratum									1					1
		Hanford fine sandy loam, hard substratum									1					1
		Hanford fine sandy loam, moderately deep and deep over hardpan, 0 to 1 percent slopes									1					1
		Hanford fine sandy loam, silty substratum									1					1
		Hanford gravelly sandy loam									1					1
		Hanford gravelly sandy loam, 2 to 9 percent slopes									1					1
		Hanford gravelly sandy loam, 3 to 8 percent slopes									1					1
		Hanford loamy sand, 2 to 5 percent slopes, hummocky									1					1
		Hanford sandy loam									1					1
		Hanford sandy loam, 0 to 2 percent slopes									1					1
		Hanford sandy loam, 0 to 3 percent slopes									1					1
		Hanford sandy loam, 2 to 9 percent slopes									1					1
		Hanford sandy loam, benches									1					1
		Hanford sandy loam, clay loam substratum									1					1
		Hanford sandy loam, gravelly substratum									1					1
		Hanford sandy loam, hard substratum									1					1
		Hanford sandy loam, moderately deep and deep over hardpan, 0 to 3 percent slopes									1					1
		Hanford sandy loam, moderately deep over sand, 0 to 3 percent slopes									1					1
		Hanford sandy loam, sandy substratum									1					1
		Hanford sandy loam, silty substratum									1					1
	STATSGO	HANFORD-DELHI-TUJUNGA (CA307)									1					1
Hanford (ripperdan)	SSURGO	Hanford (ripperdan) fine sandy loam, moderately deep and deep over silt, 0 to 3 percent slopes									1					1
		Hanford (ripperdan) fine sandy loam, shallow varient, 0 to 3 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Haplargids	SSURGO	Haplargids-Torriorthents-Lithic Haplargids complex, 15 to 30 percent slopes	1													1
Haplocambids	SSURGO	Haplocambids, thick-Elkhills complex, 15 to 30 percent slopes		1												1
		Haplocambids, thick-Elkhills complex, 9 to 15 percent slopes		1												1
Haploxerolls	SSURGO	Haploxerolls, hilly		1												1
Hardtil	SSURGO	Hardtil-Alpineco-Rock outcrop complex, warm, 8 to 30 percent slopes			1											1
Harrel	SSURGO	Harrel sandy loam, 0 to 8 percent slopes									1					1
Harrisranch	SSURGO	Harrisranch-Bitcreek complex, 9 to 50 percent slopes	1													1
Hartig	SSURGO	Hartig-Packham families association, 30 to 60 percent slopes	1													1
		Rock outcrop, granitic-Brad-Hartig families complex, 30 to 60 percent slopes	1													1
Havala	SSURGO	Havala loam, 0 to 2 percent slopes									1					1
		Havala loam, 2 to 5 percent slopes									1					1
		Havala sandy loam, 0 to 2 percent slopes									1					1
		Havala sandy loam, 2 to 5 percent slopes									1					1
		Havala sandy loam, 5 to 9 percent slopes									1					1
		Havala sandy loam, 9 to 15 percent slopes									1					1
		Havala-Walong-Kernfork association, 1 to 20 percent slopes									1					1
Hawk	SSURGO	Hawk gravelly sandy loam, 9 to 15 percent slopes									1					1
Hawkinspeak	SSURGO	Hawkinspeak association	1													1
		Hawkinspeak-Angelwhine association	1													1
		Hawkinspeak-Angelwhine-Hawkridge association	1													1
		Hawkinspeak-Hawkridge association	1													1
		Hawkinspeak-Thiefridge association	1													1
Hawkridge	SSURGO	Hawkridge-Hawkinspeak association	1													1
		Hawkridge-Lithnip-Hawkinspeak association	1													1
HAWSLEY	STATSGO	HAWSLEY-JAWBONE-SPOOL (CA388)	1													1
Haypress family	SSURGO	Haypress family, 0 to 15 percent slopes	1													1
		Haypress family, 30 to 60 percent slopes	1													1
Haypress family 2	SSURGO	Haypress family-Rock outcrop association, 30 to 60 percent slopes	1													1
Heenlake	SSURGO	Heenlake-Loope association	1													1
		Heenlake-Loope-Chenhigh association	1													1
		Heenlake-Loope-Dogbed association	1													1
		Loope-Heenlake-Carshal association	1													1
Helendale	SSURGO	Helendale fine sandy loam, 0 to 1 percent slopes			1											1
		Helendale loamy sand, 0 to 2 percent slopes			1											1
		Helendale loamy sand, 2 to 5 percent slopes			1											1
		Helendale-Cajon complex, 0 to 5 percent slopes			1											1
		Helendale-Cajon complex, 2 to 5 percent slopes			1											1
		Helendale-Cajon complex, 2 to 9 percent slopes			1											1
		Helendale-Cajon complex, dry, 0 to 5 percent slopes			1											1
		Helendale-Randsburg complex, 0 to 5 percent slopes			1											1
		Helendale-Sparkhule complex, 2 to 15 percent slopes			1											1
Henneke	SSURGO	Henneke very gravelly clay loam, 15 to 50 percent slope s	1													1
		Henneke very gravelly clay loam, 5 to 15 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Hentine	SSURGO	Hentine-Rock outcrop complex, 30 to 65 percent slopes	1													1
Hesperia	SSURGO	Hesperia coarse sandy loam								1						1
		Hesperia coarse sandy loam, saline-alkali								1						1
		Hesperia fine sandy loam								1						1
		Hesperia fine sandy loam moderately deep								1						1
		Hesperia fine sandy loam, 0 to 2 percent slopes								1						1
		Hesperia fine sandy loam, 2 to 5 percent slopes								1						1
		Hesperia fine sandy loam, loamy substratum, 0 to 2 percent slopes								1						1
		Hesperia fine sandy loam, moderately deep, saline-alkali								1						1
		Hesperia fine sandy loam, saline alkali								1						1
		Hesperia loam, 0 to 2 percent slopes								1						1
		Hesperia loamy fine sand, 0 to 2 percent slopes								1						1
		Hesperia loamy fine sand, 0 to 2 percent slopes, hummocky								1						1
		Hesperia loamy sand, 0 to 2 percent slopes								1						1
		Hesperia sandy loam								1						1
		Hesperia sandy loam, 0 to 2 percent slopes								1						1
		Hesperia sandy loam, 2 to 5 percent slopes								1						1
		Hesperia sandy loam, 2 to 9 percent slopes								1						1
		Hesperia sandy loam, 5 to 9 percent slopes								1						1
		Hesperia sandy loam, moderately deep								1						1
		Hesperia sandy loam, moderately deep, saline-alkali								1						1
		Hesperia sandy loam, saline-alkali								1						1
		Hesperia sandy loam, shallow								1						1
		Hesperia sandy loam, shallow, saline-alkali								1						1
		Hesperia-Cartago complex, 0 to 5 percent slopes								1						1
	STATSGO	HESPERIA-ARVIN-WASIOJA (CA330)								1						1
Hessica	SSURGO	Hessica fine sandy loam, 0 to 2 percent slopes						1								1
		Hessica fine sandy loam, high elevation, 0 to 2 percent slopes						1								1
		Hessica sandy loam, 0 to 2 percent slopes						1								1
		Hessica-Eclipse association, 0 to 5 percent slopes						1								1
Hi Vista	SSURGO	Hi Vista sandy loam, 2 to 9 percent slopes	1													1
		Hi Vista-Machone-Randsburg complex, 2 to 15 percent slopes	1													1
Hideaway	SSURGO	Hideaway extremely stony loam, 3 to 15 percent slopes	1													1
		Hideaway very stony loam, 0 to 8 percent slopes	1													1
		Hideaway very stony loam, 15 to 30 percent slopes	1													1
Hildreth	SSURGO	Hildreth clay							1							1
		Hildreth sandy clay, 0 to 3 percent slopes							1							1
		Hildreth-San Joaquin complex, 0 to 8 percent slopes							1							1
Hillbrick	SSURGO	Hillbrick-Aido association, 30 to 50 percent slopes	1													1
		Hillbrick-Rock outcrop complex, 15 to 100 percent slopes	1													1
		Hillbrick-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Hillbrick-Rock outcrop complex, 15 to 75 percent slopes	1													1
		Hillbrick-Rock outcrop complex, 50 to 75 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Reward-Hillbrick association, 15 to 30 percent slopes	1													1
	STATSGO	HILLBRICK-KILMER-AIDO (CA344)	1													1
Hillbrick 2	SSURGO	Hillbrick-Rock outcrop complex, 50 to 75 percent slopes	1													1
HILT	STATSGO	HILT-ARRASTRE-MARPA (CA543)	1													1
Hoffman	SSURGO	Hoffman-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Hoffman-Tips-Pilotwell association, 15 to 50 percent slopes	1													1
Hoffman 2	SSURGO	Hoffman-Tips-Rock outcrop association, 20 to 45 percent slopes	1													1
Holland	SSURGO	Holland coarse sandy loam, 15 to 45 percent slopes	1													1
		Holland loam, 15 to 30 percent slopes	1													1
		Holland loam, 30 to 50 percent slopes	1													1
		Holland rocky sandy loam, 30 to 45 percent slopes	1													1
		Holland sandy loam, 15 to 30 percent slopes	1													1
		Holland sandy loam, 30 to 45 percent slopes	1													1
		Holland-Bohna-Cieneba association, very steep	1													1
		Holland-Hotaw association, moderately steep	1													1
		Holland-Hotaw association, steep	1													1
		Holland-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Shaver-Holland association, moderately steep	1													1
	STATSGO	HOLLAND-CHAIX-CHAWANAKEE (CA707)	1													1
		HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)	1													1
Holland family	SSURGO	HOLLAND FAMILY, 35 TO 65 PERCENT SLOPES	1													1
		HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES	1													1
		Holland-Chaix families complex, 35 to 65 percent slopes	2													2
		HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES	1													1
		HOLLAND-CHAWANAKEE FAMILES-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES	1													1
		HOLLAND-CHAWANAKEE FAMILIES COMPLEX, 35 TO 65 PERCENT SLOPES	1													1
Homeland	SSURGO	Homeland fine sandy loam, partially drained									1					1
Honcut	SSURGO	Honcut fine sandy loam, 0 to 3 percent slopes									1					1
		Honcut fine sandy loam, 3 to 9 percent slopes									1					1
		Honcut fine sandy loam, gravelly substratum, 0 to 3 percent slopes									1					1
		Honcut fine sandy loam, hard substratum, 0 to 3 percent slopes									1					1
		Honcut sandy loam, 0 to 2 percent slopes									1					1
		Honcut sandy loam, 2 to 5 percent slopes									1					1
Honova	SSURGO	Honova cobbly loamy sand, dry, 0 to 9 percent slopes		1												1
		Honova extremey cobbly loamy sand, 0 to 9 percent slopes		1												1
		Honova loamy coarse sand, 9 to 30 percent slopes		1												1
		Honova loamy coarse sand, slightly moist, 9 to 30 percent slopes		1												1
		Honova very cobbly loamy sand, 0 to 9 percent slopes		1												1
		Honova very cobbly loamy sand, 9 to 30 percent slopes		1												1
Hopeval	SSURGO	Cavebear-Hopeval complex, 2 to 8 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Hopeval complex, 0 to 2 percent slopes									1					1
		Hopeval complex, 2 to 8 percent slopes									1					1
		Hopeval-Corralval complex, 0 to 4 percent slopes									1					1
Hornitos	SSURGO	Hornitos gravelly sandy loam, 3 to 8 percent slopes	1													1
		Hornitos gravelly sandy loam, 8 to 30 percent slopes	1													1
		Hornitos very rocky sandy loam, 8 to 30 percent slopes	1													1
Hornitos 2	SSURGO	Rockland, hornitos soil material	1													1
Houser	SSURGO	Houser clay, partially drained									1					1
		Houser fine sandy loam, drained									1					1
		Houser fine sandy loam, drained, 0 to 1 percent slopes									1					1
		Houser fine sandy loam, partially drained									1					1
		Houser silty clay, drained, 0 to 1 percent slopes									1					1
Humic Dystroxerepts 2	SSURGO	Typic Dystroxerepts-Humic Dystroxerepts-Rock outcrop association, 15 to 45 percent slopes, mountain slopes, frigid	1													1
Hungrygulch	SSURGO	Hungrygulch-Kernville-Hogeye association, 30 to 60 percent slopes	1													1
Hymas	SSURGO	Hymas family-Rock outcrop, limestone association, 15 to 30 percent slopes	1													1
		Hymas family-Rock outcrop, limestone association, 30 to 60 percent slopes	1													1
		Rock outcrop, limestone-Hymas family association, 60 to 80 percent slopes	1													1
Hyte	SSURGO	Hyte-Erskine complex, 5 to 30 percent slopes	1													1
		Hyte-Erskine-Sorrell association, 30 to 60 percent slopes	1													1
Indian Creek	SSURGO	Indian Creek very gravelly sandy loam, 2 to 8 percent slopes			1											1
		Indian Creek-Haybourne association			1											1
	STATSGO	RENO-INDIAN CREEK-WASHOE (CA772)			1											1
Indiano	SSURGO	Indiano-Wortley complex, 30 to 60 percent slopes	1													1
Inland water areas	SSURGO	Water													1	1
Inyo	SSURGO	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes									1					1
		Inyo gravelly loamy coarse sand, 0 to 9 percent slopes, occasionally flooded									1		1			2
		Inyo gravelly loamy coarse sand, 5 to 15 percent slopes									1					1
		Inyo sand, 0 to 9 percent slopes									1					1
		Inyo sand, 9 to 15 percent slopes									1					1
		Inyo-Kelval complex, 0 to 5 percent slopes, occasionally flooded									1					1
		Inyo-Kelval-Urban land complex, 0 to 5 percent slopes									1					1
		Inyo-Poleta complex, 0 to 2 percent slopes			1											1
		Inyo-Riverwash complex, 0 to 5 percent slopes, frequently flooded											1			1
		Inyo-Tips-Rock outcrop complex, 5 to 30 percent slopes									1					1
		Inyo-Urban land complex, 0 to 15 percent slopes									1					1
		Inyo-Urban land complex, 0 to 5 percent slopes									1					1
		Inyo-Urban land complex, 0 to 9 percent slopes									1					1
Itme	SSURGO	Itme-Luning-Wardenot association	1													1
Jackflat	SSURGO	Jackflat-Grandridge association	1													1
Jawbone	SSURGO	Jawbone association, 30 to 60 percent slopes	1													1
		Jawbone association, 8 to 50 percent slopes	1													1
		Jawbone gravelly loamy sand, 15 to 75 percent slopes	1													1

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Jaybee family	SSURGO	Jaybee family, 9 to 30 percent slopes	1													1
		Pass Canyon-Jaybee families-Rock outcrop complex, 15 to 60 percrnt slopes	1													1
Jerryslu	SSURGO	Jerryslu loam				1										1
Jesbel	SSURGO	Jesbel clay, 0 to 3 percent slopes		1												1
		Jesbel gravelly clay loam, 0 to 3 percent slopes		1												1
		Jesbel gravelly clay, 3 to 8 percent slopes		1												1
Jobsis	SSURGO	Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Whittell-Jobsis-Rock outcrop complex, 30 to 75 percent slopes, mountains, cryic	1													1
Jobsis 2	SSURGO	Jobsis-Whittell-Rock outcrop complex, 8 to 30 percent slopes	1													1
Joecut	SSURGO	Joecut association	1													1
		Joecut-Heenlake association	1													1
Joenchris	SSURGO	Nohelp-Joenchris association			1											1
Jumpe family	SSURGO	Baldmountain-Rock outcrop-Jumpe family complex, 5 to 30 percent slopes	1													1
		Jumpe-Chumstick families-Rock outcrop complex, 30 to 60 percent slopes	1													1
Kanaka family	SSURGO	Kanaka family-Chawanakee variant-Rock outcrop association, steep	1													1
		Kanaka family-Chawanakee variant-Rock outcrop association, very steep	1													1
Kanaka family 2	SSURGO	Kanaka-Millerton families-Rock outcrop association, steep	1													1
Kecksroad	SSURGO	Kecksroad silty clay loam, 15 to 50 percent slopes	1													1
		Kecksroad silty clay loam, 5 to 15 percent slopes	1													1
Keefers	SSURGO	Keefers cobbly loam, 3 to 30 percent slopes	1													1
		Keefers loam, 3 to 15 percent slopes	1													1
Kelval	SSURGO	Kelval fine sandy loam, 0 to 2 percent slopes, occasionally flooded									1					1
		Kelval loamy sand, 0 to 2 percent slopes, occasionally flooded									1					1
		Kelval stony sandy loam, 0 to 2 percent slopes, occasionally flooded									1					1
		Kelval-Urban land complex, 0 to 2 percent slopes									1					1
Kenypeak	SSURGO	Kenypeak-Torriorthentic Haploxerolls association, skeletal, 30 to 60 percent slopes	1													1
		Kenypeak-Rubble land-Rock outcrop complex, 60 to 100 percent slopes	1													1
Kernfork	SSURGO	Kernfork complex, 0 to 5 percent slopes									1					1
		Kernfork fine sandy loam, 0 to 2 percent slopes, frequently flooded											1			1
		Kernfork fine sandy loam, 0 to 2 percent slopes, occasionally flooded											1			1
		Kernfork loam, saline-sodic, 0 to 2 percent slopes, occasionally flooded									1					1
Kernville	SSURGO	Kernville-Faycreek-Rock outcrop association, 30 to 60 percent slopes	1													1
		Kernville-Faycreek-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Kernville-Hogeye-Rock outcrop complex, 15 to 30 percent slopes	1													1
		Kernville-Hogeye-Southlake complex, 5 to 30 percent slopes	1													1
		Kernville-Hogeye-Southlake-Urban land complex, 0 to 30 percent slopes	1													1
Kernville 2	SSURGO	Kernville-Faycreek-Rock outcrop complex, 30 to 75 percent slopes	1													1
Kettleman	SSURGO	Delgado-Mercey-Kettleman association, 30 to 50 percent slopes	1													1
		Kettleman gravelly loam, 15 to 50 percent slopes	1													1
		Kettleman loam, 15 to 30 percent slopes	1													1
		Kettleman loam, 15 to 50 percent slopes	1													1
		Kettleman loam, 5 to 15 percent slopes	1													1
		Kettleman loam, 9 to 15 percent slopes	1													1
		Kettleman-Cantua complex, 30 to 50 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Kettleman-Delgado-Rock outcrop complex, 15 to 50 percen t slopes	1													1
		Mercey-Delgado-Kettleman association, 15 to 30 percent slopes	1													1
		Mercey-Delgado-Kettleman association, 15 to 30 percent slopes, eroded	1													1
		Mercey-Delgado-Kettleman association, 5 to 15 percent slopes	1													1
	STATSGO	KETTLEMAN-DELGADO-ELKHILLS (CA345)		1												1
Keyes	SSURGO	Keyes cobbly clay loam, 3 to 15 percent slopes		1												1
Kilburn family	SSURGO	Kilburn family-Watterson association, 4 to 15 percent slopes			1											1
		Kilburn family-Watterson-Watterson wet association, 4 to 30 percent slopes			1											1
		Kilburn family-Watterson-Xerofluvents association, 0 to 8 percent slopes			1											1
		Kilburn-Wrentham-Supan families association, 10 to 30 percent slopes	1													1
		Kilburn-Wrentham-Supan families association, 30 to 60 percent slopes	1													1
		Kilburn family, 5 to 30 percent slopes			1											1
		Kilburn-Nanamkin families association, 15 to 30 percent slopes			1											1
Kilmer	SSURGO	Kilmer-Hillbrick complex, 15 to 50 percent slopes	1													1
		Kilmer-Hillbrick complex, 50 to 75 percent slopes	1													1
Kimberlina	SSURGO	Kimberlina fine sandy loam, 0 to 2 percent slopes									1					1
		Kimberlina fine sandy loam, 2 to 5 percent slopes									1					1
		Kimberlina fine sandy loam, saline-alkali									1					1
		Kimberlina fine sandy loam, saline-alkali, 0 to 2 perce nt slopes									1					1
		Kimberlina fine sandy loam, saline-sodic, 0 to 2 percent slopes									1					1
		Kimberlina fine sandy loam, sandy substratum									1					1
		Kimberlina gravelly sandy loam, 0 to 2 percent slopes									1					1
		Kimberlina gravelly sandy loam, 2 to 5 percent slopes									1					1
		Kimberlina gravelly sandy loam, 5 to 9 percent slopes									1					1
		Kimberlina saline alkali-Garces complex									1					1
		Kimberlina sandy loam, 0 to 2 percent slopes									1					1
		Kimberlina sandy loam, 2 to 5 percent slopes									1					1
		Kimberlina sandy loam, 5 to 9 percent slopes									1					1
		Kimberlina-Urban land-Cajon complex, 0 to 2 percent slo pes									1					1
		Pyxo-Kimberlina-Cochora association, 2 to 15 percent slopes									1					1
	STATSGO	KIMBERLINA-WASCO-PANOCHE (CA347)									1					1
Kiona family	SSURGO	Sur-Kiona families complex, 15 to 60 percent slopes		1												1
Kiona family 2	SSURGO	Kiona family-Rock outcrop complex, 5 to 30 percent slopes		1												1
Kiote	SSURGO	Domehill-Kiote association	1													1
Koehn	SSURGO	Dovecanyon-Koehn association, 2 to 8 percent slopes								1						1
		Koehn association, 2 to 4 percent slopes								1						1
		Koehn coarse sand, 2 to 8 percent slopes								1						1
		Koehn sand, 2 to 4 percent slopes, frequently flooded								1						1
		Koehn sand, 2 to 8 percent slopes								1						1
Koontz	SSURGO	Koontz-Nosrac association	1													1
Kreyenhagen	SSURGO	Kreyenhagen loam, 50 to 75 percent slopes	1													1

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Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
KYBURZ	STATSGO	KYBURZ-ALDI-PORTOLA (CA866)	1													1
Labshaft family	SSURGO	Labshaft-Salt Chuck families-Rock outcrop complex, 15 to 60 percent slopes	1													1
Labshaft family 2	SSURGO	Labshaft family-Rock outcrop complex, 30 to 60 percent slopes	1													1
Lakash family	SSURGO	Lakash-Brantel families complex, 0 to 15 percent slopes										1				1
Lakeside	SSURGO	Lakeside clay loam, drained									1					1
		Lakeside clay, partially drained									1					1
		Lakeside loam, partially drained									1					1
Langston family	SSURGO	Langston family-Xeric Haplodurids association, 0 to 4 percent slopes			1											1
Las Posas	SSURGO	Las Posas loam, 15 to 30 percent slopes	1													1
		Las Posas loam, 30 to 50 percent slopes	1													1
		Las Posas loam, 9 to 15 percent slopes	1													1
		Las Posas-Rock outcrop complex, 9 to 50 percent slopes	1													1
Lathrop	SSURGO	Lathrop-Itme association	1													1
Lava flows	SSURGO	Taboose family-Lava flows complex, 5 to 30 percent slopes		1												1
Laval	SSURGO	Pleitito-Laval complex, 1 to 5 percent slopes									1					1
Lavaspring	SSURGO	Lavaspring complex, 0 to 4 percent slopes									1					1
		Lavaspring-Trespass complex, 0 to 4 percent slopes									1					1
Lavic	SSURGO	Lavic-Norob complex, 2 to 9 percent slopes						1								1
LAZAN	STATSGO	LAZAN-NUPART-POWMENT (CA785)	1													1
Lebec	SSURGO	Lebec rocky loam, 15 to 50 percent slopes	1													1
Ledford family	SSURGO	LEDFORD FAMILY-ENTIC XERUMBREPTS-ROCK OUTCROP ASSOCIATION, 10 TO 45 PERCENT SLOPES	1													1
Lemoore	SSURGO	Lemoore sandy loam, partially drained									1					1
Lerdo	SSURGO	Lerdo clay loam, saline-alkali, partially drained									1					1
		Lerdo complex, drained									1					1
Leroman	SSURGO	Leroman-Chenhigh-Celeridge association	1													1
Lethent	SSURGO	Lethent clay loam				1										1
		Lethent clay loam, 0 to 1 percent slopes				1										1
		Lethent clay loam, wet, 0 to 1 percent slopes				1										1
		Lethent fine sandy loam				1										1
		Lethent silt loam				1										1
		Lethent silt loam, 0 to 1 percent slopes				1										1
	STATSGO	LETHENT-NAHRUB-TWISSELMAN (CA350)			1											1
Leuhman	SSURGO	Leuhman complex, 0 to 2 percent slopes									1					1
		Leuhman loamy sand, 0 to 2 percent slopes									1					1
		Leuhman-Cajon-Leuhman, eroded, complex, 0 to 9 percent slopes									1					1
		Leuhman-Challenger complex, 0 to 9 percent slopes									1					1
		Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes									1					1
Lewis	SSURGO	Lewis clay loam			1											1
		Lewis loam, moderately saline-alkali, 0 to 1 percent slopes			1											1
		Lewis loam, slightly saline-alkali, 0 to 1 percent slopes			1											1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Lewkalb	SSURGO	Lewkalb sandy loam, 0 to 2 percent slopes		1												1
		Lewkalb, saline alkali-Milham-Kimberlina complex, 0 to 5 percent slopes		1												1
Lillis	SSURGO	Lillis clay, 0 to 1 percent slopes								1						1
Lilten	SSURGO	Lilten-Millsholm association, 30 to 65 percent slopes	1													1
Lithic Argixerolls	SSURGO	Lithic Argixerolls-Lithic Xerorthents-Rock outcrop complex, mesic, 50 to 75 percent slopes	1													1
Lithic Camborthids	SSURGO	Lithic Camborthids-Rock outcrop, sedimentary association, 15 to 30 percent slopes	1													1
		Lithic Camborthids-Rock outcrop, sedimentary association, 2 to 15 percnt slopes	1													1
		Lithic Camborthids-Rock outcrop. sedimentary association, 30 to 60 percent slopes	1													1
Lithic Cryorthents	SSURGO	Rock outcrop-Lithic cryothents-Nanamkin family association, 15 to 60 percent slopes	2													2
		Rubble land-Stecum family-Lithic Cryorthents asociation, 30 to 80 percent slopes	1													1
Lithic Cryorthents 2	SSURGO	Rubble land-Stecum family-Lithic Cryorthents asociation, 30 to 80 percent slopes	1													1
Lithic Torriorthents	SSURGO	Lithic Torriorthents-Badland complex, 15 to 75 percent slopes			1											1
		Lithic Torriorthents-Lithic Haplargids-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Lithic Torriorthents-Lithic Haplargids-Rock outcrop complex, cool, 30 to 75 percent slopes	1													1
		Lithic Torriorthents-Lithic Haplargids-Rock outcrop complex, warm, 30 to 75 percent slopes	1													1
Lithic Torriorthents 2	SSURGO	Rock outcrop-Lithic Torriorthents complex, 15 to 75 per cent slopes	1													1
Lithic Xeric Haplargids	SSURGO	Lithic Xeric Haplargids-Lithic Xeric Torriorthents complex, 30 to 75 percent slopes	1													1
		Lithic Xeric Haplargids-Lithic Xeric Torriorthents complex, dry, 30 to 75 percent slopes	1													1
Lithic Xeric Torriorthents	SSURGO	Lithic Xeric Torriorthents-Buscones complex, 15 to 50 percent slopes	1													1
		Lithic Xeric Torriorthents-Buscones complex, cool, 15 to 50 percent slopes	1													1
		Lithic Xeric Torriorthents-Buscones complex, dry, 15 to 50 percent slopes	1													1
		Lithic Xeric Torriorthents-Buscones complex, moist, 15 to 50 percent slopes	1													1
		Lithic Xeric Torriorthents-Xeric Torriorthents-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Lithic Xeric Torriorthents-Xeric Torriorthents-Rock outcrop complex, dry, 15 to 50 percent slopes	1													1
Lithic Xeropsamments	SSURGO	Lithic Xeropsamments-Rock outcrop association, 40 to 65 percent slopes	2													2
		Lithic Xeropsamments-Rock outcrop association, 5 to 40 percent slopes	2													2
		Rock outcrop-Lithic Xeropsamments complex, 15 to 45 percent slopes	2													2
Lithic Xeropsamments 2	SSURGO	Rock outcrop-Lithic Xeropsamments complex, 45 to 85 percent slopes	2													2
Lithic Xerorthents	SSURGO	Friant-Geghus-Lithic Xerorthents complex, 30 to 60 percent slopes	1													1
Lithnip	SSURGO	Lithnip-Hawkinspeak-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Rubble land-Lithnip-Rock outcrop association	1													1
Littlesignal	SSURGO	Littlesignal-Badlands-Cochora association, 15 to 75 percent slopes	1													1
		Littlesignal-Cochora association, 15 to 30 percent slopes	1													1
		Littlesignal-Cochora association, 30 to 50 percent slopes	1													1
Livermore family	SSURGO	Livermore family-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Livermore family-Rock outcrop complex, 50 to 75 percent slopes	1													1
Lodo family	SSURGO	Lodo-Modjeska-Botella families association, 10 to 70 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Lodo variant	SSURGO	Lodo variant clay loam, 15 to 50 percent slopes	1													1
Lodo variant 2	SSURGO	Rock outcrop-Lodo variant complex, 15 to 50 percent slo pes	1													1
		Rock outcrop-Lodo variant complex, 50 to 75 percent slo pes	1													1
Lokern	SSURGO	Lokern clay, drained									1					1
		Lokern clay, drained, 0 to 1 percent slopes									1					1
		Lokern clay, partially drained, 0 to 1 percent slopes									1					1
		Lokern clay, saline-alkali, drained									1					1
		Lokern clay, saline-alkali, partially drained									1					1
LOMOINE	STATSGO	ARMOINE-LOMOINE-PETSPRING (CA782)	1													1
LOOMER	STATSGO	LOOMER-KOONTZ-THEON (CA420)	1													1
Loope	SSURGO	Loope-Heenlake-Celeridge association	1													1
		Loope-Pinew-Heenlake association	1													1
Los Banos	SSURGO	Los Banos clay loam, 0 to 2 percent slopes		1												1
		Los Banos clay loam, 2 to 8 percent slopes		1												1
		Los Banos-Pleito complex, 2 to 8 percent slopes		1												1
Los Gatos	SSURGO	Xerolls, loamy-skeletal-Los Gatos complex, 30 to 75 percent slopes	1													1
Los Gatos family	SSURGO	Los Gatos-Kilburn-Panamint families association, 10 to 30 percent slopes	1													1
		Los Gatos-Kilburn-Panamint families association, 30 to 60 percent slopes	1													1
Los Osos variant	SSURGO	Los Osos variant clay loam, 30 to 50 percent slopes	1													1
		Los Osos variant-Rock outcrop-Lodo variant complex, 15 to 50 percent slopes	1													1
Los Robles	SSURGO	Los Robles clay loam, 0 to 3 percent slopes			1											1
		Los Robles loam, 0 to 3 percent slopes			1											1
		Los Robles loam, 3 to 9 percent slopes			1											1
		Los Robles loam, hard substratum, 2 to 9 percent slopes			1											1
		Los Robles sandy loam, 2 to 9 percent slopes			1											1
		Los Robles sandy loam, gravelly substratum 2 to 9 percent slopes			1											1
Los Robles family	SSURGO	Los Robles-Trigo families-Orthents association, 30 to 60 percent slopes			1											1
Loslobos	SSURGO	Loslobos loam, 50 to 100 percent slopes	1													1
		Loslobos sandy loam, moist, 40 to 85 percent slopes	1													1
		Loslobos-Calleguas association, 30 to 100 percent slopes	1													1
		Pleito-Emidio-Loslobos association, 15 to 75 percent slopes	1													1
Lososos variant	SSURGO	Los Osos variant clay loam, 30 to 50 percent slopes	1													1
Lostcannon	SSURGO	Lostcannon association			1											1
Lubkin	SSURGO	Lubkin gravelly loamy sand, 5 to 15 percent slopes		1												1
		Lubkin-Tinemaha complex, 2 to 5 percent slopes		1												1
		Lubkin-Tinemaha complex, 5 to 15 percent slopes		1												1
		Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes		1												1
Lucerne	SSURGO	Lucerne gravelly loamy sand, 2 to 5 percent slopes		1												1
		Lucerne gravelly sandy loam, 5 to 15 percent slopes		1												1
		Lucerne loamy fine sand, 0 to 2 percent slopes		1												1
LUMBERLY	STATSGO	LEDFORD-LUMBERLY-CANNELL (CA709)	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Lunder	SSURGO	Lunder very gravelly sandy loam, 2 to 8 percent slopes			1											1
		Lunder-Leviathan association			1											1
Machone	SSURGO	Machone-Randsburg complex, 2 to 9 percent slopes	1													1
		Machone-Randsburg-Hi Vista complex, 2 to 50 percent slope	1													1
Mackey	SSURGO	Abgese-Berent-Mackey families complex, 2 to 15 percent slopes	1													1
Madera	SSURGO	Madera clay loam		1												1
		Madera fine sandy loam, 0 to 3 percent slopes		1												1
		Madera loam		1												1
		Madera loam, 0 to 3 percent slopes		1												1
		Madera loam, saline-alkali		1												1
		Madera sandy loam		1												1
		Madera-Alamo complex, 0 to 1 percent slopes		1												1
		Madera-Lewis complex, slightly saline alkali, 0 to 1 percent slopes		1												1
Manzanar	SSURGO	Manzanar silt loam, 0 to 2 percent slopes						1								1
		Manzanar-Division association, 0 to 2 percent slopes						1								1
		Manzanar-Westguard association, 0 to 2 percent slopes						1								1
		Manzanar-Winnedumah association, 0 to 2 percent slopes						1								1
Marguerite	SSURGO	Marguerita loam, 0 to 3 percent slopes						1								1
		Marguerite clay loam, 0 to 3 percent slopes						1								1
		Marguerite clay loam, moderately saline-alkali, 0 to 3 percent slopes						1								1
		Marguerite loam, moderately saline-alkali, 0 to 3 percent slope						1								1
		Marguerite loam, slightly saline-alkali, 0 to 3 percent slopes						1								1
Martee 2	SSURGO	Martee-Rock outcrop complex, 30 to 60 percent slopes	1													1
MARTIS	STATSGO	MARTIS-EUER-INVILLE (CA854)		1												1
Mascamp	SSURGO	Mascamp=Sumine families complex, 40 to 60 percent slopes	1													1
Mascamp family	SSURGO	Basket-Mascamp families complex, 30 to 60 percent slopes	1													1
		Bearskin-Mascamp families complex, 15 to 30 percent slopes	1													1
Masonic	SSURGO	Masonic-Epvip-Domehill association	1													1
Mazourka	SSURGO	Mazourka hard substratum-Mazourka-Eclipse complex, 0 to 2 percent slopes								1						1
		Mazourka loamy sand, 0 to 2 percent slopes								1						1
		Mazourka loamy sand, 2 to 5 percent slopes								1						1
		Mazourka very gravelly sand, hard substratum, 2 to 5 percent slopes								1						1
		Mazourka-Cajon complex, 0 to 2 percent slopes								1						1
		Mazourka-Eclipse complex, 0 to 2 percent slopes								1						1
		Mazourka-Pokonahbe complex, 0 to 2 percent slopes								1						1
		Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes								1						1
		Mazourka-Slickspots-Eclipse complex, 0 to 2 percent slopes								1						1
MCCARTHY	STATSGO	MCCARTHY-LEDMOUNT-CROZIER (CA850)			1											1
McFarland	SSURGO	McFarland loam									1					1
MEISS	STATSGO	WACA-MEISS-ROCK OUTCROP (CA416)	1													1
Melga	SSURGO	Melga silt loam			1											1

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Mendi	SSURGO	Mendi-Hillbrick-Kilmer association, 30 to 50 percent sl opes	1													1
		Mendi-Hillbrick-Kilmer association, 50 to 75 percent sl opes	1													1
		Mendi-Hillbrick-Kilmer association, 9 to 30 percent slo pes	1													1
Merced	SSURGO	Merced clay								1						1
		Merced clay loam								1						1
		Merced clay loam, slightly saline								1						1
		Merced clay, moderately saline								1						1
		Merced clay, saline-alkali								1						1
		Merced clay, slightly saline								1						1
Mercey	SSURGO	Badland-Kettleman-Mercey association, 15 to 50 percent slopes	1													1
		Mercey loam, 15 to 30 percent slopes	1													1
		Mercey loam, 30 to 50 percent slopes	1													1
		Mercey loam, 5 to 15 percent slopes	1													1
		Mercey-Kettleman-Delgado complex, 30 to 50 percent slopes, eroded	1													1
Merlin	SSURGO	Toeja-Merlin families complex, 30 to 60 percent slopes	1													1
METZ	STATSGO	PANOCHE-METZ-STUTZVILLE (CA533)											1			1
Mexispring	SSURGO	Mexispring family-Rock oucrop, granitic association, 30 to 60 percent slopes	1													1
		Mexispring family-Rock outcrop, granitic asociation, 15 to 30 percent slopes	1													1
		Mexispring family-Rock outcrop, granitic association, 60 to 80 percent slopes	1													1
	STATSGO	MEXISPRING-ROCK OUTCROP-FERROBURRO (CA738)	1													1
Midas	SSURGO	Midas-Cath-Mackey families complex, 15 to 30 percent slopes	1													1
		Trocken-Midas families association, 5 to 60 percent slopes	1													1
Milagro	SSURGO	Milagro fine sandy loam, 0 to 1 percent slopes									1					1
		Milagro loamy sand, 0 to 1 percent slopes									1					1
Milham	SSURGO	Milham sandy loam, 0 to 2 percent slopes				1										1
		Milham sandy loam, 0 to 5 percent slopes				1										1
		Milham sandy loam, 2 to 5 percent slopes				1										1
		Milham sandy loam, 5 to 9 percent slopes		1		1										2
		Milham sandy loam, silty substratum				1										1
		Milham-Guijarral association, 5 to 15 percent slopes		1		1										2
Millerton	SSURGO	Millerton fine sandy loam, 30 to 45 percent slopes	1													1
		Millerton fine sandy loam, 45 to 70 percent slopes	1													1
		Millerton fine sandy loam, 45 to 70 percent slopes, eroded	1													1
		Millerton fine sandy loam, 9 to 30 percent slopes	1													1
		Millerton rocky fine sandy loam, 3 to 30 percent slopes	1													1
		Millerton very rocky fine sandy loam, 30 to 45 percent slopes	1													1
		Millerton very rocky fine sandy loam, 45 to 70 percent slopes	1													1
Millner	SSURGO	Millner-Millner stony association, 5 to 15 percent slopes									1					1
Millox	SSURGO	Millox clay loam, partially drained, 0 to 1 percent slopes						1								1
		Millox clay, partially drained, nonsaline, 0 to 1 percent slopes						1								1
		Millox, partially drained-Tennco complex, 0 to 1 percent slopes						1								1
		Millox-Zalvidea complex, partially drained, 0 to 1 percent slopes						1								1

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Millpond	SSURGO	Millpond-Lucerne complex, 0 to 2 percent slopes		1												1
		Millpond-Lucerne complex, 2 to 9 percent slopes		1												1
Millsholm	SSURGO	Millsholm clay loam, 15 to 50 percent slopes	1													1
		Millsholm clay loam, 50 to 75 percent slopes	1													1
Millsholm family	SSURGO	Millsholm-Exchequer-Stonyford families complex, 30 to 75 percent slopes	1													1
Millsholm variant	SSURGO	Millsholm variant-Ayar association, 50 to 75 percent sl opes	1													1
		Millsholm variant-Montara complex, 15 to 30 percent slo pes	1													1
		Millsholm variant-Rock outcrop complex, 15 to 50 percen t slopes	1													1
		Millsholm variant-Rock outcrop complex, 50 to 75 percen t slopes	1													1
Miscellaneous water	SSURGO	Miscellaneous water													1	1
Modesto family	SSURGO	Rincon-Livermore-Modesto families association, 30 to 60 percent slopes	1													1
Mohave	SSURGO	Mohave coarse sandy loam, 2 to 5 percent slopes		1												1
Mollic Cryoboralfs	SSURGO	Mollic Cryoboralfs-Typic Cryumbrepts association, 0 to 30 percent slopes	1													1
Monache	SSURGO	Monache-Typic Haploxerolls-Cagwin variant association, sloping								1						1
Monache variant	SSURGO	Cannell-Nanny family-Monache variant association, moderately steep								1						1
		Monache variant, drained, warm-Junipero family association, gently sloping								1						1
		Monache variant, drained-Monache association, gently sloping								1						1
Monibasin	SSURGO	Monibasin-Vermdig association	1													1
Monoridge	SSURGO	Monoridge-Exclose-Badland association, 30 to 65 percent slopes	1													1
Montara	SSURGO	Montara-Rock outcrop complex, 15 to 50 percent slopes	1													1
Montezuma	SSURGO	Montezuma-Brantel complex, 2 to 8 percent slopes								1						1
		Montezuma-Brantel complex, dry, 2 to 9 percent slopes								1						1
Montpellier	SSURGO	Montpellier coarse sandy loam, 15 to 30 percent slopes		1												1
		Montpellier coarse sandy loam, 3 to 8 percent slopes		1												1
		Montpellier coarse sandy loam, 8 to 15 percent slopes		1												1
		Montpellier coarse sandy loam, 9 to 15 percent slopes		1												1
Monvero	SSURGO	Monvero-Monoridge association, 15 to 50 percent slopes	1													1
Mopana	SSURGO	Mopana very gravelly ashy fine sandy loam, 0 to 8 percent slopes	1													1
Morey family	SSURGO	Morey family-Winnedumah-Rindge family complex, 0 to 2 percent slopes						1								1
Mottsville family	SSURGO	Mottsville family, 0 to 15 percent slopes						1								1
		Torriorthentic Haploxerolls-Mottsville association, 15 to 60 percent slopes						1								1
Mountom	SSURGO	Mountom-Conway-Roundval complex, 0 to 5 percent slopes									1					1
Movieflat	SSURGO	Movieflat loamy coarse sand, 2 to 9 percent slopes	1													1
		Movieflat-Rock outcrop complex, 2 to 9 percent slopes	1													1
Mt. Olive	SSURGO	Mt. Olive clay, 3 to 9 percent slopes	1													1
		Mt. Olive clay, 9 to 15 percent slopes	1													1
Mugatu	SSURGO	Mugatu fine sandy loam, 0 to 5 percent slopes									1					1
		Mugatu fine sandy loam, 5 to 30 percent slopes		1												1
Mulett	SSURGO	Finley-Moano-Mulett families complex, 5 to 40 percent slopes	1													1
		Washoe-Checkett-Mulett families association, 30 to 60 percent slopes	1													1
Murain	SSURGO	Murain association			1											1
Muranch family	SSURGO	Muranch family, 0 to 2 percent slopes								1						1
		Muranch family, 2 to 5 percent slopes								1						1
Muroc	SSURGO	Muroc sandy loam, 2 to 5 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Muroc sandy loam, 2 to 9 percent slopes	1													1
		Muroc-Randsburg complex, 2 t0 5 percent slopes	1													1
		Muroc-Randsburg complex, 5 to 15 percent slopes	1													1
		Muroc-Randsburg sandy loams, 5 to 9 percent slopes	1													1
Myers variant	SSURGO	Myers variant clay, 2 to 9 percent slopes			1											1
Nacimiento	SSURGO	Nacimiento loam, 30 to 50 percent slopes, eroded	1													1
		Nacimiento loam, 50 to 75 percent slopes, eroded	1													1
		Nacimiento-Kilmer complex, 30 to 50 percent slopes	1													1
		Nacimiento-Kilmer complex, 9 to 30 percent slopes	1													1
	STATSGO	NACIMIENTO-LOS OSOS-BALCOM (CA505)	1													1
Nahrub	SSURGO	Nahrub clay, drained									1					1
		Nahrub clay, partially drained									1					1
		Nahrub silt loam, overwashed, 0 to 1 percent slopes									1					1
		Nahrub, drained-Lethent complex									1					1
		Nahrub, partially drained-Lethent complex									1					1
Nanamkin family	SSURGO	Kilburn-Nanamkin families association, 5 to 15 percent slopes			1											1
		Nanamkin family, 2 to 60 percent slopes			1											1
		Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes			1											1
		Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes	1													1
Nanamkin family 2	SSURGO	Corbett-Nanamkin families-Rock outcrop complex, 30 to 60 percent slopes			1											1
		Nanamkin family-Rubble land complex, 60 to 80 percent slopes			1											1
Nanny family	SSURGO	Nanny family-Toem complex, 30 to 50 percent slopes	1													1
Narbaitz	SSURGO	Narbaitz-Pleito association, 5 to 30 percent slopes		1												1
Neuns family	SSURGO	HOLLAND-NEUNS FAMILIES ASSOCIATION, 15 TO 45 PERCENT SLOPES	1													1
		NEUNS FAMILY, 25 TO 60 PERCENT SLOPES	1													1
Neuralia	SSURGO	Neuralia sandy loam, 2 to 5 percent slopes		1												1
		Neuralia-Timosea-Typic Argidurids complex, 2 to 15 percent slopes		1												1
Neuske family	SSURGO	Neuske family, 15 to 30 percent slopes	1													1
NIRE	STATSGO	NIRE-KATYBLAY-ROCKABIN (CA778)	1													1
Nodhill	SSURGO	Cyvar-Nodhill complex, 5 to 15 percent slopes	1													1
		Cyvar-Nodhill-Pits, gypsiferous, complex, 5 to 15 percent slopes	1													1
Nord	SSURGO	Nord complex									1					1
		Nord fine sandy loam									1					1
		Nord fine sandy loam, 0 to 2 percent slopes									1					1
		Nord fine sandy loam, 0 to 2 percent slopes, rarely flooded									1					1
		Nord fine sandy loam, saline-alkali									1					1
		Nord loam									1					1
		Nord loam, saline-alkali									1					1
	STATSGO	NORD-GRANGEVILLE-CHINO (CA306)									1					1
Norob	SSURGO	Norob complex, 0 to 5 percent slopes, overblown			1											1
		Norob sandy loam, 0 to 2 percent slopes			1											1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Norob sandy loam, 2 to 5 percent slopes			1											1
		Norob-Helendale complex, 2 to 5 percent slopes			1											1
		Norob-Neuralia complex, 0 to 5 percent slopes			1											1
NOTNED	STATSGO	NOTNED-CELIO VARIANT-UMPA (CA711)			1											1
Numu	SSURGO	Numu loam, 0 to 2 percent slopes						1								1
Oak Glen	SSURGO	Oak Glen gravelly sandy loam, 2 to 9 percent slopes									1					1
		Oak Glen loam, 0 to 2 percent slopes									1					1
		Oak Glen loam, 2 to 9 percent slopes									1					1
		Oak Glen sandy loam, 2 to 9 percent slopes									1					1
	STATSGO	OAK GLEN-XEROFLUVENTS-DOTTA (CA545)									1					1
Oak Glen family	SSURGO	Oak Glen-Supan-Hagen families complex, 0 to 10 percent slopes									1					1
Oakdale	SSURGO	Oakdale sandy loam, 2 to 9 percent slopes		1												1
Ocashe	SSURGO	Hardnut-Ocashe association	1													1
Oest	SSURGO	Oest very bouldery sandy loam, 2 to 8 percent slopes			1											1
Ola family	SSURGO	Ola-Glean families complex, 15 to 30 percent slopes	1													1
Olac	SSURGO	Olac-Flex-Duco association	1													1
Oldriver	SSURGO	Oldriver loam, drained, 0 to 1 percent slopes									1					1
		Oldriver loam, partially drained, sodic, 0 to 1 percent slopes									1					1
Orecart	SSURGO	Orecart loamy sand, 0 to 4 percent slopes										1				1
		Orecart-Deepwell association, 2 to 15 percent slopes										1				1
		Orecart-Waford-Deepwell association, 2 to 15 percent slopes										1				1
		Orecart-Waford-Deepwell association, saline, 2 to 15 percent slopes										1				1
Orthents	SSURGO	Orthents-Fluvents complex, 0 to 15 percent slopes									1					1
		Orthents-Fluvents complex, dry, 0 to 15 percent slopes									1					1
Oxyaquic Cryorthents	SSURGO	Oxyaquic Cryorthents-Canisrocks complex, 0 to 15 percent slopes, ground moraines, wet/dry, cryic			1											1
Oxyaquic Dystrocryepts	SSURGO	Xeric Dystrocryepts-Canisrocks-Oxyaquic Dystrocryepts association, 10 to 40 percent slopes, aprons, lateral moraines, cryic	1													1
Pachappa	SSURGO	Pachappa fine sandy loam, 0 to 1 percent slopes							1							1
		Pachappa fine sandy loam, slightly saline-alkali, 0 to 1 percen slopes							1							1
		Pachappa loam							1							1
		Pachappa loam, moderately deep							1							1
		Pachappa loam, moderately deep, saline-alkali							1							1
		Pachappa loam, saline alkali							1							1
		Pachappa sandy loam, 0 to 1 percent slopes							1							1
		Pachappa sandy loam, moderately deep and deep over hardpan, slightly saline-alkali, 0 to 1 percent slopes							1							1
		Pachappa sandy loam, slightly saline-alkali, 0 to 1 percent slopes							1							1
Padres	SSURGO	Padres gravelly sandy loam, 2 to 9 percent slopes									1					1
		Padres sandy loam, 0 to 2 percent slopes									1					1
	STATSGO	PADRES-POLONIO-THOMHILL (CA582)									1					1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Pajuela	SSURGO	Pajuela-Whitewolf association, steep		1												1
Palazzo	SSURGO	Palazzo sandy loam, drained, 0 to 1 percent slopes											1			1
Panoche	SSURGO	Panoche clay loam, 0 to 2 percent slopes									1					1
		Panoche clay loam, 2 to 5 percent slopes									1					1
		Panoche clay loam, 5 to 9 percent slopes									1					1
		Panoche clay loam, saline-alkali									1					1
		Panoche clay loam, saline-alkali, 0 to 2 percent slopes									1					1
		Panoche clay loam, saline-alkali, moderately wet, 0 to 2 percent slopes									1					1
		Panoche clay loam, subsided, 0 to 5 percent slopes									1					1
		Panoche loam									1					1
		Panoche loam, 0 to 1 percent slopes									1					1
		Panoche loam, 0 to 2 percent slopes									1					1
		Panoche loam, 2 to 5 percent slopes									1					1
		Panoche loam, subsided, 0 to 5 percent slopes									1					1
		Panoche sandy loam, 0 to 2 percent slopes									1					1
		Panoche-Urban land complex, 0 to 2 percent slopes									1					1
	STATSGO	PANOCHE-CIERVO-CERINI (CA379)									1					1
		PANOCHE-MILHAM-KIMBERLINA (CA346)									1					1
Panoza	SSURGO	Panoza-Beam complex, 30 to 50 percent slopes	1													1
		Panoza-Beam complex, 50 to 75 percent slopes	1													1
Parkfield variant	SSURGO	Parkfield variant gravelly clay loam, 2 to 8 percent sl opes		1												1
Pasopeak 2	SSURGO	Pasopeak-Rock outcrop association, 30 to 75 percent slopes	1													1
Pass Canyon family	SSURGO	Pass Canyon family-Watterson-Rock outcrop association, 0 to 30 percent slopes	1													1
		Pass Canyon family-Xeric Torriorthents-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Rock outcrop-Abgese-Pass Canyon families complex, 15 to 30 percent slopes	1													1
Paver	SSURGO	Paver clay loam, 0 to 2 percent slopes							1							1
Pedcat	SSURGO	Pedcat loam, 0 to 2 percent slopes, eroded						1								1
PENELAS	STATSGO	PENELAS-UBEHEBE-RODAD (CA906)	1													1
Pergelic Cryoborolls	SSURGO	Pergelic Cryoborolls-Rock outcrop, metasedimentary association, 30 to 60 percent slopes	1													1
		Supervisor family-Rock oucrop, granitic-Pergelic Cryoborolls association, 60 to 80 percent slopes	1													1
Pernty	SSURGO	Pernty-Chen association	1													1
Pilotwell	SSURGO	Pilotwell-Xyno-Rock outcrop association, 30 to 60 percent slopes	1													1
Pilotwell 2	SSURGO	Pilotwell-Xyno-Rock outcrop association, 30 to 60 percent slopes	1													1
Pinew	SSURGO	Pinew-Carshal-Loope association	1													1
		Pinew-Rock outcrop association	1													1
Pinyonpeak	SSURGO	Goldpeak-Pinyonpeak-Wingap complex, 2 to 30 percent slopes	1													1
Pinyonpeak 2	SSURGO	Pinyonpeak-Wingap-Rock outcrop association, 8 to 30 percent slopes	1													1
Piper	SSURGO	Piper fine sandy loam, 0 to 9 percent slopes							1							1
		Piper sandy loam, 0 to 9 percent slopes							1							1

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Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Piper-Rossi complex, 0 to 9 percent slopes							1							1
Pitco	SSURGO	Pitco clay partially drained									1					1
Pizona	SSURGO	Pizona-Brantel association, 2 to 50 percent slopes										1				1
Pizona family	SSURGO	Wrango-Pizona families complex, 5 to 30 percent slopes		1												1
Playa	SSURGO	Playa											1			1
Playas	SSURGO	Playas											1			1
	STATSGO	PLAYAS-CAJON-GLENDALE (CA650)									1					1
		PLAYAS-ROSITAS-MELOLAND (CA923)									1					1
		ROSAMOND-ROSAMOND VARIANT-PLAYAS (CA339)									1					1
Pleitito	SSURGO	Pleitito-Laval complex, 5 to 15 percent slopes									1					1
Pleito	SSURGO	Pleito gravelly clay loam, 15 to 30 percent slopes		1												1
		Pleito gravelly sandy clay loam, 2 to 5 percent slopes		1												1
		Pleito sandy clay loam, 0 to 2 percent slopes		1												1
		Pleito sandy clay loam, 2 to 5 percent slopes		1												1
		Pleito sandy clay loam, 5 to 9 percent slopes		1												1
		Pleito sandy clay loam, 9 to 30 percent slopes		1												1
		Pleito sandy clay loam, 9 to 50 percent slopes		1												1
		Pleito-Chanac sandy clay loams, 15 to 30 percent slopes		1												1
		Pleito-Chanac sandy clay loams, 5 to 9 percent slopes		1												1
		Pleito-Chanac-Raggulch complex, 5 to 30 percent slopes		1												1
		Pleito-Delvar complex, 2 to 15 percent slopes		1												1
		Pleito-Loslobos, 15 to 75 percent slopes		1												1
		Pleito-Trigo-Chanac complex, 15 to 50 percent slopes		1												1
Plutos family	SSURGO	Plutos family-Brantel association, 2 to 8 percent slopes		1												1
		Plutos family-Cashbaugh-Rock outcrop association, 0 to 30 percent slopes		1												1
		Plutos family-Cashbaugh-Rock outcrop association, 30 to 50 percent slopes		1												1
		Plutos family-Rock outcrop association, 0 to 30 percent slopes		1												1
Plutos family 2	SSURGO	Plutos family-Cashbaugh-Rock outcrop association, 0 to 30 percent slopes		1												1
Pokonahbe	SSURGO	Pokonahbe loamy fine sand, 0 to 2 percent slopes						1								1
		Pokonahbe-Numu complex, 0 to 2 percent slopes						1								1
		Pokonahbe-Rindge family association, 0 to 5 percent slopes						1								1
Poleta	SSURGO	Poleta loamy sand, 0 to 2 percent slopes			1											1
		Poleta-Mazourka complex, 0 to 2 percent slopes			1											1
		Poleta-Mazourka-Eclipse complex, 0 to 2 percent slopes			1											1
		Poleta-Mazourka-Slickspots complex, 0 to 2 percent slopes			1											1
		Poleta-Tinemaha complex, 0 to 5 percent slopes			1											1
Pollasky	SSURGO	Pollasky fine sandy loam, 2 to 9 percent slopes		1												1
		Pollasky fine sandy loam, 9 to 15 percent slopes		1												1
		Pollasky sandy loam, 15 to 30 percent slopes		1												1
		Pollasky sandy loam, 2 to 9 percent slopes		1												1
		Pollasky sandy loam, 9 to 15 percent slopes		1												1
		Pollasky-Montpellier complex, 15 to 30 percent slopes		1												1
		Pollasky-Montpellier complex, 9 to 15 percent slopes		1												1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Pollasky-Rocklin sandy loams, 3 to 15 percent slopes		1												1
Polonio	SSURGO	Polonio loam, 2 to 9 percent slopes								1						1
Polvadero	SSURGO	Milham-Polvadero complex, organic surface, 0 to 5 percent slopes		1												1
		Polvadero sandy loam, 0 to 2 percent slopes		1												1
		Polvadero sandy loam, 2 to 5 percent slopes		1												1
Pond	SSURGO	Pond fine sandy loam						1								1
		Pond fine sandy loam, moderately deep						1								1
		Pond loam						1								1
		Pond loam, moderately deep						1								1
		Pond sandy loam						1								1
		Pond sandy loam, moderately deep						1								1
		Pond silty clay loam						1								1
		Pond-Oban complex						1								1
Porterville	SSURGO	Porterville clay, 0 to 2 percent slopes		1												1
		Porterville clay, 0 to 3 percent slopes		1												1
		Porterville clay, 2 to 9 percent slopes		1												1
		Porterville clay, 3 to 15 percent slopes		1												1
		Porterville clay, 3 to 8 percent slopes		1												1
		Porterville clay, 5 to 9 percent slopes		1												1
		Porterville clay, 9 to 15 percent slopes		1												1
		Porterville cobbly clay, 2 to 15 percent slopes		1												1
		Porterville cobbly clay, 3 to 15 percent slopes		1												1
		Porterville cobbly clay, 5 to 9 percent slopes		1												1
		Porterville rocky clay, 3 to 8 percent slopes		1												1
		Porterville very cobbly clay, 0 to 30 percent slopes		1												1
Positas	SSURGO	Positas gravelly loam, 3 to 9 percent slopes		1												1
		Positas gravelly loam, 30 to 45 percent slopes		1												1
		Positas gravelly loam, 9 to 30 percent slopes		1												1
		Positas-Bitcreek complex, 2 to 9 percent slopes		1												1
Posochanet	SSURGO	Posochanet clay loam, saline-sodic, 0 to 2 percent slopes									1					1
		Posochanet clay loam, saline-sodic, wet, 0 to 1 percent slopes									1					1
		Posochanet silt loam, 0 to 2 percent slopes									1					1
		Posochanet silt loam, saline-sodic, 0 to 1 percent slopes									1					1
		Posochanet silty clay loam, saline-sodic, 0 to 1 percent slopes									1					1
		Posochanet-Posochanet, partially reclaimed association, 0 to 1 percent slopes									1					1
Pottinger	SSURGO	Pottinger very shaly clay loam, 2 to 9 percent slopes									1					1
		Pottinger very shaly clay loam, 9 to 15 percent slopes									1					1
Powment family 2	SSURGO	Rock outcrop-Powment complex, 60 to 90 percent slopes	1													1
		Rock outcrop-Powment family complex, 30 to 60 percent slopes	1													1
Pozo	SSURGO	Pozo clay loam, 0 to 1 percent slopes			1											1
		Pozo clay loam, moderately saline, 0 to 1 percent slopes			1											1
		Pozo clay loam, slightly saline, 0 to 1 percent slopes			1											1
		Pozo clay loam, strongly saline, 0 to 1 percent slopes			1											1
		Pozo loam, 0 to 1 percent slopes			1											1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Pozo loam, moderately saline, 0 to 1 percent slopes			1											1
		Pozo loam, slightly saline, 0 to 1 percent slopes			1											1
		Pozo loam, strongly saline, 0 to 1 percent slopes			1											1
Premier	SSURGO	Chanac-Pleito-Premier association, 20 to 60 percent slopes		1												1
		Premier coarse sandy loam, 2 to 5 percent slopes				1										1
		Premier coarse sandy loam, 5 to 9 percent slopes		1												1
		Premier coarse sandy loam, 9 to 15 percent slopes		1												1
		Premier sandy loam, 0 to 2 percent slopes				1										1
		Premier sandy loam, 2 to 5 percent slopes		1												1
		Premier-Durorthids association, 15 to 30 percent slopes		1												1
		Premier-Durorthids association, 9 to 15 percent slopes		1												1
		Premier-Haplodurids complex, 2 to 9 percent slopes		1												1
		Premier-Haplodurids complex, 9 to 30 percent slopes		1												1
Preston	SSURGO	Preston family, 1 to 15 percent slopes									1					1
Preston family	SSURGO	Preston-Pass Canyon families association, 30 to 60 percent slopes	1													1
Preston family 2	SSURGO	Preston family-Rock outcrop complex, 30 to 60 percent slopes	1													1
Psamments	SSURGO	Psamments-Xerolls complex, nearly level											1			1
PUMEL	SSURGO	Pumel-Rock outcrop association	1													1
	STATSGO	PUMEL-BLAPPERT-URIPNES (CA787)	1													1
Pyxo	SSURGO	Pyxo-Cochora association, 15 to 30 percent slopes	1													1
		Pyxo-Cochora-Badlands association, 15 to 75 percent slopes	1													1
		Pyxo-Elkhills association, 30 to 50 percent slopes	1													1
Quinto	SSURGO	Quinto-Millsholm-Rock outcrop complex, 40 to 75 percent slopes	1													1
Quonal	SSURGO	Quonal-Lewis association, 0 to 2 percent slopes			1											1
Railcity family 2	SSURGO	Chesaw-Railcity families-Rock outcrop complex, 15 to 60 percent slopes	1													1
		Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Railcity family-Rock outcrop complex, 2 to 15 percent slopes	1													1
		Rock outcrop-Railcity family association, 30 to 90 percent slopes	1													1
Rambla	SSURGO	Rambla loamy sand, drained									1					1
RAMELLI	STATSGO	RAMELLI-BECKWOURTH-LOYALTON (CA165)									1					1
Ramona	SSURGO	Ramona coarse sandy loam, 2 to 5 percent slopes		1												1
		Ramona coarse sandy loam, 5 to 9 percent slopes		1												1
		Ramona coarse sandy loam, 9 to 15 percent slopes		1												1
		Ramona gravelly sandy loam, 2 to 9 percent slopes		1												1
		Ramona gravelly sandy loam, 9 to 30 percent slopes		1												1
		Ramona loam		1												1
		Ramona loam, 2 to 5 percent slopes		1												1
		Ramona loam, gravelly substratum		1												1
		Ramona loam, hard substratum		1												1
		Ramona sandy loam		1												1
		Ramona sandy loam, 0 to 3 percent slopes		1												1
		Ramona sandy loam, 3 to 8 percent slopes		1												1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Ramona sandy loam, 9 to 30 percent slopes, eroded		1												1
		Ramona sandy loam, deep over hardpan, 0 to 3 percent slopes		1												1
		Ramona sandy loam, hard substratum		1												1
Randsburg	SSURGO	Randsburg sandy loam, 2 to 15 percent slopes	1													1
		Randsburg-Machone-Rock outcrop complex, 4 to 50 percent slopes	1													1
		Randsburg-Rock outcrop complex, 15 to 50 percent slopes	1													1
	STATSGO	RANDSBURG-MUROC-HI VISTA (CA341)	1													1
Rankor	SSURGO	Rankor-Edmundston-Tweedy complex, 30 to 60 percent slopes	1													1
		Rankor-Edmundston-Tweedy complex, 5 to 30 percent slopes	1													1
RATLEFLAT	STATSGO	RATLEFLAT-BREKO-JENNESS FAMILY (CA795)			1											1
Ravenswood	SSURGO	Ravenswood-Wahguyhe-Brier association	1													1
Raynor	SSURGO	Raynor clay, 0 to 3 percent slopes		1												1
		Raynor clay, 3 to 8 percent slopes		1												1
Redding	SSURGO	Redding gravelly loam, 0 to 3 percent slopes		1												1
		Redding gravelly loam, 3 to 15 percent slopes		1												1
		Redding gravelly loam, shallow, 3 to 9 percent slopes		1												1
		Redding gravelly sandy loam, 3 to 15 percent slopes		1												1
		Redding-Raynor complex, 3 to 15 percent slopes		1												1
Reefridge	SSURGO	Reefridge clay, 15 to 30 percent slopes	1													1
		Reefridge clay, 5 to 15 percent slopes	1													1
Reliz 2	SSURGO	Reliz-Gewter-Rock outcrop association, 25 to 75 percent slopes	1													1
Remnoy	SSURGO	Remnoy silt loam, 0 to 2 percent slopes			1											1
		Remnoy very fine sandy loam			1											1
Rescue variant	SSURGO	Rescue variant loam, 15 to 30 percent slopes	1													1
		Rescue variant loam, 30 to 50 percent slopes	1													1
Reward	SSURGO	Reward shaly loam, 15 to 30 percent slopes	1													1
		Reward shaly loam, 30 to 50 percent slopes	1													1
		Reward-Hillbrick association, 30 to 50 percent slopes	1													1
Rienhakel	SSURGO	Rienhakel sand, 0 to 2 percent slopes						1								1
Riverwash	SSURGO	Goodale-Riverwash complex, 0 to 5 percent slopes											1			1
		Riverwash											2			2
		Xerofluvents-Haploxerepts-Riverwash complex, 0 to 15 percent slopes											1			1
Roacha	SSURGO	Altamont-Roacha-Borreguero association, 15 to 50 percent slopes	1													1
		Roacha silty clay loam, 30 to 50 percent slopes	1													1
		Roacha-Millsholm-Lilten association, 30 to 65 percent slopes	1													1
ROCK OUTCROP	SSURGO	Basic igneous rock land	1													1
		Gabbvally-Brier-Rock outcrop association	1													1
		Harrisranch-Rock outcrop complex, 50 to 75 percent slopes	1													1
		Rock outcrop	2													2
		Rock outcrop-Rubbleland complex.	1													1
		Basket-Bondranch families-Rock outcrop, metasedimentary complex, 30 to 60 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Berent family-Rock outcrop, granitic complex, 5 to 30 percent slopes	1													1
		Hartig family-Rock outcrop, granitic complex, 30 to 60 percent slopes	1													1
		Mascamp-Sumine families-Rock outcrop, metasedimetary complex, 30 to 60 percent slopes	1													1
		Moano family-Rock outcrop. sedimentary complex, 60 to 80 percent slopes	1													1
		Rock outcrop, granitic-Brad-hartig families complex, 60 to 80 percent slopes	1													1
		Sanpete-Theriot families-Rock outcrop, limestone association, 60 to 80 percent slopes	1													1
		Swift Creek family-Rock outcrop, limestone complex, 15 to 30 percent slopes	1													1
		Toeja-Merlin families-Rock outcrop, volcanic complex, 5 to 40 percent slopes	1													1
		Trocken family-Rock outcrop, metasedimentary complex, 60 to 80 percent slopes	1													1
		Unionville-Risue families-Rock outcrop, volcanic complex, 5 to 30 percent slopes	1													1
	STATSGO	ANDIC CRYUMBREPTS-ROCK OUTCROP-MEISS (CA862)	1													1
		BALDMOUNTAIN-ROCK OUTCROP-MONACHE (CA717)	1													1
		ROCK OUTCROP-BRIER-ITCA (CA790)										1				1
		ROCK OUTCROP-BURNBOROUGH-NUPART (CA794)	1													1
		ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)	1													1
		ROCK OUTCROP-GERLE-LUMBERLY (CA733)	1													1
		ROCK OUTCROP-HYDER-LOMITAS (CA916)	1													1
		ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)	1													1
		ROCK OUTCROP-SCHENCO-ST. THOMAS (CA917)	1													1
		ROCK OUTCROP-ST. THOMAS-TECOPA (CA905)	1													1
		ROCK OUTCROP-TECOPA-LITHIC TORRIORTHENTS (CA907)	1													1
		ROCK OUTCROP-TEMO-TOEM (CA780)	1													1
		ROCK OUTCROP-TOEM-CAGWIN (CA724)	1													1
		ROCK OUTCROP-TOEM-RUBBLE LAND (CA712)	1													1
		ROCK OUTCROP-TOIYABE-TEMO (CA421)	1													1
		ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)	1													1
		TALLAC-GERLE-ROCK OUTCROP (CA860)	1													1
		VISTA-ROCK OUTCROP-CIENEBA (CA310)	1													1
		WALONG-EDMUNDSTON-ROCK OUTCROP (CA332)	1													1
Rock outcrop 2	SSURGO	Rock land	1													1
Rock outcrop-Rubble land 2	SSURGO	Canisrocks-Rock outcrop-Rubble land complex, 30 to 80 percent slopes, mountainflanks, cryic	1													1
		Canisrocks-Rock outcrop-Rubble land-Vitrandic Cryorthents association, 2 to 30 percent slopes, scoured mountain valleys, cryic	1													1
		Canisrocks-Rock outcrop-Rubble land-Vitrandic Dystrocryepts association, 2 to 30 percent slopes, glacially scoured mountain valleys, cryic	1													1
		Canisrocks-Rubble land-Rock outcrop-Crazymule complex, 30 to 75 percent slopes, mountainflanks, colluvial aprons, cryic	1													1
		Rock outcrop and rubble land	1													1
		Rock outcrop-Rubble land association	2													2
		Rock outcrop-Rubble land association, 0 to 80 percent slopes, metamorphic, cirques, mountainflanks, cryic	1													1

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Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Rock outcrop-Rubble land complex	1													1
		Rock outcrop-Rubble land-Canisrocks association, 0 to 80 percent slopes, cirqued mountainflanks, cryic	1													1
		Rock outcrop-Rubble land-Canisrocks association, 10 to 65 percent slopes, mountain slopes, cryic	1													1
		Rubble land-Holdon-Rock outcrop complex, 30 to 100 percent slopes	1													1
		Rubble land-Typic Cryorthents-Rock outcrop-Xeric Dystrocryepts complex, 30 to 80 percent slopes, mountainflanks, metamorphic, mafic, cryic	1													1
Rocklin	SSURGO	Rocklin rocky sandy loam, pumiceous varient, 8 to 30 percent slopes		1												1
		Rocklin sandy loam, 3 to 9 percent slopes		1												1
Rocklin variant	SSURGO	Rocklin rocky sandy loam, pumiceous variant, 3 to 8 percent slopes		1												1
		Rocklin sandy loam, pumiceous variant, 3 to 30 percent slopes		1												1
Rolldown 2	SSURGO	Rolldown-Mountpatterson-Rubble land complex, 4 to 30 percent slopes	1													1
ROLOC	STATSGO	TRID-ROLOC-ALCAN (CA793)	1													1
Rosamond	SSURGO	Rosamond clay loam									1					1
		Rosamond clay loam, saline-alkali									1					1
		Rosamond fine sandy loam									1					1
		Rosamond loam									1					1
		Rosamond loam, saline-alkali									1					1
		Rosamond loam, sandy loam substratum									1					1
		Rosamond loamy fine sand									1					1
		Rosamond loamy fine sand, hummocky									1					1
		Rosamond silty clay loam									1					1
		Rosamond silty clay loam, saline-alkali									1					1
Rosamond variant	SSURGO	Rosamond variant sandy loam, 5 to 15 percent slopes									1					1
Rose Creek	SSURGO	Rose Creek loam, 0 to 2 percent slopes									1					1
Rossi	SSURGO	Rossi clay loam						1								1
		Rossi clay loam, slightly saline-alkali, 0 to 1 percent slopes						1								1
		Rossi clay loam, strongly saline-alkali, 0 to 1 percent slopes						1								1
		Rossi fine sandy loam						1								1
		Rossi silt loam, moderately saline-alkali, 0 to 1 percent slope						1								1
		Rossi silt loam, slightly saline-alkali, 0 to 1 percent slopes						1								1
		Rossi silt loam, strongly saline-alkali, 0 to 1 percent slopes						1								1
Rough broken land	SSURGO	Rough broken land		1												1
Roundval	SSURGO	Roundval-Dehy-Mountom complex, 0 to 2 percent slopes									1					1
Rovana	SSURGO	Rovana gravelly loamy coarse sand, 5 to 15 percent slopes						1								1
		Rovana gravelly loamy coarse sand, dry, 5 to 15 percent slopes						1								1
		Rovana loamy sand, 0 to 5 percent slopes						1								1
		Rovana loamy sand, dry, 0 to 5 percent slopes						1								1
		Rovana-Ulymeyer complex, 5 to 15 percent slopes						1								1
RUBBLE LAND	STATSGO	RUBBLE LAND-CLANALPINE FAMILY-BREGAR (CA751)	1													1
Rubbleland	SSURGO	Mulett-Toeja families-Rubbleland association, 15 to 80 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Pergelic Cryoborolls-Rubbleland, metasedimentary complex, 30 to 60 percent slopes	1													1
		Rock outcrop, granitic-Packham family-Rubbleland association, 30 to 80 percent slopes	1													1
RUSTIGATE	STATSGO	RUSTIGATE-NUYOBE-LOUDERBACK (CA784)								1						1
Sabies	SSURGO	Sabies loam, 0 to 2 percent slopes						1								1
		Sabies-Yaney complex, 0 to 2 percent slopes						1								1
Sacatar	SSURGO	Sacatar-Canebrake complex, 5 to 30 percent slopes	1													1
		Sacatar-Wortley-Calpine complex, 5 to 30 percent slopes	1													1
Sagaser	SSURGO	Sagaser loam, 50 to 75 percent slopes	1													1
		Sagaser-Gaviota-Borreguero association, 50 to 75 percent slopes	1													1
Salt Chuck family	SSURGO	Rock outcrop-Biglake-Salt Chuck families complex, 30 to 60 percent slopes			1											1
		Stecum-Salt Chuck families complex, 30 to 75 percent slopes			1											1
Salt Chuck family 2	SSURGO	Salt Chuck family-Rock outcrop complex, 30 to 60 percent slopes			1											1
San Emigdio	SSURGO	San Emigdio loam									1					1
San Joaquin	SSURGO	San Joaquin loam, 0 to 2 percent slopes		1												1
		San Joaquin loam, 0 to 3 percent slopes		1												1
		San Joaquin loam, 2 to 9 percent slopes		1												1
		San Joaquin loam, gravelly substratum, 0 to 3 percent slopes		1												1
		San Joaquin loam, shallow, 0 to 3 percent slopes		1												1
		San Joaquin loam, shallow, 3 to 9 percent slopes		1												1
		San Joaquin sandy loam, 0 to 3 percent slopes		1												1
		San Joaquin sandy loam, shallow, 0 to 3 percent slopes		1												1
		San Joaquin sandy loam, shallow, 3 to 9 percent slopes		1												1
		San Joaquin sandy loams, 0 to 3 percent slopes		1												1
		San Joaquin-Alamo complex, 0 to 3 percent slopes		1												1
		San Joaquin-Alamo complex, 3 to 9 percent slopes		1												1
		San Joaquin-Whitney sandy loams, 0 to 8 percent slopes		1												1
	STATSGO	SAN JOAQUIN-COMETA-MADERA (CA309)		1												1
Sandridge	SSURGO	Sandridge loamy fine sand									1					1
Sandy alluvial land	SSURGO	Sandy alluvial land												1		1
		Sandy alluvial land, leveled						1								1
Scodie	SSURGO	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes	1													1
		Scodie-Canebrake-Xyno association, 30 to 60 percent slopes	1													1
		Scodie-Grandora association, 15 to 60 percent slopes	1													1
		Scodie-Sacatar-Canebrake complex, 5 to 30 percent slopes	1													1
Seaman	SSURGO	Seaman sandy loam, 0 to 2 percent slopes									1					1
		Seaman-Yellowrock complex, 2 to 5 percent slopes								1						1
		Seaman-Yellowrock complex, moist, 2 to 5 percent slopes								1						1
Sesame	SSURGO	Locobill-Backcanyon-Sesame complex, 20 to 60 percent slopes	1													1
		Sesame loam, 3 to 8 percent slopes	1													1
		Sesame loam, 3 to 9 percent slopes	1													1
		Sesame loam, 8 to 15 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Sesame loam, 9 to 15 percent slopes	1													1
		Sesame rocky loam, 8 to 15 percent slopes	1													1
		Sesame rocky sandy loam, 3 to 8 percent slopes	1													1
		Sesame sandy loam, 15 to 30 percent slopes	1													1
		Sesame sandy loam, 3 to 8 percent slopes	1													1
		Sesame sandy loam, 3 to 9 percent slopes	1													1
		Sesame sandy loam, 30 to 50 percent slopes	1													1
		Sesame sandy loam, 9 to 15 percent slopes	1													1
		Sesame-Tweedy-Rock outcrop association, 30 to 60 percent slopes	1													1
		Strahle-Sesame-Tweedy association, 30 to 75 percent slopes	1													1
Seville	SSURGO	Seville clay		1												1
		Seville clay, 0 to 2 percent slopes		1												1
Shabbell	SSURGO	Shabbell sandy loam, 0 to 2 percent slopes						1								1
		Shabbell-Shondow-Xerofluvents association, 0 to 2 percent slopes						1								1
		Shabbell-Winnedumah complex, 0 to 2 percent slopes						1								1
Shaver	SSURGO	Holland-Shaver association, steep	1													1
		Shaver coarse sandy loam, 15 to 45 percent slopes	1													1
		Shaver-Chaix association, moderately steep	1													1
		Shaver-Chaix association, steep	1													1
		Shaver-Chaix association, very steep	1													1
Shaver family	SSURGO	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES	1													1
		SHAVER FAMILY, 5 TO 35 PERCENT SLOPES	1													1
Shaver variant	SSURGO	Tollhouse variant-Shaver variant-Rock outcrop complex, 30 to 50 percent slopes	1													1
Sheephead	SSURGO	Sheephead-Rock outcrop complex, 15 to 75 percent slopes	1													1
Sheridan	SSURGO	Sheridan sandy loam, 15 to 30 percent slopes	1													1
		Sheridan sandy loam, 15 to 30 percent slopes, eroded	1													1
		Sheridan sandy loam, 30 to 50 percent slopes	1													1
		Sheridan sandy loam, 30 to 50 percent slopes, eroded	1													1
Sherwin	SSURGO	Sherwin very cobbly loamy fine sand, 5 to 15 percent slopes		1												1
		Sherwin very cobbly loamy fine sand, moist, 5 to 15 percent slopes		1												1
Shondow	SSURGO	Shondow loam, 0 to 2 percent slopes									1					1
		Shondow loam, drained, 0 to 2 percent slopes									1					1
		Shondow-Hessica association, 0 to 2 percent slopes									1					1
Shorthike	SSURGO	Murain-Shorthike association		1												1
Shree	SSURGO	Shree very gravelly sandy loam, 4 to 15 percent slopes			1											1
		Shree-Holbrook association			1											1
Sierra	SSURGO	Sierra sandy loam, 15 to 30 percent slopes	1													1
		Sierra sandy loam, 30 to 45 percent slopes	1													1
		Sierra sandy loam, 45 to 70 percent slopes	1													1
		Sierra sandy loam, 9 to 15 percent slopes	1													1
		Sierra very rocky sandy loam, 3 to 30 percent slopes	1													1
		Sierra very rocky sandy loam, 30 to 45 percent slopes	1													1
		Sierra very rocky sandy loam, 45 to 70 percent slopes	1													1
		Sierra-Tollhouse-Rock land complex, 45 to 70 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Sirretta	SSURGO	Sirretta-Rock outcrop complex, 50 to 75 percent slopes	1													1
Sirretta 2	SSURGO	Sirretta-Rock outcrop-Nanny family complex, 30 to 50 percent slopes	1													1
Sirretta family	SSURGO	Sirretta family and Umpa family, wet, 2 to 25 percent slopes			2											2
		Sirretta family, 25 to 50 percent slopes	2													2
		Sirretta family-Rock outcrop complex, 15 to 45 percent slopes	2													2
		Sirretta family-Rock outcrop complex, 45 to 65 percent slopes	2													2
Siskiyou family 2	SSURGO	Siskiyou family-Rock outcrop-Brader family complex, 30 to 75 percent slopes	1													1
Slinger	SSURGO	Bregar-Slinger families-Rock outcrop, metasedimentary complex, 30 to 60 percent slopes	1													1
		Packham-Slinger families-Rock outcrop, granitis association, 30 to 60 percent slopes	1													1
Snowtell 2	SSURGO	Forsell-Snowtell-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Rock outcrop-Snowtell complex, 30 to 75 percent slopes	1													1
		Rock outcrop-Snowtell-Forsell complex, 8 to 30 percent slopes	1													1
Soakpak	SSURGO	Basket-Packham-Soakpak families association, 30 to 60 percent slopes	1													1
		Pergelic Cryoborolls-Soakpak family association, 5 to 70 percent slopes	1													1
Soboba	SSURGO	Soboba cobbly loamy sand, 2 to 5 percent slopes											1			1
Sodic Haplocambids	SSURGO	Sodic Haplocambids, coarse-loamy, thick- Elkhills complex, 9 to 30 percent slopes		1												1
		Sodic Haplocambids, coarse-loamy, thick-Elkhills complex, 30 to 50 percent slopes		1												1
		Sodic Haplocambids, thick, 15 to 30 percent slopes		1												1
		Sodic Haplocambids, thick, 30 to 50 percent slopes		1												1
		Sodic Haplocambids, thick, 9 to 15 percent slopes		1												1
Sofgran	SSURGO	Sofgran-Temo-Rock outcrop association	1													1
		Sofgran-Temo-Shalgran association	1													1
Soils data not complete	SSURGO	Mapping incomplete	1													1
Sonorapass	SSURGO	Snowtell-Sonorapass-Rock outcrop complex, 8 to 30 percent slopes			1											1
Sorrell	SSURGO	Sorrell-Arujo-Rock outcrop association, 9 to 50 percent slopes	1													1
Sorrell 2	SSURGO	Sorrell-Martee-Rock outcrop complex, 30 to 60 percent slopes	1													1
Southlake	SSURGO	Southlake gravelly sandy loam, 2 to 15 percent slopes		1												1
		Southlake-Goodale complex, 5 to 15 percent slopes		1												1
		Southlake-Goodale-Urban land complex, 0 to 15 percent slopes		1												1
		Southlake-Southlake, gravelly-Goodale complex, 5 to 15 percent slopes		1												1
		Southlake-Urban land complex, 0 to 15 percent slopes		1												1
Spaa	SSURGO	Packham-Spaa families-Rock outcrop, granitic association, 30 to 60 percent slopes	1													1
Spainhower	SSURGO	Spainhower cobbly sandy loam, 5 to 15 percent slopes		1												1
		Spainhower cobbly sandy loam, dry, 5 to 15 percent slopes		1												1
Spainhower family	SSURGO	Lubkin-Tinemaha--Spainhower families complex, 5 to 15 percent slopes		1												1
Spanel	SSURGO	Spanel-Trocken families complex, 15 to 30 percent slopes		1												1
		Spanel-Trocken families complex, 2 to 15 percent slopes		1												1
		Spanel-Trocken families complex, 30 to 60 percent slopes		1												1
Sparkhule	SSURGO	Sparkhule very gravelly loam, 5 to 15 percent slopes	1													1
Springmeyer	SSURGO	Springmeyer gravelly sandy loam, 4 to 8 percent slopes			1											1
Springmeyer family	SSURGO	Springmeyer family, 30 to 60 percent slopes			1											1
St. Marys	SSURGO	St. Marys-Bearskin families-Rock outcrop, volcanic association. 15 to 60 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Stacy family	SSURGO	Koehler-Stacy families complex, 0 to 15 percent slopes									1					1
Stecum family	SSURGO	Stecum family, 3 to 35 percent slopes	2													2
		Stecum family-Rock outcrop association, 45 to 65 percent slopes	2													2
		STECUM FAMILY-ROCK OUTCROP COMPLEX, 5 TO 45 PERCENT SLOPES	1													1
		Garlet-Stecum families complex, 2 to 15 percent slopes						1								1
		Stecum family-Rock outcrop complex, 2to 30 percent slopes	1					1								2
		Stecum family-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Stecum-Chacol families-Rock outcrop association, 2 to 50 percent slopes	1													1
		Stecum-Guiser families-Rock outcrop complex, 15 to 60 percent slopes	1													1
Stecum family 2	SSURGO	Rock outcrop-Stecum family association, 35 to 65 percent slopes	2													2
		Lithic Cryorthents-Stecum family-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Stecum family-Rubble land complex, 15 to 60 percent slopes	1													1
Steuber	SSURGO	Steuber sandy loam, 0 to 2 percent slopes									1					1
		Steuber sandy loam, 0 to 5 percent slopes									1					1
		Steuber sandy loam, 2 to 5 percent slopes									1					1
		Steuber sandy loam, 5 to 9 percent slopes									1					1
		Steuber stony sandy loam, 5 to 9 percent slopes									1					1
Stineway	SSURGO	Stineway-Kiscove association, 30 to 60 percent slopes	1													1
		Stineway-Kiscove association, 5 to 30 percent slopes	1													1
		Stineway-Kiscove-Rock outcrop association, 30 to 75 percent slopes	1													1
		Stineway-Kiscove-Urban land complex, 0 to 30 percent slopes	1													1
Strahle	SSURGO	Strahle-Rock outcrop-Sesame association, 30 to 60 percent slopes	1													1
Stumpatil	SSURGO	Stumpatil very gravelly sandy loam, 30 to 50 percent slopes			1											1
		Stumpatil very gravelly sandy loam, 8 to 30 percent slopes			1											1
		Stumpatil-Sonorapass-Snowtell association			1											1
Stutzville	SSURGO	Stutzville silty clay loam, strongly saline, 0 to 1 percent slopes								1						1
Sumeadow	SSURGO	Sumeadow association			1											1
		Sumeadow-Lostridge association			1											1
Sumine	SSURGO	Mascamp-Sumine families complex, 15 to 40 percent slopes	1													1
Sumine family	SSURGO	Sumine family-Rock outcrop complex, 2 to 30 percent slopes	1													1
Sunrise	SSURGO	Sunrise loam						1								1
		Sunrise sandy loam						1								1
		Sunrise sandy loam, shallow						1								1
Supervisor	SSURGO	Supervisor family-Rock outcrop, limestone-Bartine family association, 15 to 60 percent slopes	1													1
		Supervisor family-Rock outcrop, metasedimentary complex, 30to 60 percent slopes	1													1
		Supervisor family-Rock outcrop, metasedimentary complex, 5 to 30 percent slopes	1													1
Sur family 2	SSURGO	Waterman-Sur families-Rock outcrop complex, 15 to 30 percent slopes	1													1
Swamp	SSURGO	Swamp											1			1
Sween variant	SSURGO	Sween variant-rock outcrop complex, 5 to 30 percent slo pes	1													1
Sweetmount	SSURGO	Sweetmount-Hawkinspeak-Hawkridge association	1													1
Taboose	SSURGO	Taboose-Lava flows complex, 5 to 30 percent slopes		1												1
		Taboose-Lava flows complex, dry, 5 to 15 percent slopes		1												1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
	STATSGO	TABOOSE-ROCK OUTCROP-CINDER LAND (CA768)		1												1
Tachi	SSURGO	Tachi clay, 0 to 1 percent slopes									1					1
Tagus	SSURGO	Tagus loam, 0 to 2 percent slopes							1							1
Tehachapi	SSURGO	Tehachapi cobbly sandy clay loam, 2 to 30 percent slope s		1												1
		Tehachapi cobbly sandy clay loam, warm, 2 to 9 percent slopes		1												1
		Tehachapi gravelly loam, 5 to 30 percent slopes		1												1
		Tehachapi loam, 15 to 30 percent slopes, eroded		1												1
		Tehachapi loam, 2 to 5 percent slopes		1												1
		Tehachapi sandy loam, 2 to 15 percent slopes		1												1
Tehachapi variant	SSURGO	Tehachapi variant sandy clay loam, 15 to 50 percent slo pes		1												1
Temple	SSURGO	Temple clay								1						1
		Temple clay loam								1						1
		Temple clay loam, 0 to 1 percent slopes								1						1
		Temple clay loam, saline								1						1
		Temple clay loam, saline-alkali								1						1
		Temple clay loam, slightly saline, 0 to 1 percent slopes								1						1
		Temple clay, 0 to 1 percent slopes								1						1
		Temple loam								1						1
		Temple loam, 0 to 1 percent slopes								1						1
		Temple loam, saline								1						1
		Temple loam, saline-alkali								1						1
		Temple loam, slightly saline, 0 to 1 percent slopes								1						1
Tennco	SSURGO	Tennco fine sandy loam, 0 to 1 percent slopes				1										1
Terrace escarpments	SSURGO	Terrace escarpments		1												1
Theriot	SSURGO	Theriot-Kyler-Rock outcrop association	1													1
		Sanpete-Theriot families complex, 5 to 60 percent slopes	1													1
		Theriot family-Rock outcrop, limestone assiciation, 30 to 60 percent slopes	1													1
		Theriot family-Rock outcrop, limestone association, 15 to 30 percent slopes	1													1
		Theriot family-Rock outcrop, limestone association, 60 to 80 percent slopes	1													1
	STATSGO	THERIOT-ROCK OUTCROP-UHALDI (CA750)	1													1
Thiefridge	SSURGO	Dab-Longday-Thiefridge association	1													1
		Thiefridge-Rock outcrop complex, 30 to 75 percent slopes	1													1
Tibbcreek	SSURGO	Tibbcreek gravelly loam, 5 to 30 percent slopes	1													1
Timosea	SSURGO	Timosea-Neuralia complex, 2 to 9 percent slopes			1											1
		Timosea-Neuralia complex, warm, 2 to 9 percent slopes			1											1
Tinemaha	SSURGO	Tinemaha gravelly loamy coarse sand, 5 to 15 percent slopes		1												1
		Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes		1												1
Tips	SSURGO	Tips-Erskine-Rock outcrop association, 30 to 60 percent slopes	1													1
		Tips-Hoffman-Cinco association, 30 to 60 percent slopes	1													1
Tivy	SSURGO	Tivy loam, 3 to 9 percent slopes	1													1
		Tivy loam, 30 to 45 percent slopes	1													1
		Tivy loam, 45 to 70 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Tivy loam, 9 to 30 percent slopes	1													1
		Tivy very rocky loam, 3 to 30 percent slopes	1													1
		Tivy very rocky loam, 30 to 70 percent slopes	1													1
Toeja	SSURGO	Abgese-Berent-Toeja families association, 2 to 30 percent slopes	1													1
Toejom	SSURGO	Toejom-Glenbrook-Pimogran association	1													1
		Toejom-Pimogran-Rock outcrop association	1													1
		Toejom-Pimogran-Rock outcrop association, 50 to 75 percent slopes	1													1
Toem	SSURGO	Cagwin-Toem-Monache association, moderately steep	1													1
	STATSGO	TOEM-CAGWIN-ROCK OUTCROP (CA715)	1													1
Toem 2	SSURGO	Rock outcrop-Toem complex, 30 to 50 percent slopes	1													1
		Rock outcrop-Toem complex, 50 to 75 percent slopes	1													1
		Rock outcrop-Toem-Sirretta complex, 10 to 30 percent slopes	1													1
		Toem-Rock outcrop-Cagwin complex, 30 to 75 percent slopes	1													1
		Toem-Rock outcrop-Cagwin complex, 5 to 30 percent slopes	1													1
Toiyabe	SSURGO	Corbett-Toiyabe-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Toiyabe-Corbett-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Toiyabe-Corbett-Rock outcrop complex, 50 to 75 percent slopes	1													1
		Toiyabe-Corbett-Rock outcrop complex, 8 to 30 percent slopes	1													1
Toll	SSURGO	Toll loamy coarse sand, 2 to 9 percent slopes									1					1
Tollhouse	SSURGO	Tollhouse extremely rocky coarse sandy loam, 30 to 70 percent slopes	1													1
		Tollhouse rocky coarse sandy loam, 30 to 75 percent slopes	1													1
		Tollhouse-Chaix association, moderately steep	1													1
		Tollhouse-Edmundston-Sorrell association, 15 to 50 percent slopes	1													1
		Tollhouse-Martee-Edmundston association, 30 to 50 percent slopes	1													1
		Tollhouse-Martee-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Tollhouse-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Tollhouse-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Tollhouse-Rock outcrop complex, 50 to 75 percent slopes	1													1
		Tollhouse-Sesame-Friant association, 30 to 60 percent slopes	1													1
		Tollhouse-Sorrell-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Tollhouse-Tweedy-Locobill association, 30 to 60 percent slopes	1													1
	STATSGO	TOLLHOUSE-ROCK OUTCROP-CIENEBA (CA720)	1													1
Tollhouse 2	SSURGO	Rock outcrop-Tollhouse complex, 15 to 30 percent slopes	1													1
		Rock outcrop-Tollhouse complex, 30 to 50 percent slopes	1													1
		Rock outcrop-Tollhouse complex, 50 to 75 percent slopes	1													1
		Tollhouse-Rock outcrop complex, 10 to 30 percent slopes	1													1
Tollhouse family	SSURGO	TOLLHOUSE FAMILY-ROCK OUTCROP ASSOCIATION, 60 TO 85 PERCENT SLOPES	1													1
		TOLLHOUSE FAMILY-ROCK OUTCROP COMPLEX, 30 TO 60 PERCENT SLOPES	1													1
Toomes	SSURGO	Toomes extremely cobbly loam, 30 to 70 percent slopes		1												1
Toquerville family	SSURGO	Whitewolf-Toquerville families association, 5 to 60 percent slopes	1													1
Torrifluvents	SSURGO	Torrifluvents, 0 to 2 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Torrifluvents-Cajon complex, nearly level									1					1
		Torrifluvents-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes											1			1
		Torrifluvents-Fluvaquentic Endoaquolls complex, cool, 0 to 2 percent slopes											1			1
Torriorthentic Haploxerolls	SSURGO	Torriorthentic Haploxerolls-Rock outcrop complex, 30 to 60 percent slopes		1												1
		Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes		1												1
Torriorthentic Haploxerolls 2	SSURGO	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes	1													1
Torriorthents	SSURGO	Sodic Haplocambids, thick-Elkhills-Torriorthents, thin, eroded complex, 30 to 60 percent slopes		1												1
		Sodic Haplocambids, thick-Torriorthents, thin complex, 15 to 30 percent slopes		1												1
		Sodic Haplocambids, thick-Torriorthents, thin, eroded complex, 30 to 60 percent slopes		1												1
		Torriorthents stratified, eroded-Elkhills complex, 9 to 50 percent slopes		1												1
		Torriorthents, stratified, eroded-Elkhills complex, 9 to 50 percent slopes		1												1
		Torriorthents, very thin, 30 to 50 percent slopes		1												1
		Torriorthents-Haplargids-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Torriorthents-Rock outcrop complex, very steep	1													1
Trabuco	SSURGO	Trabuco loam, 15 to 30 percent slopes	1													1
		Trabuco loam, 15 to 45 percent slopes	1													1
		Trabuco loam, 30 to 45 percent slopes	1													1
		Trabuco loam, 30 to 50 percent slopes	1													1
		Trabuco loam, 45 to 70 percent slopes	1													1
		Trabuco loam, 9 to 15 percent slopes	2													2
		Trabuco rocky loam, 45 to 75 percent slopes	1													1
		Trabuco rocky loam, 8 to 15 percent slopes	1													1
		Trabuco very rocky loam, 30 to 45 percent slopes	1													1
		Trabuco very rocky loam, 45 to 70 percent slopes	1													1
		Trabuco-Rock outcrop complex, 15 to 50 percent slopes	1													1
Tranquillity	SSURGO	Tranquillity clay, saline-sodic, wet, 0 to 1 percent slopes								1						1
		Tranquillity-Tranquillity, wet, complex, saline-sodic, 0 to 1 percent slopes								1						1
Traver	SSURGO	Traver fine sandy loam						1								1
		Traver fine sandy loam, moderately deep						1								1
		Traver loam, moderately saline alkali, 0 to 1 percent slopes						1								1
		Traver loam, slightly saline-alkali, 0 to 1 percent slopes						1								1
		Traver loam, strongly saline-alkali, 0 to 1 percent slopes						1								1
		Traver sandy loam						1								1
		Traver sandy loam, moderately deep						1								1
		Traver, Fresno, and El Peco fine sandy loams, moderately saline alkali, 0 to 1 percent slopes						1								1
		Traver, fresno, el peco fine sandy loams, strongly saline-alkal , 0 to 1 percent slopes						1								1
		Traver-Chino complex, moderately saline alkali, 0 to 1 percent slopes						1								1
		Traver-Chino complex, slightly saline alkali, 0 to 1 percent slopes						1								1
Tray	SSURGO	Tray loam, saline-alkali						1								1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Tray sandy loam						1								1
		Tray sandy loam, saline-alkali						1								1
Tretten	SSURGO	Tretten fine sandy loam, 15 to 30 percent slopes	1													1
		Tretten fine sandy loam, 3 to 15 percent slopes	1													1
		Tretten fine sandy loam, 30 to 45 percent slopes	1													1
		Tretten fine sandy loam, 45 to 70 percent slopes	1													1
		Tretten very rocky fine sandy loam, 45 to 70 percent slopes	1													1
TRID	STATSGO	TRID-BERIT-MINNEHA (CA774)	1													1
TRIGGER	STATSGO	TRIGGER-SPARKHULE-ROCK OUTCROP (CA389)	1													1
Trigo	SSURGO	Trigo fine sandy loam, 3 to 8 percent slopes		1												1
		Trigo fine sandy loam, 8 to 15 percent slopes		1												1
		Trigo-Chanac association, 15 to 60 percent slopes		1												1
		Trigo-Cometa sandy loams, 3 to 8 percent slopes		1												1
Trigo family	SSURGO	Trigo-Modesto families-Badlands association, 45 to 90 percent slopes		1												1
Trimmer	SSURGO	Trimmer loam, 15 to 30 percent slopes	2													2
		Trimmer loam, 3 to 15 percent slopes	1													1
		Trimmer loam, 30 to 45 percent slopes	1													1
		Trimmer loam, 45 to 70 percent slopes	2													2
		Trimmer very rocky loam, 30 to 45 percent slopes	1													1
		Trimmer very rocky loam, 45 to 70 percent slopes	1													1
		Trimmer-Tretten complex, 15 to 45 percent slopes	1													1
		Trimmer-Tretten complex, 45 to 70 percent slopes	1													1
Trocken	SSURGO	Bluewing-Trocken families association, 5 to 15 percent slopes						1								1
Truvar	SSURGO	Truvar-Dechambeau association, 2 to 5 percent slopes			1											1
Tujunga	SSURGO	Tujunga and Hanford soils, channeled, 0 to 8 percent slopes											1			1
		Tujunga cobbly loamy sand, 0 to 3 percent slopes											1			1
		Tujunga loamy sand, 0 to 2 percent slopes											1			1
		Tujunga loamy sand, 0 to 3 percent slopes											1			1
		Tujunga loamy sand, 2 to 5 percent slopes											1			1
		Tujunga loamy sand, 3 to 8 percent slopes											1			1
		Tujunga loamy sand, 3 to 9 percent slopes											1			1
		Tujunga loamy sand, gravelly substratum, 0 to 3 percent slopes											1			1
		Tujunga loamy sand, moderately deep and deep over hardpan, 0 to 3 percent slopes											1			1
		Tujunga loamy sand, moderately deep and deep over silt, 0 to 3 percent slopes											1			1
		Tujunga sand											1			1
		Tujunga sand, 0 to 3 percent slopes											1			1
		Tujunga soils, channeled, 0 to 9 percent slopes											1			1
Tulare	SSURGO	Tulare clay, partially drained											1			1
Tulare variant	SSURGO	Tulare variant clay, partially drained											1			1
Tunawee	SSURGO	Tunawee bouldery loamy coarse sand, 15 to 50 percent slopes	1													1
		Tunawee-Rock outcrop complex, 15 to 40 percent slopes	1													1
Tunis	SSURGO	Arujo-Walong-Tunis association, 30 to 75 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Arujo-Walong-Tunis association, 9 to 30 percent slopes	1													1
		Tunis sandy loam, 5 to 30 percent slopes	1													1
		Tunis-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Tunis-Tollhouse-Sorrell association, 30 to 75 percent slopes	1													1
		Tunis-Walong complex, 50 to 75 percent slopes	1													1
Tupman	SSURGO	Tupman gravelly sandy loam, 0 to 2 percent slopes								1						1
		Tupman-Urban land complex, 0 to 5 percent slopes								1						1
Tweedy	SSURGO	Tweedy sandy loam, 30 to 50 percent slopes	1													1
		Tweedy sandy loam, 50 to 75 percent slopes	1													1
		Tweedy-Anaverde complex, 30 to 50 percent slopes	1													1
		Tweedy-Anaverde complex, 50 to 75 percent slopes	1													1
		Tweedy-Erskine-Alberti association, 30 to 60 percent slopes	1													1
		Tweedy-Strahle association, 40 to 75 percent slopes	1													1
		Tweedy-Tollhouse-Locobill complex, 9 to 30 percent slopes	1													1
		Tweedy-Tollhouse-Locobill-Urban land complex, 0 to 30 percent slopes	1													1
		Tweedy-Tunis-Rankor association, 30 to 75 percent slopes	1													1
		Tweedy-Walong association, 30 to 50 percent slopes	1													1
Twisselman	SSURGO	Twisselman clay, 0 to 2 percent slopes									1					1
		Twisselman clay, 2 to 5 percent slopes									1					1
		Twisselman clay, saline-alkali, 0 to 2 percent slopes									1					1
		Twisselman clay, saline-alkali, moderately wet, 0 to 2 percent slopes									1					1
		Twisselman sandy loam, saline-alkali, 0 to 2 percent sl opes									1					1
		Twisselman sandy loam, saline-alkali, moderately wet, 0 to 2 percent slopes									1					1
		Twisselman silty clay									1					1
		Twisselman silty clay, saline-alkali									1					1
Typic Argixerolls	SSURGO	TYPIC ARGIXEROLLS, 15 TO 50 PERCENT SLOPES	1													1
		TYPIC ARGIXEROLLS-COARSEGOLD FAMILY ASSOCIATION, 35 TO 65 PERCENT SLOPES	1													1
Typic Cryorthents	SSURGO	Glacierpoint-Typic Cryorthents complex, 30 to 65 percent slopes, mountain slopes, lateral moraines, aprons, cryic	1													1
		Typic Cryorthents, 0 to 35 percent slopes	1													1
		Typic Cryorthents, 15 to 50 percent slopes	1													1
		Typic Cryorthents, 50 to 85 percent slopes	1													1
		Typic Cryorthents-Dystric Cryochrepts complex, 15 to 60 percent slopes	1													1
		Typic Cryorthents-Dystric Cryochrepts-Rock outcrop association, 15 to 45 percent slopes	1													1
		Typic Cryorthents-Dystric Cryochrepts-Rock outcrop complex, 0 to 30 percent slopes	1													1
		Typic Cryorthents-Entic Cryumbrepts complex, 0 to 45 percent slopes	1													1
		Typic Cryorthents-Rock outcrop complex, 0 to 45 percent slopes	1													1
		Typic Cryorthents-Rock outcrop complex, 40 to 85 percent slopes	1													1
		Typic Cryorthents-Rock outcrop-Lithic Cryorthents complex, 0 to 30 percent slopes	1													1
		Typic Cryorthents-Rock outcrop-Rubble land complex, 30 to 65 percent slopes, metamorphic, glacially scoured mountain slopes, cryic	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Typic Cryorthents-Rubble land-Rock outcrop complex, 15 to 40 percent slopes, moraines, cryic	1													1
		Typic Cryorthents-Typic Cryochrepts-Rock outcrop complex, 0 to 45 percent slopes			1											1
		Typic Cryorthents-Typic Cryumbrepts-Rock outcrop complex, 0 to 45 percent slopes	1													1
Typic Cryorthents 2	SSURGO	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes	1													1
		Rock outcrop-Typic Cryorthents complex, 40 to 85 percent slopes	1													1
		Rock outcrop-Typic Cryorthents-Lithic Cryorthents complex, 0 to 30 percent slopes	1													1
		Rock outcrop-Typic Cryorthents-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, joints, cryic	1													1
		Typic Cryorthents-Rock outcrop-Rubble land complex, 30 to 65 percent slopes, metamorphic, glacially scoured mountain slopes, cryic	1													1
Typic Cryorthents, tephritic	SSURGO	Typic Cryorthents-Rock outcrop-Lithic Cryorthents complex, tephritic, 0 to 30 percest slopes			1											1
		Typic Cryorthents-Rock outcrop-Lithic Cryorthents complex, tephritic, 30 to 65 percent slopes			1											1
Typic Cryorthents, volcanic	SSURGO	Typic Cryorthents-Xeric Vitricryands-Rock outcrop complex, volcanic, 0 to 45 percent slopes	1													1
Typic Cryorthents, volcanic 2	SSURGO	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes	1													1
		Rock outcrop-Typic Cryorthents-Lithic Cryorthents association, volcanic, 0 to 30 percent slopes	1													1
		Rock outcrop-Typic Cryorthents-Typic Cryoborolls complex, volcanic, 25 to 50 percent slopes	1													1
Typic Cryumbrepts	SSURGO	Typic Cryumbrepts, 0 to 30 percent slopes	1													1
		Typic Cryumbrepts-Dystric Cryochrepts-Typic Cryorthents complex, 0 to 30 percent slopes	1													1
		Typic Cryumbrepts-Dystric Cryochrepts-Typic Cryorthents complex, 15 to 45 percent slopes	1													1
		Typic Cryumbrepts-Typic Cryorthents-Rock outcrop complex, 0 to 30 percent slopes	1													1
Typic Cryumbrepts, volcanic	SSURGO	Typic Cryumbrepts-Xeric Vitricryands-Rock outcrop complex, volcanic, 0 to 45 percent slopes	1													1
Typic Gypsiorthids	SSURGO	Typic Gypsiorthids-Kimberlina association, 0 to 5 perce nt slopes		1												1
Typic Haplargids	SSURGO	Washoe family-Typic Haplargids association, 30 to 60 percent slopes	1													1
Typic Haplargids 2	SSURGO	Jawbone-Typic Haplargids-Rock outcrop association, 30 to 60 percent slopes	1													1
Typic Haploxeralfs	SSURGO	Typic Haploxeralfs, fine-Haploxerolls, coarse-loamy complex, 15 to 60 percent slopes	1													1
Typic Psammaquents	SSURGO	Typic Psammaquents, 0 to 2 percent slopes									1					1
Typic Torriorthents	SSURGO	Rock outcrop-Typic Torriorthents complex, 25 to 55 percent slopes			1											1
		Typic Torriorthents, 5 to 25 percent slopes			1											1
		Typic Torriorthents-Rock outcrop association, 30 to 60 percent slopes			1											1
		Typic Torriorthents-Xeric Torriorthents association, 45 to 75 percent slopes			1											1
		Typic Torriorthents-Yaney complex, 0 to 2 percent slopes			1											1
Typic Torripsamments	SSURGO	Typic Torripsamments, 25 to 55 percent slopes	1													1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Typic Torripsamments-Typic Torriorthents-Rock outcrop complex, 25 to 55 percent slopes	1													1
Typic Xerochrepts	SSURGO	Typic Xerochrepts, 15 to 45 percent slopes	1													1
Typic Xeropsamments	SSURGO	Typic Xeropsamments, 0 to 2 percent slopes									1					1
Typic Xerorthents	SSURGO	Typic Xerorthents-Entic Haploxerolls complex, 15 to 50 percent slopes	1													1
		Typic Xerorthents-Entic Haploxerolls-Typic Xerochrepts complex, 35 to 75 percent slopes	1													1
		Typic Xerorthents-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Typic Xerorthents-Rock outcrop complex, 40 to 85 percent slopes	1													1
		Typic Xerorthents, 2 to 15 percent slopes	1													1
Typic Xerumbrepts	SSURGO	Dystric Xerochrepts and Typic Xerumbrepts, 20 to 50 percent slopes	1													1
		Typic Xerumbrepts, 5 to 20 percent slopes	2													2
		Typic Xerumbrepts-Entic Xerumbrepts-Dystric Xerorthents complex, 5 to 30 percent slopes	1													1
UHALDI	STATSGO	UHALDI-PUETT-CHALCO (CA773)	1													1
Ultic Haploxeralfs	SSURGO	Humic Dystroxerepts-Ultic Haploxeralfs complex, 15 to 35 percent slopes, mountain slopes, moraines, mesic	1													1
		ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES	1													1
		ULTIC HAPLOXERALFS-DYSTRIC LITHIC XEROCHREPTS COMPLEX, 15 TO 50 PERCENT SLOPES	1													1
Ulymeyer	SSURGO	Ulymeyer gravelly loamy coarse sand, 5 to 15 percent slopes			1											1
		Ulymeyer gravelly loamy coarse sand, moist, 5 to 15 percent slopes			1											1
		Ulymeyer gravelly loamy coarse sand, slightly dry, 5 to 15 percent slopes			1											1
		Ulymeyer gravelly loamy coarse sand, slightly moist, 5 to 15 percent slopes			1											1
		Ulymeyer-Rovana complex, 5 to 15 percent slopes			1											1
		Ulymeyer-Rovana complex, moist, 5 to 15 percent slopes			1											1
		Ulymeyer-Rovana complex, slightly moist, 5 to 15 percent slopes			1											1
		Ulymeyer-Ulymeyer very cobbly-Rovana complex, 0 to 5 percent slopes			1											1
	STATSGO	ULYMEYER-ROVANA-BAIRS (CA761)						1								1
Umpa family	SSURGO	UMPA FAMILY, 35 TO 55 PERCENT SLOPES	1													1
		UMPA FAMILY, 5 TO 35 PERCENT SLOPES	1													1
		Umpa family, deep, 20 to 60 percent slopes	2													2
Unionville	SSURGO	Mackey-Unionville families complex, 3 to 15 percent slopes	1													1
UPSPRING	STATSGO	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)	1													1
Urban land	SSURGO	Delano-Urban land complex, 0 to 2 percent slopes												1		1
		Kimberlina-Urban land complex 0 to 5 percent slopes												1		1
		Southlake-Southlake, gravelly-Goodale-Urban land complex, 0 to 15 percent slopes												1		1
		Southlake-Urban land complex, 0 to 15 percent slopes												1		1
		Urban land												1		1
Vanguard	SSURGO	Vanguard sandy loam, partially drained									1					1
Vaquero	SSURGO	Vaquero and Altamont clays, 15 to 50 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Vaquero and Altamont clays, 50 to 75 percent slopes	1													1
		Vaquero-Altamont-Millsholm complex, 15 to 50 percent sl opes	1													1
		Vaquero-Grazer association, 15 to 65 percent slopes	1													1
VEET	SSURGO	Veet very gravelly sandy loam, 2 to 8 percent slopes							1							1
	STATSGO	SPANEL-VEET-TROCKEN (CA744)									1					1
Vernalis	SSURGO	Vernalis loam, 0 to 2 percent slopes								1						1
		Vernalis loam, 2 to 5 percent slopes								1						1
		Vernalis sandy loam, 0 to 2 percent slopes								1						1
Vineland	SSURGO	Vineland loamy sand, drained, 0 to 1 percent slopes											1			1
		Vineland-Bakersfield complex, drained, 0 to 1 percent slopes											1			1
Visalia	SSURGO	Visalia fine sandy loam, 0 to 1 percent slopes									1					1
		Visalia loam, 0 to 3 percent slopes									1					1
		Visalia sandy loam, 0 to 3 percent slopes									1					1
		Visalia sandy loam, 3 to 9 percent slopes									1					1
		Visalia sandy loam, clay loam substratum, 0 to 3 percent slopes									1					1
		Visalia sandy loam, moderately deep over sand, 0 to 3 percent slopes									1					1
Vista	SSURGO	Vista coarse sandy loam, 15 to 30 percent slopes	1													1
		Vista coarse sandy loam, 15 to 30 percent slopes, eroded	1													1
		Vista coarse sandy loam, 3 to 9 percent slopes	1													1
		Vista coarse sandy loam, 30 to 45 percent slopes	1													1
		Vista coarse sandy loam, 30 to 50 percent slopes	1													1
		Vista coarse sandy loam, 30 to 50 percent slopes, eroded	1													1
		Vista coarse sandy loam, 45 to 70 percent slopes	1													1
		Vista coarse sandy loam, 9 to 15 percent slopes	1													1
		Vista coarse sandy loam, shallow, 3 to 9 percent slopes	1													1
		Vista coarse sandy loam, shallow, 30 to 45 percent slopes	1													1
		Vista coarse sandy loam, shallow, 9 to 30 percent slopes	1													1
		Vista extremely rocky coarse sandy loam, 3 to 30 percent slopes	1													1
		Vista very rocky coarse sandy loam, 3 to 30 percent slopes	1													1
		Vista very rocky coarse sandy loam, 30 to 45 percent slopes	1													1
		Vista very rocky coarse sandy loam, shallow, 3 to 30 percent slopes	1													1
		Vista very rocky coarse sandy loam, shallow, 30 to 70 percent slopes	1													1
		Vista very rocky coarse sandy loam, shallow, 45 to 70 percent slopes	1													1
		Vista-Fallbrook coarse sandy loams, 9 to 30 percent slopes	1													1
		Vista-Fallbrook extremely rocky coarse sandy loams, 30 to 70 percent slopes	1													1
		Vista-Fallbrook very rocky coarse sandy loams, 3 to 30 percent slopes	1													1
		Vista-Fallbrook very rocky coarse sandy loams, 30 to 45 percent slopes	1													1
		Vista-Rock outcrop complex, 9 to 50 percent slopes	1													1
		Vista-Sesame complex, 3 to 8 percent slopes	1													1
Vitrandic Cryopsamments	SSURGO	Vitrandic Cryopsamments, 0 to 15 percent slopes										1				1
		Vitrandic Cryopsamments-Rock outcrop complex, 30 to 60 percent slopes										1				1

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Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)													Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Vitrandic Cryopsamments 2	SSURGO	Vitrandic Cryopsamments-Rock outcrop complex, 15 to 30 percent slopes										1				1
Vitrandic Cryorthents	SSURGO	Canisrocks-Glacierpoint-Vitrandic Cryorthents complex, bouldery, 5 to 20 percent slopes, ground moraines, cryic										1				1
		Vitrandic Cryorthents, pumiceous-Vitrandic Cryorthents complex, 15 to 30 percent slopes										1				1
		Vitrandic Cryothents-Vitrandic Cryorthents, ashy complex, 9 to 30 percent slopes										1				1
		Vitrandic Xerorthents, ashy-Vitrandic Xeropsamments-Vitrandic Cryorthents, ashy complex, 0 to 15 percent slopes										1				1
Vitrandic Cryorthents 2	SSURGO	Rock outcrop-Crazymule-Vitrandic Cryorthents association, 0 to 45 percent slopes, joints, fractures, scoured, cryic	1													1
		Vitrandic Cryothents, pumiceous-Vitrandic Cryorthents-Rock outcrop complex, 30 to 60 percent slopes										1				1
Vitrandic Dystrocryepts	SSURGO	Xeric Dystrocryepts-Marmotland association, 0 to 25 percent slopes, mountain slopes, summits, cryic			1											1
		Xeric Dystrocryepts-Vitrandic Dystrocryepts association, 0 to 25 percent slopes, mountain slopes, summits, cryic			1											1
Vitrandic Eutrocryepts	SSURGO	Xeric Dystrocryepts-Vitrandic Eutrocryepts complex, 0 to 15 percent slopes, wet/dry meadows, cryic			1											1
Vitrandic Haploxerolls	SSURGO	Nanamkin family-Vitrandic Haploxerolls complex, 15 to 30 percent slopes										1				1
		Vitrandic Haploxerolls, 0 to 15 percent slopes										1				1
Vitrandic Torriorthents	SSURGO	Delaney family-Rock outcrop-Vitrandic Torriorthents, ashy complex, 0 to 30 percent slopes		1												1
		Rock outcrop-Vitrandic Torriothents, gravelly complex, 30 to 60 percent slopes											1			1
Vitrandic Torripsamments	SSURGO	Vitrandic Torripsamments-Avalmount-Rock outcrop complex, 50 to 75 percent slopes		1									1			2
		Vitrandic Torripsamments-Cinder land association, 15 to 50 percent slopes		1												1
Vitrandic Xerofluvents	SSURGO	Vitrandic Xerofluvents, 0 to 15 percent slopes										1				1
Vitrandic Xeropsamments	SSURGO	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 percent slopes										1				1
		Vitrandic Haploxerolls-Vitrandic Xeropsamments, warm complex, 15 to 30 percent slopes										1				1
		Vitrandic Xeropsamments, 15 to 30 percent slopes										1				1
		Vitrandic Xeropsamments, 30 to 60 percent slopes										1				1
		Vitrandic Xeropsamments, warm, 0 to 15 percent slopes										1				1
		Vitrandic Xeropsamments, warm, 15 to 30 percent slopes										1				1
		Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes										1				1
Vitrandic Xeropsamments 2	SSURGO	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes										1				1
		Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes										1				1
		Vitrandic Xerorthents, pumiceous-Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes										1				1
Vitrandic Xerorthents	SSURGO	Oxyaquic Dystroxerepts-Dystric Xerorthents-Vitrandic Xerorthents-Rubble land complex, stony, 0 to 20 percent slopes, mountain valleys, mesic										1				1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Oxyaquic Xerorthents-Tuolumne-Vitrandic Xerorthents-Rubble land complex, stony, 0 to 20 percent slopes, mountain valleys, mesic										1				1
		Vitrandic Xerorthents, 15 to 30 percent slopes										1				1
		Vitrandic Cryorthents, pumiceous-Vitrandic Cryorthents-Vitrandic xerothents, pumiceous complex, 0 to 15 percent slopes										2				2
		Vitrandic Haploxerolls- Vitrandic Xerothents, ashy, warm complex, 15 to 30 percent slopes										1				1
		Vitrandic Xerochrepts-Rock outcrop complex, 30 to 60 percent slopes										1				1
		Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15 percent slopes										1				1
		Vitrandic Xerorthents, pumiceous, warm-Vitrandic Xerothents complex, 0 to 30 percent slopes										1				1
		Vitrandic Xerorthents, pumiceous, warm-VitrandicHaploxerolls, pumiceous-Vitrandic Xerothents, ashy, warm complex, 0 to 15 percent slopes										1				1
		Vitrandic Xerorthents, pumiceous-Vitrandic Xeropsamments comples, 0 to 15 percent slopes										1				1
		Vitrandic Xerothents-Vitrandic Xerorthents, ashy complex, 30 to 60 percent slopes										1				1
Vitrandic Xerorthents 2	SSURGO	Vitrandic Xerochrepts-Rock outcrop complex, 30 to 60 percent slopes										1				1
		Vitrandic Cryorthents, ashy-Vitranic Xerothents-Rock outcrop complex, 30 to 60 percent slopes										1				1
		Vitrandic Xerothents, ashy-Rock outcrop complex, 15 to 30 percent slopes										1				1
Voyager	SSURGO	Voyager-Ieuhman complex, 0 to 2 percent slopes									1					1
Wadesprings	SSURGO	Wadesprings stony loam, 15 to 50 percent slopes	1													1
		Wadesprings stony loam, 50 to 75 percent slopes	1													1
Walong	SSURGO	Loslobos-Walong association, 5 to 30 percent slopes	1													1
		Walong sandy loam, 15 to 30 percent slopes	1													1
		Walong sandy loam, 30 to 50 percent slopes	1													1
		Walong-Arujo sandy loams, 15 to 30 percent slopes	1													1
		Walong-Arujo sandy loams, 30 to 50 percent slopes	1													1
		Walong-Arujo sandy loams, 50 to 75 percent slopes	1													1
		Walong-Blasingame-Rock outcrop association, 30 to 60 percent slopes	1													1
		Walong-Edmundston association, steep	1													1
		Walong-Edmundston association, very steep	1													1
		Walong-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Walong-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Walong-Tunis-Rock outcrop association, 30 to 60 percent slopes	1													1
WARDENOT	STATSGO	WARDENOT-IZO-ARDIVEY (CA783)							1							1
Warrior	SSURGO	Warrior gravelly loamy sand, 2 to 8 percent slopes									1					1
		Warrior very gravelly sandy loam, 5 to 15 percent slopes									1					1
		Warrior-Xerofluvents association, 0 to 4 percent slopes											1			1
Wasco	SSURGO	Wasco fine sandy loam									1					1
		Wasco sandy loam									1					1
		Wasco sandy loam, 0 to 1 percent slopes									1					1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Wasco sandy loam, 0 to 2 percent slopes									1					1
		Wasco sandy loam, 0 to 5 percent slopes									1					1
		Wasco sandy loam, 2 to 5 percent slopes									1					1
Washoe	SSURGO	Mackey-Washoe families complex, 3 to 15 percent slopes			1											1
Wasioja	SSURGO	Wasioja sandy loam, 2 to 9 percent slopes		1												1
		Wasioja sandy loam, cool, 5 to 9 percent slopes		1												1
Wassit	SSURGO	Wassit very stony sandy loam, 30 to 50 percent slopes					1									1
Water	SSURGO	Water													1	1
		Water-perennial													1	1
	STATSGO	WATER (CAW)													1	1
Waterman family	SSURGO	Waterman-Sur families-Rock outcrop complex, 30 to 60 percent slopes	1													1
Waterman family 2	SSURGO	Waterman-Sur families-Rock outcrop complex, 30 to 60 percent slopes	1													1
Waterpeak	SSURGO	Waterpeak-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Waterpeak-Sofgran-Temo association	1													1
Waterpeak 2	SSURGO	Waterpeak-Buggin-Rock outcrop association	1													1
		Waterpeak-Rock outcrop complex, 30 to 75 percent slopes	1													1
Water-perennial	SSURGO	Water-perennial													1	1
Waterwheel	SSURGO	Waterwheel-Craneflat complex, 35 to 70 percent slopes, mountain slopes, frigid	1													1
		Waterwheel-Humic Dystroxerepts complex, 15 to 45 percent slopes, mountain slopes, frigid	1													1
Watterson	SSURGO	Watterson gravelly loamy sand, 0 to 4 percent slopes								1						1
		Watterson gravelly loamy sand, wet, 0 to 4 percent slopes								1						1
		Watterson gravelly sandy loam, 0 to 2 percent slopes								1						1
		Watterson gravelly sandy loam, 4 to 15 percent slopes								1						1
		Watterson sandy loam, 0 to 4 percent slopes								1						1
		Watterson-Conway-Ulymeyer complex, 0 to 15 slopes slopes								1						1
Watterson family	SSURGO	Watterson family-Torriorthentic Haploxerolls complex, 5 to 15 percent slopes								1						1
Waukena	SSURGO	Waukena fine sandy loam						1								1
		Waukena loam						1								1
Weedpatch	SSURGO	Weedpatch clay loam, 0 to 1 percent slopes						1								1
Wekoda	SSURGO	Wekoda clay, partially drained, 0 to 1 percent slopes								1						1
Wellington	SSURGO	Wellington family, 2 to 9 percent slopes		1												1
		Wellington family, dry, 2 to 9 percent slopes		1												1
Wellington family	SSURGO	Wellington family, 2 to 9 percent slopes		1												1
		Wellington family, dry, 2 to 9 percent slopes		1												1
		Wellington family, moist, 2 to 9 percent slopes		1												1
Wenzel	SSURGO	Merlin-Wenzel families-Rock outcrop, volcanic association, 5 to 60 percent slopes	1													1
Westcamp	SSURGO	Westcamp loam, partially drained									1					1
		Westcamp silt loam, partially drained, 0 to 2 percent slopes									1					1
Westguard	SSURGO	Inyo-Westguard association, 0 to 2 percent slopes						1								1
		Westguard-Rienhakel association, 0 to 2 percent slopes						1								1
Westhaven	SSURGO	Excelsior, sandy substratum-westhaven association, flooded, 0 to 2 percent slopes									1					1
		Westhaven clay loam, 0 to 2 percent slopes									1					1

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		Westhaven clay loam, saline-alkali, 0 to 2 percent slop es									1					1
		Westhaven fine sandy loam									1					1
		Westhaven loam, 0 to 2 percent slopes									1					1
		Westhaven loam, 2 to 5 percent slopes									1					1
Wheelridge	SSURGO	Wheelridge gravelly loamy sand, 0 to 2 percent slopes			1											1
Wherry	SSURGO	Wherry clay, 0 to 1 percent slopes											1			1
Whiterock	SSURGO	Whiterock rocky fine sandy loam, 3 to 8 percent slopes	1													1
		Whiterock rocky fine sandy loam, 30 to 45 percent slopes	1													1
		Whiterock very rocky fine sandy loam, 8 to 30 percent slopes	1													1
Whitewolf	SSURGO	Whitewolf coarse sandy loam									1					1
		Whitewolf coarse sandy loam, 0 to 2 percent slopes									1					1
		Whitewolf loamy sand, 0 to 2 percent slopes									1					1
		Whitewolf loamy sand, 0 to 2 percent slopes, occasionally flooded									1					1
		Whitewolf loamy sand, 0 to 2 percent slopes, rarely flooded									1					1
		Whitewolf loamy sand, 2 to 5 percent slopes									1					1
		Whitewolf loamy sand, cool, 2 to 5 percent slopes											1			1
		Whitewolf-Riverwash complex, 0 to 5 percent slopes, frequently flooded											1			1
Whitewolf family	SSURGO	Whitewolf-Toquerville families association, 15 to 50 percent slopes	1													1
		Whitewolf-Toquerville families association, warm, 15 to 50 percent slopes	1													1
Whitney	SSURGO	Whitney and Rocklin gravelly sandy loams, 3 to 15 percent slope		1												1
		Whitney and Rocklin sandy loams, 3 to 8 percent slopes		1												1
		Whitney and Rocklin sandy loams, 8 to 15 percent slopes		1												1
		Whitney fine sandy loam, 3 to 8 percent slopes		1												1
		Whitney fine sandy loam, 8 to 15 percent slopes		1												1
		Whitney loam, 0 to 3 percent slopes		1												1
		Whitney loam, 3 to 8 percent slopes		1												1
		Whitney loam, 8 to 15 percent slopes		1												1
		Whitney sandy loam, 15 to 30 percent slopes, eroded		1												1
		Whitney-Trigo fine sandy loams, 3 to 8 percent slopes		1												1
Wind River family	SSURGO	Wind River family-Dome-Rock outcrop association, moderately steep	1													1
		Wind River family-Monache variant, drained, warm association, sloping	1													1
		Wind River family-Rock outcrop association, moderately steep	1													1
		Wind River family-Rock outcrop association, steep	1													1
		Wind River family-Shaver association, steep	1													1
WINDY	STATSGO	WACA-WINDY-JIGGS (CA853)			1											1
Windyridge	SSURGO	Windyridge-Freelpeak-Rock outcrop complex, 8 to 30 percent slopes	1													1
Winerton	SSURGO	Winerton fine sandy loam, 0 to 2 percent slopes								1						1
		Winerton-Hessica complex, 0 to 2 percent slopes								1						1
Wingap	SSURGO	Wingap-Pinyonpeak association, 8 to 30 percent slopes	1													1
Winnedumah	SSURGO	Winnedumah fine sandy loam, 0 to 2 percent slopes						1								1
		Winnedumah silt loam, 0 to 2 percent slopes						1								1
Wisflat	SSURGO	Belgarra-Wisflat association, 8 to 50 percent slopes	1													1
		Domengine-Wisflat-Rock outcrop association 30 to 65 percent slopes	1													1

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		Exclose-Wisflat-Morenogulch association, 30 to 65 percent slopes	1													1
		Exclose-Wisflat-Rock outcrop association, 30 to 65 percent slopes	1													1
		Grazer-Badland-Wisflat association, 15 to 75 percent slopes	1													1
		Grazer-Wisflat-Arburua association, 8 to 50 percent slopes	1													1
		Grazer-Wisflat-Exclose association, 30 to 65 percent slopes	1													1
		Millsholm-Wisflat-Lilten association, 30 to 65 percent slopes	1													1
		Nodhill-Arburua-Wisflat association, 15 to 65 percent slopes	1													1
		Nodhill-Wisflat-Rock outcrop complex, 15 to 50 percent slopes	1													1
		Wisflat-Borreguero-Rock outcrop complex, 50 to 70 percent slopes	1													1
		Wisflat-Rock outcrop-Arburua complex, 15 to 30 percent slopes	1													1
Wisflat 2	SSURGO	Rock outcrop-Wisflat-Arburua complex, 50 to 65 percent slopes	1													1
		Wisflat-Rock outcrop-Arburua complex, 30 to 50 percent slopes		1												1
Wisheylu	SSURGO	Wisheylu loam, 3 to 9 percent slopes	1													1
		Wisheylu loam, 30 to 45 percent slopes	1													1
		Wisheylu loam, 45 to 70 percent slopes	1													1
		Wisheylu loam, 9 to 30 percent slopes	1													1
		Wisheylu very rocky loam, 3 to 30 percent slopes	1													1
Wolfcut	SSURGO	Wolfcut very stony loam, 8 to 30 percent slopes			1											1
Woolstalf	SSURGO	Woolstalf-Hotaw variant complex, 30 to 50 percent slopes	1													1
		Woolstalf-Hotaw variant-Rock outcrop complex, 50 to 75 percent slopes	1													1
		Woolstalf-Rock outcrop complex, 30 to 50 percent slopes	1													1
		Woolstalf-Rock outcrop complex, 50 to 75 percent slopes	1													1
	STATSGO	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)	1													1
Woolstalf 2	SSURGO	Woolstalf-Rock outcrop complex, 10 to 30 percent slopes	1													1
Wortley	SSURGO	Wortley-Indiano-Rock outcrop complex, 30 to 60 percent slopes	1													1
Wrango	SSURGO	Wrango family, 5 to 15 percent slopes		1												1
		Wrango-Mackey families complex, 3 to 15 percent slopes		1												1
Wrango family	SSURGO	Rock outcrop-Wrango family complex, 60 to 90 percent slopes		1												1
		Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes		1												1
		Wrango family-Torriorthentic Haploxerolls complex, 30 to 60 percent slopes		1												1
		Wrango-Atter families complex, 60 to 90 percent slopes		1												1
		Wrango-Berent families complex, 2 to 30 percent slopes		1												1
Wrango family 2	SSURGO	Wrango family-Rock outcrop complex, 15 to 30 percent slopes	1													1
Wunjey	SSURGO	Wunjey fine sandy loam									1					1
		Wunjey silt loam									1					1
		Wunjey very fine sandy loam, moderately saline-alkali, 0 to 1 percent slopes									1					1
		Wunjey very fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes									1					1
		Wunjey very fine sandy loam, strongly saline-alkali, 0 to 1 percent slopes									1					1
		Wunjey very fine sandy loam, strongly saline-alkali, channeled, 1 to 8 percent slopes									1					1
Wutchumna	SSURGO	Wutchumna-Rock outcrop association, 5 to 50 percent slopes	1													1
Wyman	SSURGO	Wyman gravelly loam, 0 to 2 percent slopes			1											1
		Wyman loam, 0 to 2 percent slopes			1											1
		Wyman loam, 2 to 5 percent slopes			1											1

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			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Xeralfs	SSURGO	Xeralfs, loamy			1											1
Xererts	SSURGO	Xererts-Xerolls complex, steep	1													1
Xeric Argidurids	SSURGO	Xeric Argidurids, 0 to 2 percent slopes		1												1
		Xeric Argidurids, 2 to 9 percent slopes		1												1
Xeric Dystrocryepts	SSURGO	Canisrocks-Xeric Dystrocryepts association, 5 to 30 percent slopes, mountain valleys, moraines, cryic	1													1
		Canisrocks-Xeric Dystrocryepts complex, 15 to 45 percent slopes, mountain slopes, moraines, cryic	1													1
		Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, cryic	1													1
		Typic Cryorthents-Xeric Dystrocryepts-Oxyaquic Dystrocryepts complex, 15 to 45 percent slopes, metamorphic, mountain slopes, lateral moraines, cryic	1													1
Xeric Dystrocryepts 2	SSURGO	Rock outcrop-Canisrocks-Xeric Dystrocryepts association, 0 to 35 percent slopes, mountain valleys, scoured, filled, cryic	1													1
		Rock outcrop-Canisrocks-Xeric Dystrocryepts complex, 0 to 35 percent slopes, mountain slopes, cryic	1													1
Xeric Haplargids	SSURGO	Xeric Haplargids, 5 to 30 percent slopes		1												1
		Xeric Haplargids, moist, 5 to 30 percent slopes		1												1
		Xeric Haplargids-Lithic Xeric Haplargids complex, mesic, 5 to 30 percent slopes		1												1
Xeric Haplodurids	SSURGO	Xeric Haplodurids, 2 to 9 percent slopes		1												1
Xeric Torriorthents	SSURGO	Pleito-Xeric Torriorthents, very gravelly association, 15 to 100 percent slopes	1													1
		Xeric Torriorthents, stratified-Cuyama complex, 15 to 5 0 percent slopes		1												1
		Xeric Torriorthents, very gravelly-Badlands complex, 30 to 75 percent slopes	1													1
		Xeric Torriorthents, very steep	1													1
		Xeric Torriorthents-Typic Torriorthents-Rock outcrop association, 40 to 85 percent slopes	1													1
		Berent family-Xeric Torriorthents complex, 30 to 60 percent slopes	1													1
Xeric Vitricryands	SSURGO	Xeric Vitricryands 25 to 55 percent slopes					1									1
		Xeric Vitricryands, 0 to 30 percent slopes					1									1
		Xeric Vitricryands-Typic Cryorthents, tephritic complex, 0 to 45 percent slopes					1									1
Xerofluvents	SSURGO	Xerofluvents, 0 to 5 percent slopes											2			2
		Xerofluvents, flooded											1			1
		Xerofluvents, loamy											1			1
		Xerofluvents, occasionally flooded-Riverwash complex, 0 to 5 percent slopes											1			1
		Xerofluvents-Xerorthents association, sloping											1			1
		Xerofluvents-Xerorthents-Riverwash association, sloping											1			1
Xerolls	SSURGO	Xerolls, very steep	1													1
		Xerolls-Rock outcrop complex, very steep	1													1
Xerorthents	SSURGO	Gorman-Typic Xerorthents-Xerorthents, shallow complex, 30 to 100 percent slopes	1													1
		Rock outcrop-Xerorthents association, steep	1													1
		Typic Xerorthents, mesic-Haploxerepts-Xerorthents, sandy association, 30 to 75 percent slopes	1													1
		Xerorthents, loamy, very steep	1													1
		Xerorthents, very gravelly, 50 to 75 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)												Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
		Xerorthents, very steep	1													1
		Xerorthents-Badlands complex, 30 to 75 percent slopes	1													1
		Xerorthents-Rock outcrop complex, 30 to 75 percent slopes	1													1
		Xerorthents-Rock outcrop complex, very steep	1													1
Xerorthents 2	SSURGO	Rubble land-Xerorthents complex, 5 to 30 percent slopes	1													1
Xyno	SSURGO	Xyno-Canebrake-Pilotwell association, 30 to 60 percent slopes	1													1
		Xyno-Canebrake-Pilotwell association, dry, 30 to 60 percent slopes	1													1
		Xyno-Canebrake-Pilotwell complex, 5 to 30 percent slopes	1													1
		Xyno-Canebrake-Rock outcrop association, 30 to 60 percent slopes	1													1
		Xyno-Faycreek-Rock outcrop complex, 30 to 60 percent slopes	1													1
		Xyno-Rock outcrop-Canebrake association, 30 to 60 percent slopes	1													1
Xyno 2	SSURGO	Xyno-Faycreek-Rock outcrop complex, 30 to 60 percent slopes	1													1
Yaney	SSURGO	Yaney-Yaney loam association, 0 to 2 percent slopes								1						1
Yellowhills family	SSURGO	Yellowhills family, 2 to 15 percent slopes		1												1
		Yellowhills-Brantel families complex, 2 to 5 percent slopes		1												1
Yellowrock	SSURGO	Seaman-Yellowrock-Cajon complex, 0 to 2 percent slopes								1						1
		Yellowrock sand, 0 to 5 percent slopes								1						1
		Yellowrock-Mazourka complex, 0 to 2 percent slopes								1						1
		Yellowrock-Seaman complex, 2 to 5 percent slopes								1						1
YERMO	STATSGO	YERMO-GYNELLE-GREYEAGLE (CA786)							1							1
Yermo 1	SSURGO	Yermo stony-Yermo complex, 0 to 5 percent slopes			1											1
Yermo 2	SSURGO	Yermo stony-Yermo complex, 5 to 15 percent slopes						1								1
		Yermo stony-Yermo complex, cool, 5 to 15 percent slopes						1								1
Yermo 3	SSURGO	Yermo extremely gravelly sandy loam, 2 to 5 percent slopes								1						1
		Yermo very gravelly sandy loam, 2 to 5 percent slopes								1						1
Yettem	SSURGO	Yettem sandy loam, 0 to 2 percent slopes									1					1
		Yettem sandy loam, 2 to 5 percent slopes									1					1
Yokohl	SSURGO	Yokohl clay loam, moderately deep, 3 to 9 percent slopes		1												1
		Yokohl gravelly loam, 3 to 9 percent slopes		1												1
		Yokohl loam, 0 to 3 percent slopes		1												1
		Yokohl loam, 3 to 9 percent slopes		1												1
		Yokohl loam, moderately deep, 0 to 3 percent slopes		1												1
		Yokohl loam, moderately deep, 3 to 9 percent slopes		1												1
Youd	SSURGO	Youd fine sandy loam			1											1
		Youd loam, 0 to 1 percent slopes			1											1
Yribarren	SSURGO	Yribarren clay loam, 0 to 2 percent slopes				1										1
		Yribarren clay loam, 2 to 5 percent slopes				1										1
		Yribarren loam, 0 to 2 percent slopes				1										1
Yuko	SSURGO	Yuko family-Rock outcrop, granitic association, 15 to 30 percent slopes	1													1
		Yuko family-Rock outcrop, granitic association, 30 to 60 percent slopes	1													1
		Yuko family-Rock outcrop, granitic association, 60 to 80 percent slopes	1													1

Appendix C. Soil Types and Age Assignments Used for this Study (Listed Alphabetically by Soil Series and then Soil Name)

Soil Series or Map Unit	Dataset	Soil Name and Surface Slope	Landform Age (map unit)													Grand Total
			pQ	OP	LP	LtP	EHv	EH	MH	LH	LtH	LtHv	Hm	Hacf	H2O	
Zaca	SSURGO	Zaca clay, 3 to 8 percent slopes	1													1
Zalvidea	SSURGO	Zalvidea sandy clay loam, partially drained, 0 to 1 percent slopes								1						1
		Zalvidea sandy loam, partially drained, 0 to 2 percent slopes								1						1
Zerker	SSURGO	Zerker loam, 2 to 5 percent slopes		1												1
		Zerker loam, 5 to 9 percent slopes		1												1
		Zerker sandy clay loam, 0 to 2 percent slopes		1												1
Zonap	SSURGO	Zonap-Badlands-Beam complex, 30 to 75 percent slopes	1													1
		Zonap-Beam complex, 15 to 30 percent slopes	1													1
Zono	SSURGO	Zono coarse sand, 15 to 50 percent slopes										1				1
(blank)	STATSGO	(blank)				1										1
Grand Total			1231	375	211	37	4	127	32	125	438	88	102	25	6	2801

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
ACIDIC ROCK LAND	2										2
AHART-ROCK OUTCROP	6										6
AHART-WACA	18										18
AHWAHNEE	33										33
AHWAHNEE-ROCK	8										8
AIKEN	92										92
AIKEN-COHASSET	6										6
AIKEN-HORSESHOE	3										3
ALAMO		3									3
ALAMO-FIDDYMENT		5									5
ALCAPAY						5					5
ALDAX-MILLICH	16										16
ALDAX-ROCK OUTCROP	3										3
ALDI VARIANT-KYBURZ	6										6
ALDI VARIANT-MARTIS		3									3
ALDI-AQUOLLS	3										3
ALDI-KYBURZ	2										2
ALDI-KYBURZ-ROCK OUTCROP	6										6
ALLUVIAL LAND								6			6
ALMENDRA						7					7
ALTAMONT	30										30
ALTAMONT	12										12
ALTAMONT AND MILLSHOLM	5										5
ALTAMONT-CONTRA COSTA	9										9
ALTAMONT-DIBBLE	8										8
ALTAMONT-GULLIED	16										16
ALTAMONT-NACIMIENTO	4										4
ALTAMONT-ROCKY	5										5
ALTAMONT-SEHORN	18										18
ALTAMONT-SHEDD	4										4
AMADOR-GILLENDER	7										7
AMERICANOS-URBAN			5								5
ANDIC CRYUMBREPTS	2										2
ANDREGG	45										45
ANDREGG-ROCK OUTCROP	6										6
ANDREGG-SHENANDOAH	6										6
ANDREGG-URBAN	19										19
ANITA			6								6
ANITA-GALT			9								9
AQUEPTS AND UMBREPTS						2					2
AQUOLLS						1					1
AQUOLLS AND BOROLLS						2					2
ARAND							9				9
ARAND-RIVERWASH								5			5
ARBUCKLE			49								49
ARBUCKLE-HILLGATE			6								6
AREAS EXCAVATED									1		1
AREAS UNDER WATER										1	1
ARGONAUT	23										23
ARGONAUT-AUBURN	27										27
ARGONAUT-AUBURN-URBAN	5										5
ARGONAUT-ROCK OUTCROP	6										6
ARGOVAR	3										3
ARTOIS		12									12
AUBERRY	34										34
AUBERRY-ROCK OUTRCROP	9										9
AUBURN	64										64
AUBURN-ARGONAUT	10										10
AUBURN-ARGONAUT-ROCK	27										27
AUBURN-SOBRANTE	87										87
AUBURN-SOBRANTE-ROCK	49										49

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
AUBURN-TIMBUCTOO-ARGONAUT	12										12
AYAR	18										18
AYAR -NACIMIENTO	4										4
BABCOCK	24										24
BABCOCK-ROCK	8										8
BADENAUGH			11								11
BADENAUGH-MARTINECK-DOTTA		3									3
BALCOM	17										17
BALCOM-AYAR	15										15
BALCOM-DIBBLE	3										3
BALMAN					9						9
BALMAN-RAMELLI							3				3
BAMTUSH-MARPA	12										12
BASIC ROCK LAND	2										2
BEACHES								13			13
BEARVALLEY						4					4
BECKWOURTH-LOYALTON					4						4
BEECEE	5										5
BEECEE-LYDON	7										7
BELLAVISTA			9								9
BIDART						7					7
BIDWELL					12						12
BIEBER							13				13
BIGHILL-MUSICK	2										2
BIGHILL-ROCK OUTCROP	3										3
BIGRIDGE-MINNIECREEK	28										28
BILLSCABIN-BONNEYRIDGE	16										16
BLAVO						6					6
BOAR-SLEEPER	10										10
BOGA-LOEMSTONE			16								16
BONEPILE	10										10
BONEPILE TAXADJUNCT	4										4
BONNEYRIDGE	11										11
BONNEYRIDGE-CHAWANAKEE	37										37
BONNEYRIDGE-LEWISFLAT	25										25
BOOMER	14										14
BOOMER	74										74
BOOMER-PENDOLA	14										14
BOOMER-ROCK OUTCROP	33										33
BOSQUEJO						23					23
BOTTLEHILL-LOGTRAIN	6										6
BOTTLEHILL-WALKERMINE	19										19
BRENTWOOD						5					5
BRESSA-DIBBLE	4										4
BRUELLA		12									12
BUCKING FAMILY							3				3
BUCKING-BUCKING	12										12
BUMLAKE-ROADCAT			9								9
BURRIS		9									9
BUSACCA						4					4
BUTTES-MILLSHOLM	5										5
BYINGTON							5				5
CAGWIN ROCK OUTCROP	48										48
CALCIC HAPLOXEROLLS						4					4
CALLAT			12								12
CALPINE		11									11
CALPINE-LOVEJOY		8									8
CAMELIAN-UMPA	8										8
CAPAY						98					98
CAPERTON	5										5
CAPERTON-ANDREGG	12										12

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
CAPERTON-ROCK OUTCROP	10										10
CARHART TAXADJUNCT		5									5
CARHART-ANITA TAXADJUNCT		5									5
CASSENAI	60										60
CASTRO						18					18
CELIO						5					5
CELIO VARIANT-ROCK OUTCROP	5										5
CELIO-GEFO-AQUOLLS						3					3
CERPONE-TYPIC	13										13
CHAIX	53										53
CHAIX VARIANT-ROCK OUTCROP	6										6
CHAIX-CHAWANAKEE	9										9
CHAIX-HOLLAND	8										8
CHAIX-HOTAW	15										15
CHAIX-HURLBUT	4										4
CHAIX-PILLIKEN	4										4
CHAIX-ROCK OUTCROP	8										8
CHAIX-WAPI	21										21
CHARGER							7				7
CHAWANAKEE	5										5
CHAWANAKEE-BILLSCABIN	5										5
CHAWANAKEE-CHAIX-HOTAW	10										10
CHEROKEESPRING	6										6
CHEROTABLE-KRAMN	6										6
CHICO			5								5
CHINACAMP	29										29
CHRISTOPHER			15								15
CHRISTOPHER-GEFO				6							6
CINDER LAND-SIERRAVILLE	3										3
CLALLAM	13										13
CLALLAM - ROCK OUTCROP	9										9
CLALLAM-HOLLAND	10										10
CLEAR LAKE							92				92
CLEARHAYES-HAMSLOUGH			9								9
CLIMARA	3		2								5
COALCANYON TAXADJUNCT	19		3								22
COALCANYON-COONHOLLOW	13		16								29
COALCANYON-ROCK OUTCROP	7		15								22
COALCANYON-TALUS	4										4
CODORA						4					4
COHASSET	115										115
COHASSET-AIKEN-CROZIER	9										9
COHASSET-HARTLESS	2										2
COHASSET-MCCARTHY	26										26
COLLUVIAL LAND	7										7
COLUMBIA								135			135
COLUMBIA-URBAN								11			11
COLUSA					5						5
COMETA		8									8
COMETA-FIDDYMENT		6									6
COMETA-RAMONA		6									6
CONEJO						27					27
CONEJO-TISDALE						6					6
CONEJO-URBAN						10					10
CONTRA COSTA	16										16
CONTRA COSTA-ALTAMONT	6										6
CONTRA-COSTA-MILLSHOLM	7										7
COOLBRITH						8					8
CORBETT	4										4
CORBIERE						12					12
CORIDGE-ROCK OUTCROP	8										8

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
CORNING		25									25
CORNING-GULLIED		3									3
CORNING-NEWVILLE		7									7
CORNING-REDDING		10									10
CORRECO			23								23
CORTINA							21				21
CORVAL							8				8
COSUMNES								22			22
COSUMNES-URBAN								7			7
COYOTECREEK						5					5
CREVISCREEK			6								6
CROZIER	4										4
CROZIER-COHASSET	12										12
CROZIER-MARIPOSA	3										3
CROZIER-MCCARTHY	13										13
CRYSTALHILL-OREGONGULCH	35										35
CRYUMBREPTS							1				1
CRYUMBREPTS ASSOCIATION			2								2
CUT AND FILL									1		1
DAGGET	54										54
DAGGET-ROCK OUTCROP	8										8
DAM									7		7
DEADWOOD-CLALLAM	20										20
DEADWOOD-KISTIRN	5										5
DEADWOOD-ROCK OUTCROP	8										8
DEJONAH-STAGPOINT	15										15
DELLEKER		11									11
DELLEKER-KYBURZ	3										3
DELPIEDRA	3										3
DIABLO	1										1
DIAMOND SPRINGS	22										22
DIBBLE	9										9
DIBBLE-MILLSHOLM	14										14
DIERSSEN		20									20
DIXMINE-MAC	11										11
DIXMINE-SPINE	11										11
DIXMINE-TOADTOWN	29										29
DODGELAND (frequent)								6			6
DODGELAND (occasional)						6					6
DOEMILL-JOKERST	20										20
DOME			1								1
DOME			1								1
DOME-ZEIBRIGHT			4								4
DOTTA		26									26
DUBAKELLA	26										26
DUBAKELLA ROCK OUTCROP	5										5
DUMPS									6		6
DUNSTONE-ARGONAUT	8										8
DUNSTONE-LOAFERCREEK	53										53
DUNSTONE-LOMARICA	9										9
DURIC XERARENTS									13		13
DURIC XERARENTS-EASTBIGGS									6		6
DURIC XERARENTS-OROVILLE									4		4
DURIXERALFS		5									5
DURIXERALFS-GALT		7									7
DURIXERALFS-TYPIC		7									7
DURIXEROLLS-HAPLOXEROLLS						16					16
DYSTRIC LITHIC XEROCHREPTS	5										5
DYSTROXEREPTS-HAPLOXERALFS	8										8
EASTBIGGS		7									7
EASTBIGGS-GALT		6									6

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
EASTPARK		9									9
EDJOBE						4					4
EGBERT							18				18
EGBERT-URBAN								6			6
ELLISPEAK-ROCK OUTCROP	18										18
ELLISPEAK-WACA	15										15
ELSEY-BEATSONHOLLOW	8										8
ENDOAQUOLLS						8					8
ERODED LAND, ALLUVIAL		2									2
ERODED LAND, SHALE	3										3
ESQUON						18					18
ESQUON-CLEARLAKE						5					5
ESQUON-NEERDOBE						7					7
ETSEL-MAYMEN-MARPA	9										9
EUER-AQUOLLS		3									3
EUER-MARTIS		4									4
EXCHEQUER	4										4
EXCHEQUER-ROCK OUTCROP	6										6
EXETER		4									4
FARWELL						18					18
FEATHER								3			3
FEATHERFALLS-ISLANDBAR	28										28
FIDDYMENT		21									21
FIDDYMENT-KASEBERG		4									4
FIDDYMENT-ORANGEVALE		7									7
FIDDYMENT-ORANGEVALE-URBAN		6									6
FIDDYMENT-URBAN		6									6
FLAGCANYON TAXADJUNCT		8									8
FLAGCANYON-WICKSCORNER		7									7
FLANLY	34										34
FLANLY-OROSE-VERJELES	12										12
FLANLY-ROCK OUTCROP	6										6
FLANLY-SOMMEYFLAT	8										8
FLANLY-SWEDESFLAT	6										6
FLANLY-SWEDESFLAT-RACKERBY	8										8
FLORAND-LOSTRIDGE	9										9
FLUVAQUENTIC HUMAQUEPTS	3										3
FLUVAQUENTS								10	3		13
FLUVENTS								1			1
FOPIANO-WACA	5										5
FORBES-DUBAKELLA	6										6
FORBES-HOLLAND	3										3
FOUNTS-YORKVILLE	6										6
FRANKTOWN-ALDI-ROCK OUTCROP	6										6
FREELPEAK-WINDYRIDGE	8										8
FREEZEOUT-YOLLABOLLY	10										10
FUGAWEE SANDY LOAM	4										4
FUGAWEE VARIANT-AQUOLLS	3										3
FUGAWEE VARIANT-FUGAWEE	2										2
FUGAWEE-JORGE	3										3
FUGAWEE-POLECREEK	5										5
FUGAWEE-ROCK OUTCROP	3										3
FUGAWEE-ROCK OUTCROP-TAHOMA	15										15
FUGAWEE-TAHOMA	7										7
GALEPPI			11								11
GALT						40					40
GALT-URBAN						6					6
GARRETSON								4			4
GAZWELL								6			6
GEFO						12					12
GEFO-AQUOLLS-CELIO						3					3

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
GERLE			1								1
GERLE-NANNY			4								4
GERLE-NOTNED			2								2
GERLE-TALLAC			4								4
GERLE-UMBREPTS			2								2
GIANELLA							32				32
GIBSONVILLE-WACA	12										12
GLEAN	8										8
GOLDEAGLE-POSITAS	9										9
GOODLOW-DRIVERS	4										4
GOODLOW-HAPLAQUOLLS						6					6
GOULDING	8										8
GOVSTANFORD								10			10
GRANDBEND							10				10
GRANTIC ROCK LAND	7										7
GRAVEL PITS									4		4
GRAVELLY ALLUVIAL LANDS							4		1		5
GRIDLEY			44								44
GRIFFGULCH-SURNUF	16										16
GRIFFGULCH-SURNUF-SPINE	16										16
GULLIED LAND	1										1
HADSELVILLE-PENTZ	11										11
HANGTOWN-LITHIC XERUMBREPTS	2										2
HANGTOWN-SMOKEY	4										4
HAPLIC PALEXERALFS		4									4
HAPLOXERALFS		6									6
HAPLOXERANDS			28								28
HAPLOXERANDS-AQUIC							6				6
HAPLOXERERTS	5										5
HAPLOXEROLLS						14					14
HARTLESS	3										3
HARTLESS-MIERUF	6										6
HARTLESS-NEUNS	4										4
HARTSMILL-MOUNTHOPE	24										24
HAYPRESS	3										3
HAYPRESS-BONTA	4										4
HAYPRESS-BUCKING	8										8
HAYPRESS-SATTLEY	4										4
HAYPRESS-TOIYABE	33										33
HAYPRESS-TOIYABE ROCK OUTCROP	4										4
HAYPRESS-TOIYABE-ROCK OUTCROP	3										3
HEDGE			8								8
HELLHOLE PEAT						4					4
HENNEKE	7										7
HENNEKE-MONTARA ROCK OUTCROP	15										15
HENNEKE-OKIOTA	12										12
HENNEKE-ROCK OUTCROP	4										4
HICKSVILLE					24						24
HIETANEN-MAC	25										25
HILLGATE		65									65
HILLGATE-GULLIED		10									10
HODA	22										22
HODA-MUSICK	13										13
HODA-ROCK OUTCROP	4										4
HOHMANN	8										8
HOLILLIPAH								37			37
HOLLAND	93										93
HOLLAND-BIGHIL	4										4
HOLLAND-CHAIX	4										4
HOLLAND-HODA	35										35
HOLLAND-MUSICK	4										4

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
HOLLAND-PILLIKEN	4										4
HOLLAND-SKALAN	2										2
HOLLAND-WAPI	10										10
HOLLENBECK						13					13
HOLLENBECK-URBAN						5					5
HORSESHOE	45										45
HORSESHOE-AIKEN	4										4
HORSESHOE-JOCAL	3										3
HORSESHOE-RUBBLE	5										5
HORST						8					8
HOTAW	19										19
HOTAW-CHAWANAKEE	14										14
HUGO	12										12
HULLS	12										12
HULRBUT	20										20
HULRBUT-CHAIX	8										8
HURLBUT-DEADWOOD	18										18
HURLBUT-HOLLAND	4										4
HUSTABEL						5					5
HUYSINK-HORSESHOE		4									4
IGNORD						5					5
INKS	10										10
INKS-EXCHEQUER	6										6
INVILLE-MARTIS			2								2
INVILLE-RIVERWASH			3								3
INVILLE-WOODSEYE	8										8
IRON MOUNTAIN	13										13
IRON MOUNTAIN- ROCK OUTCROP	8										8
ISLANDBAR-CHAWANAKEE	24										24
JABU		10									10
JACINTO					8						8
JACKTONE					10						10
JAMES CANYON						10					10
JOBSIS-WHITTELL-ROCK OUTCROP	10										10
JOCAL	62										62
JOCAL-HARTLESS	4										4
JOCAL-MARIPOSA	3										3
JOKERST-DOEMILL	10										10
JORGE	43										43
JORGE-CRYUMBREPTS	5										5
JORGE-RUBBLE	4										4
JORGE-TAHOMA	41										41
JORGE-WACA	12										12
JOSEPHINE	115										115
JOSEPHINE-MARIPOSA	36										36
JOSEPHINE-MAYMEN	4										4
JOSEPHINE-ROCK OUTCROP	19										19
JOSEPHINE-SHEETIRON	3										3
KASEBERG-FIDDYMENT	7										7
KEYES		5									5
KILAGA		20									20
KIMBALL		37									37
KIMBALL-GULLIED		3									3
KIMBALL-URBAN		6									6
KINGSBEACH			5								5
KINKEL VARIANT-COHASSET	8										8
KISTIRN-AIKEN	4										4
KNEERIDGE			20								20
KUSALSLOUGH							5				5
KYBURZ	1										1
KYBURZ-ALDI	14										14

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
KYBURZ-ROCK OUTCROP	9										9
KYBURZ-TROJAN	14										14
LANDLOW			6								6
LANG							21				21
LANG-URBAN							4				4
LAUGENOUR							16				16
LAUGENOUR -URBAN							5				5
LAVA FLOW-LAVATOP	8										8
LAVA FLOW-LUMPKIN	16										16
LEDFORD	1										1
LEDFORD-LEDFORD	10										10
LEDFORD-NOTNED	4										4
LEDFORD-ROCK OUTCROP	2										2
LEDMOUNT-MCCARTHY-ROCK OUTCROP	6										6
LEDMOUNT-ROCK OUTCROP	4										4
LEESVILLE						10					10
LEWISFLAT	21										21
LITHIC CRYUMBREPTS	5										5
LITHIC XERORTHENTS	9										9
LITHNIP-MEISS	20										20
LIVEOAK						33					33
LIVEOAK-GALT						16					16
LIVEOAK-URBAN						6					6
LIVERMORE						4					4
LLANOSECO						10					10
LOAMY ALLUVIAL LAND								7			7
LODO-GULLIED	8										8
LODO-MILLSAP	8										8
LODO-TEHAMA	14										14
LOFGREN-BLAVO						10					10
LOGTRAIN-BOTTLEHILL	7										7
LORACK		1									1
LORACK-SMOKEY		6									6
LOS GATOS	15										15
LOS GATOS-JOSEPHINE	5										5
LOS GATOS-PARRISH	4										4
LOVEJOY			10								10
LOYALTON					10						10
LUCKSEV-BUTTESIDE	17										17
LUMBERLY	2										2
LUMPKIN-ROCK OUTCROP	15										15
LYDON	12										12
LYDON-ROCK OUTCROP	18										18
MADE LAND									4		4
MADERA		10									10
MADERA-GALT		6									6
MALLARD			25								25
MARCUM			13								13
MARCUM-GRIDLEY			18								18
MARIA						10					10
MARIPOSA	62										62
MARIPOSA-JOCAL	15										15
MARIPOSA-JOSEPHINE	31										31
MARIPOSA-MAYMEN	9										9
MARIPOSA-ROCK OUTCROP	39										39
MARLA							6				6
MARTINECK		8									8
MARTIS-EUER		2									2
MARVIN					29						29
MARYSVILLE		3									3
MATERSON	12										12

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
MAYMEN	15										15
MAYMEN-ETSEL	22										22
MAYMEN-HOPLAND	31										31
MAYMEN-LOS GATOS	8										8
MAYMEN-MARIPOSA	7										7
MAYMEN-MILLSHOLM	3										3
MAYMEN-PARRISH	8										8
MAYMEN-ROCK OUTCROP	21										21
MAYWOOD							9				9
MCCARTHY	57										57
MCCARTHY-LEDMOUNT	24										24
MCQUARRIE-DUCO	8										8
MEDISAPRISTS								3			3
MEEKS			108								108
MEISS-GULLIED LAND	3										3
MEISS-ROCK OUTCROP	6										6
MEISS-WACA	13										13
MELODY-ROCK OUTCROP	32										32
MERRITT							19				19
METAMORPHIC	1										1
MIERUF	2										2
MILDRED	20										20
MILLERIDGE-BOXROBBER	30										30
MILLSAP	6										6
MILLSHOLM	96										96
MILLSHOLM-ALTAMONT	12										12
MILLSHOLM-CAPAY	6										6
MILLSHOLM-CONTRA COSTA	20										20
MILLSHOLM-GULLIED	4										4
MILLSHOLM-LODO	5										5
MILLSHOLM-ROCK OUTCROP	11										11
MILLSHOLM-SALTCANYON			7								7
MIXED ALLUVIAL LAND						1		3			4
MODA		3									3
MODA TAXADJUNCT-ARBUCKLE		5									5
MOKELUMNE	9										9
MOKELUMNE-PITS									7		7
MONTARA	4										4
MOONBEND						15					15
MOTTSVILLE-QUINCY					4						4
MOUNTHOPE-HARTSMILL	15										15
MOUNTYANA	10										10
MUDWASH	5										5
MUDWASH-TIMBERISLAND	9										9
MUNJAR-TUSCAN		8									8
MUSICK	32										32
MUSICK-ROCK OUTCROP	5										5
MYERS			26								26
MYERS-GULLIED			5								5
NACIMIENTO	22										22
NACIMIENTO-ALTAMONT	8										8
NACIMIENTO-CONTRA COSTA	22										22
NACIMIENTO-GULLIED	10										10
NATOMAS		5									5
NATOMAS-XERORTHENTS									3		3
NEERDOBE						8					8
NEUNS-MIERUF	2										2
NEUNS-SHEETIRON	7										7
NEUS	26										26
NEUS-BAMTUSH	15										15
NEUS-GOULDING	7										7

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
NEUS-MARPA	9										9
NEUS-ROCK OUTCROP	3										3
NEWLANDS-ROCK OUTCROP	6										6
NEWVILLE		18									18
NEWVILLE-GULLIED		9									9
NEWVILLE-LODO		3									3
NORTHMORE			9								9
NOTNED-GERLE			2								2
NOTNED-LEDFORD			4								4
NUEVA								10			10
OAKDALE		4									4
OAKDALE-URBAN		4									4
OBSKEL-OBSTRUCTION	17										17
OBSTRUCTION	5										5
OCHREPTS-ROCK OUTCROP	2										2
OCRAIG	8										8
OCRAIG-ROCK OUTCROP	5										5
OKIOTA-DUBAKELLA	6										6
OLASHES			15								15
OMNI							8				8
ONEIDAS			12								12
ORANGEVALE		5									5
ORANGEVALE-KASEBERG		13									13
ORDFERRY			7								7
ORLAND							27				27
ORLAND-CORTINA							4				4
ORMSBY							8				8
OROSE	8										8
OROSHORE-MOUNTHOPE	32										32
OROVILLE-THERMALITO		15									15
ORTHENTS-URBAN								5			5
OSWALD						10					10
OXYAQUIC								37			37
PAIGE			16								16
PALEXERULTS	23										23
PALLS-BOHNA	6										6
PALLS-STOHLMAN	10										10
PARADISO	10										10
PARDEE	4										4
PARDEE-RANCHOSECO	23										23
PARKSHILL-FLANLY	8										8
PARRISH	12										12
PARRISH-GULLIED	8										8
PARRISH-YORKVILLE	9										9
PARROTT (Frequent)								5			5
PARROTT (Occasional)							6				6
PARROTT-VERMET								4			4
PASQUETTI							6				6
PENTZ-LITHIC	7										7
PERKINS		29									29
PESCADERO						13					13
PETERS	5										5
PILLIKEN	2										2
PILLIKEN -ROCK OUTCROP	4										4
PITS									16		16
PLACER									44		44
PLAZA					29						29
PLEASANTON			16								16
POLEBAR	3										3
POLEBAR-GULLIED	5										5
POLEBAR-MILLSHOLM	6										6

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
PONTO	7										7
PORTERVILLE		6									6
PORTOLA	15										15
PORTOLA-ROCK OUTCROP	2										2
POSITAS		18									18
POWELLTON-OBSTRUCTION	6										6
POWELLTON-TOADTOWN	17										17
PUTT-MCCARTHY			6								6
PUTT-ROCK OUTCROP			21								21
PUTT-ZEIBRIGHT			4								4
QUARRIES									1		1
RALSTON-ROCK OUTCROP	4										4
RAMELLI							12				12
RAMONA			10								10
REBA		4									4
RED BLUFF		11									11
RED BLUFF-REDDING		7									7
RED BLUFF-URBAN		8									8
RED BLUFF-XERARENTS		7							10		17
REDBONE	12										12
REDDING		29									29
REDDING-CORNING		20									20
REDSLUFF			15								15
REDTOUGH		4									4
REDTOUGH-FALLAGER		8									8
REDTOUGH-REDSWALE		18									18
REIFF							17				17
RESCUE	16		6								22
RESCUE-ROCK OUTCROP	7										7
RETSONGULCH-FLUMEWALL	6										6
RICECROSS		15									15
RINCON				6							6
RINDGE								8			8
RIVERWASH								21			21
RIVERWASH-FLUVENTS								2			2
RIZ					29						29
ROCK LAND	29										29
ROCK OUTCROP	33		23								56
ROCK OUTCROP- WACA	3										3
ROCK OUTCROP- WAPI	4										4
ROCK OUTCROP-AHWAHNEE	6										6
ROCK OUTCROP-AUBURN	6										6
ROCK OUTCROP-CHAWANAKEE	3										3
ROCK OUTCROP-CLALLAM	4										4
ROCK OUTCROP-CRYUMBREPTS	6										6
ROCK OUTCROP-DEADWOOD	4										4
ROCK OUTCROP-DUBAKELLA	14										14
ROCK OUTCROP-ECHOLAKES	13										13
ROCK OUTCROP-FRANKTOWN	3										3
ROCK OUTCROP-LITHIC XERORTHENTS	8										8
ROCK OUTCROP-ROCKBOUND	13										13
ROCK OUTCROP-RUBBLE	6										6
ROCK OUTCROP-THERMALROCKS	8										8
ROCK OUTCROP-TINKER	2										2
ROCK OUTCROP-TOIYABE	2										2
ROCK OUTCROP-WOODSEYE	3										3
ROCKLAND	1										1
ROCKSTRIPE-ULTIC HAPLOXERALFS	6										6
ROGERVILLE	31										31
ROSSMOOR							5				5
ROSSMOOR-URBAN							6				6

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
ROUEN	12										12
ROUGH	2										2
RUBBLE LAND	3										3
RUBBLE LAND-GLENALPINE	4										4
RUBBLE LAND-JORGE	4										4
RUBBLE LAND-ROCK OUTCROP	2										2
SACRAMENTO							34				34
SAILBOAT							23				23
SAILBOAT-URBAN							5				5
SALTCANYON			12								12
SAN JOAQUIN		71									71
SAN JOAQUIN-ARENTS		6									6
SAN JOAQUIN-COMETA		6									6
SAN JOAQUIN-DURIXERALFS		5									5
SAN JOAQUIN-GALT		11									11
SAN JOAQUIN-URBAN		20									20
SAN JOAQUIN-XERARENTS		9									9
SAN YSIDRO		4									4
SARALEGUI					4						4
SATTLEY	4										4
SATTLEY-FOPIANO	5										5
SATTLEY-FRANKTOWN	5										5
SATTLEY-SHEPAN	6										6
SCHOTT	14										14
SCHOTT-ROCK OUTCROP	8										8
SCRIBNER							22				22
SECCA-ROCK OUTCROP	6										6
SEHORN	37										37
SEHORN-ALTAMONT	9										9
SEHORN-BALCOM	14										14
SEHORN-GULLIED	6										6
SEHORN-MILLSHOLM	35										35
SERPENTINE	2										2
SHAKERIDGE	6										6
SHAKERIDGE-MUDWASH	19										19
SHALGRAN-ROCK OUTCROP	7										7
SHANGHAI								38			38
SHAVER	34										34
SHEDD	12										12
SHEDD-ALTAMONT	9										9
SHEETIRON	33										33
SHELD			21								21
SHELD-INVILLE			3								3
SHELD-YALLANI			3								3
SHENANDOAH		6									6
SIERRA	59										59
SIERRA-ROCK OUTCROP	9										9
SIERRAVILLE-TROJAN	3										3
SITES	196										196
SITES-JOCAL	48										48
SITES-ROCK OUTCROP	10										10
SKY	21										21
SKYHIGH-MILLSHOLM	18										18
SKYHIGH-SLEEPER	6										6
SKY-MELODY	21										21
SLACREEK-ROCK OUTCROP	8										8
SLICKENS									4		4
SLIDELAND		26									26
SMITHNECK			8								8
SMOKEY	11										11
SMOKEY-LORACK		6									6

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
SMOKEY-ROCK OUTCROP	3										3
SMOKEY-WOODSEYE	3										3
SNELLING		8									8
SOBOBA								6			6
SOBRANTE	45										45
SOBRANTE-ROCK OUTCROP	16										16
SOBRANTE-TIMBUCTOO	21										21
SOFGRAN-KLAUSPEAK	9										9
SOMMEYFLAT-MOUNTHOPE	13										13
STAGPOINT-DEJONAH	6										6
STOCKTON						18					18
STOHLMAN-PALLS	10										10
STONYFORD	19										19
STONYFORD-GUENOC	24										24
STONYFORD-HENNEKE	4										4
SUBACO			16								16
SUNNYVALE						12					12
SURNUF	79										79
SURNUF-BIGRIDGE	45										45
SURNUF-TAXADJUNCT	25										25
SYCAMORE							46				46
TAHOE								16			16
TAHOMA	13										13
TAHOMA -JORGE	8										8
TAHOMA-VARIENT	6										6
TAILINGS									7		7
TALLAC			56								56
TALLAC-CRYUMBREPTS			6								6
TALLAC-GULLIED			3								3
TALLAC-VARIANT			3								3
TEHAMA				49							49
TEHAMA-GULLIED				5							5
TEMO-WITEFELS	36										36
TERRACE		2									2
THERMALROCKS	7										7
THOMPSONFLAT	11										11
THOMPSONFLAT-OROVILLE	5										5
TINKER			1								1
TINKER-CRYUMBREPT			3								3
TINKER-ROCK OUTCROP			18								18
TINKER-TALLAC			8								8
TINNIN							3				3
TINNIN-URBAN							5				5
TISDALE						6					6
TOADTOWN-POWELLTON	38										38
TOEM-ROCK OUTCROP	13										13
TOIYABE-ROCK OUTCROP	3										3
TOOMES	6										6
TRABUCO	5										5
TRABUCO-ROCK OUTCROP	9										9
TRAINER							12				12
TROJAN	17										17
TROJAN-SATTLEY	14										14
TROSI			20								20
TROSI-SARALEGUI			12								12
TUJUNGA								10			10
TUSCAN-FALLAGER	10										10
TUSCAN-IGO	7										7
TUSCCOLL-SCHOTT	14										14
TYNDALL							22				22
TYPIC HAPLOXERALFS	30										30

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
TYPIC HAPLOXERULTS	5										5
TYPIC XEROFLUVENTS								9			9
TYPIC XERORTHENTS-WATER									2		2
TYSON	19										19
UBAJ			6								6
ULTIC HAPLOXERALFS	97										97
UMBREPT-TALLAC			3								3
UMPA	2										2
UMPA-CRYUMBREPTS	2										2
UMPA-ROCK OUTCROP	4										4
URBAN LAND									3		3
URBAN-NATOMAS		7									7
URBAN-XERARENTS		12									12
UVI-SMOKEY	12										12
VALDEZ							18				18
VALPAC							13				13
VALPAC-URBAN							4				4
VENADO							6				6
VINA (frequent)								9			9
VINA (occasional)							31				31
VISTAROBLES-REDDING		14									14
VLECK	4										4
VLECK-AMADOR									8		8
WACA	23										23
WACA-CRYUMBREPTS	6										6
WACA-GULLIED	3										3
WACA-LITHIC	8										8
WACA-MEISS	10										10
WACA-PORTOLA	8										8
WACA-WINDY	8										8
WACA-WOODSEYE	18										18
WAFAP-HAMSLOUGH						10					10
WALKERMINE-BOTTLEHILL	7										7
WAPI	8										8
WAPI-CHAIX	12										12
WAPI-ROCK OUTCROP	4										4
WARDCREEK-MOUNTROSE	7										7
WASHOUGAL-SKALAN	4										4
WATAH								7			7
WATER										17	17
WATERMAN	3										3
WATERMAN-ROCK OUTCROP	5										5
WATSONLAKE	24										24
WESTFAN						47					47
WET ALLUVIAL LAND								3			3
WHITECABIN			4								4
WHITECABIN-ORDFERRY			10								10
WHITEROCK	9										9
WHITTELL-JOBSIS	10										10
WICKSCORNER		5									5
WILLOWS						87					87
WILSONCREEK-TRAINER							7				7
WIND RIVER-GROVE	5										5
WINDY	15										15
WINTONER-YALLANI	2										2
WOODLEAF	24										24
WOODSEYE-ROCK OUTCROP	6										6
WOODSEYE-WACA	10										10
WYO						24					24
XERARENTS-REDDING		4									4
XERARENTS-SAN JOAQUIN		9									9

Appendix C. Number of Map Units and Associated Soil Series

Soil Series Name	Pre-Pleist.	Older Pleist.	Latest Pleist.	Early Holo.	Mid-Holo.	Late Holo.	Latest Holo.	Hist-Mod.	Cut/Fill	Water	Total
XERARENTS-URBAN		17									17
XEROFLUVENTS						4		19			23
XEROLLS		7									7
XEROPSAMMENTS									5		5
XERORTHENTS	18								30		48
XERUMBREPTS-CRYUMBREPTS			2								2
YALLANI	4										4
YALLANI-SHELD	6										6
YOLLABOLLY-FREEZEOUT	5										5
YOLLABOLLY-ROCK OUTCROP	5										5
YOLO						40					40
YORKVILLE	4										4
YUVAS		8									8
ZAMORA						34					34
ZEIBRIGHT			10								10
GRAND TOTALS	6964	518	394	66	177	907	667	504	190	18	11493

APPENDIX C

C3 – GLOSSORY OF TERMS FOR SOIL HORIZONS AND LAYERS

SELECTED GEOLOGICAL TERMS USED IN TEXT

Anticline – An upward fold shaped like an arch in cross-section; opposite of a syncline.

Argillic horizon – A subsurface accumulation of silicate clay as compared to the overlying soil material (see "B" and "t" in *C-4 Soil Designations*).

Calcic horizon – An illuvial horizon in which secondary calcium carbonate (CaCO3) or other carbonates have accumulated to a significant extent (see "B" and "k" in *C-4 Soil Designations*).

Cambic horizon – Physical alterations, chemical transformations, or removals, or a combination of two or more of these processes, that result in measurable color and/or structure differences in the subsurface of a soil profile as compared to the overlying and underlying soil material (see "B" and "w" in *C-4 Soil Designations*).

Cosmogenic Radionuclide – A radioactive isotope created when a high-energy cosmic ray interacts with the nucleus of an atom.

Cumulic horizon – A surface or near-surface horizon in which sediment deposition and soil development have kept pace with each other to form an over-thickened A horizon.

Igneous – Rocks formed by solidification of cooled magma (molten rock), with or without crystallization, either below the surface as intrusive (plutonic) rocks or on the surface as extrusive (volcanic) rocks.

Monocline – A sharp bend in a bed that has the same dip on either side of the bend.

Moraine – Any glacially formed deposit of unconsolidated debris.

Protalus Rampart – A arched (or curved) ridge consisting of boulders and other coarse debris marking the downslope edge of an existing or melted snowbank.

Sedimentary – Rocks formed from sediments.

Silicic – Rocks rich in silica.

Syncline – A downward fold shaped like the letter U in cross-section; opposite of anticline.

Till – Unsorted glacial sediment.

C4 – DESIGNATIONS FOR SOIL HORIZONS AND LAYERS

Adapted mainly from:
Internet Glossary of Soil Science Terms
Soil Science Society of America
https://www.soils.org/sssagloss/appendix2.html

Three kinds of symbols are used in combination to designate horizons and layers—capital letters, lower case letters, and arabic numbers. Capital letters are used to designate master horizons and layers, lower case letters are used as suffixes to indicate specific characteristics of the master horizon and layer, and arabic numerals are used both as suffixes to indicate vertical subdivisions within a horizon or layer and as prefixes to indicate discontinuities. Genetic horizons are not the equivalent of the diagnostic horizons of the U.S. soil taxonomy. Designations of genetic horizons express a qualitative judgment about the vector of changes that are believed to have taken place. Diagnostic horizons are quantitatively defined features used to differentiate between taxa in the U.S. system of soil taxonomy. Horizon symbols indicate the direction of presumed pedogenesis (soil evolution) while diagnostic horizons indicate the magnitude of that expression. The most commonly used symbols are defined below.

Master Horizons and Layers

O horizons – Layers dominated by organic material.

A horizons – Mineral horizons that formed at the surface or below an O horizon that exhibit obliteration of all or much of the original rock structure and are characterized by an accumulation of humified organic matter intimately mixed with the mineral fraction and not dominated by properties characteristic of E or B horizons (i); or have properties resulting from cultivation, pasturing, or similar kinds of disturbance (ii).

E horizons – Mineral horizons in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these, that leaves a concentration of sand and silt particles of quartz or other resistant materials.

B horizons – Horizons that formed below an A, E, or O horizon and are dominated by obliteration of all or much of the original rock structure and show one or more of the following:

- illuvial concentration of silicate clay, iron, aluminum, humus, carbonates, gypsum, or silica, alone or in combination;
- evidence of removal of carbonates;
- residual concentration of sesquioxides (any oxide with three oxegen atoms for every two metal atoms);
- coatings of sesquioxides that make the horizon conspicuously lower in value, higher in chroma, or redder in hue than overlying and underlying horizons without apparent illuviation of iron;
- alteration that forms silicate clay or liberates oxides or both and that forms granular, blocky, or prismatic structure if volume changes accompany changes in moisture content; or brittleness.

K horizons – A mineral horizon impregnated by carbonate such that the carbonate dominates its morphology; generally well cemented (not officially recognized by the Soil Conservation Service).

C horizons or layers – Horizons or layers, excluding hard bedrock, that are little affected by pedogenic processes and lack properties of O, A, E, or B horizons. The material of C horizons may be either like or unlike that from which the solum (set of related soil horizons) presumably formed. The C horizon may have been modified even if there is no evidence of pedogenesis.

R layers – Hard bedrock including granite, basalt, quartzite and indurated limestone or sandstone that is sufficiently coherent to make hand digging impractical.

Transitional Horizons

Two kinds of transitional horizons are recognized. In one, the horizon is dominated by properties of one master horizon but has subordinate properties of another. Two capital letter symbols are used, such as AB, EB, BE, or BC. The master horizon symbol that is given first designates the kind of master horizon whose properties dominate the transitional horizon. In the other transitional horizon, distinct parts of the horizon have recognizable properties of the two kinds of master horizons indicated by the capital letters. The two capital letters are separated by a virgule (/), as E/B, B/E, or B/C. The first symbol is that of the horizon that makes up the greater volume, (e.g., BE is a horizon with characteristics of both an overlying E horizon and an underlying B horizon, but which is more like the B than the E, while B/E is a horizon comprised of individual parts of E and B horizon in which the E component surrounds the B component but the latter is dominant).

Subordinate Distinctions within Master Horizons and Layers

a – Highly decomposed organic material where rubbed fiber content averages <1/6 of the volume.

b – Identifiable buried genetic horizons in a mineral soil.

c – Concretions or nodules with iron, aluminum, manganese or titanium cement.

d – Physical root restriction, either natural or manmade such as dense basal till, plow pans, and mechanically compacted zones.

e – Organic material of intermediate decomposition in which rubbed fiber content is 1/6 to 2/5 of the volume.

f – Frozen soil in which the horizon or layer contains permanent ice.

g – Strong gleying in which iron has been reduced and removed during soil formation or in which iron has been preserved in a reduced state because of saturation with stagnant water.

h – Illuvial accumulation of organic matter in the form of amorphous, dispersible organic matter-sesquioxide complexes.

i – Slightly decomposed organic material in which rubbed fiber content is more than about 2/5 of the volume.

k – Accumulation of pedogenic carbonates, commonly calcium carbonate.

m – Continuous or nearly continuous cementation or induration of the soil matrix by carbonates (km), silica (qm), iron (sm), gypsum (ym), carbonates and silica (kqm), or salts more soluble than gypsum (zm).

n – Accumulation of sodium on the exchange complex sufficient to yield a morphological appearance of a natric horizon.

o – Residual accumulation of sesquioxides.

p – Plowing or other disturbance of the surface layer by cultivation, pasturing, or similar uses.

q – Accumulation of secondary silica.

r – Weathered or soft bedrock including saprolite; partly consolidated soft sandstone, siltstone or shale; or dense till that roots penetrate only along joint planes and are sufficiently incoherent to permit hand digging with a spade.

s – Illuvial accumulation of sesquioxides and organic matter in the form of illuvial, amorphous, dispersible organic matter-sesquioxide complexes if both organic matter and sesquioxide components are significant and the value and chroma of the horizon are >3.

ss – Presence of slickensides (i.e., pressure faces created by shrinking and swelling of clay-rich soils).

t – Accumulation of silicate clay that either has formed in the horizon and is subsequently translocated or has been moved into it by illuviation (i.e., argillic horizon).

v – Plinthite is an iron-rich, humus-poor, reddish material that is firm or very firm when moist and that hardens irreversibly when exposed to the atmosphere under repeated wetting and drying.

w – Development of color or structure in a horizon but with little or no apparent illuvial accumulation of materials.

x – Fragic or fragipan (altered subsurface soil layers that restrict water flow and root penetration) characteristics that result in genetically developed firmness, brittleness, or high bulk density.

y – Accumulation of gypsum.

z – Accumulation of salts more soluble than gypsum.

APPENDIX D

OBSIDIAN HYDRATION METHODS, RESULTS, AND DATABASE

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CA-KIN-80 (AM-08-30)

In all, four artifacts were submitted for analysis. Given that the artifacts showed signs of extreme to moderate weathering, areas with fractures and step fractures (that occurred during manufacture or resharpening) were targeted. Ventral and dorsal sides of the specimens were also examined. In all, four obsidian hydration rim values were obtained from the four artifacts. Of these, two artifacts yielded a single rim value, one yielded no rim value, and one artifact yielded two rim values. The multiple readings per artifact suggest that older tools were re-sharpened, retooled, or damaged during use

TABLE 1. CA-KIN-80 Rim Values.

SITE NO	*CATNO*	*DESCRIP*	*MEAN*	*MEAN2*	*STDEV*	*Quality*	*Hyd Com*	*Hyd Com2*	*Source XRF*
CA-KIN-80	1	PROJECTILE POINT	10.47		0.05	DFV		sfx4	Lookout Mountain, Casa Diablo area
CA-KIN-80	2	BIFACE	8.93		0.07	RC		sfx5	Lookout Mountain, Casa Diablo area
CA-KIN-80	2	BIFACE	9.77		0.06	RC	iso	sfx2	Lookout Mountain, Casa Diablo area
CA-KIN-80	4	FLAKE A				RC; UNR			Coso Volcanic Field
CA-KIN-80	4	FLAKE B	12.64		0.03		V;D;P	sfx4	Coso Volcanic Field

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Little Lake Geoarchaeological Testing (AM-09-05)

In all, ten artifacts were submitted for analysis. Given that the artifacts showed signs of moderate weathering, areas with fractures and step fractures (that occurred during manufacture or resharpening) were targeted. Ventral and dorsal sides of the specimens were also examined. In all, 12 hydration rim values were obtained from the 10 artifacts. Of these, eight artifacts yielded a single rim value and two artifacts yielded two rim values. The multiple readings per artifact suggest that older tools were re-sharpened, retooled, or damaged during use. While the outer surface most certainly reflects the weathered surface, retooled age, or recent damage, the interior step-fracture likely reflects the older age of the artifact (when it was initially made). Separate dorsal and ventral readings may suggest repeated episodes of core or tool manufacture. With debitage, the smaller measurement from the ventral surface of the flake reflects when the artifact was last retooled while the larger measurement on the dorsal surface reflects when a previous flake was struck from the tool or core.

Visual Identification

After thin sectioning, ten artifacts were examined microscopically and specific internal characteristics were noted. Microscopic attributes were then compared to multiple control samples from the region that had been geochemically sourced using XRF. Based on the microscopic and microscopic attributes, nine specimens were identified as Coso obsidian, which includes (Joshua Ridge, Sugarloaf, West Cactus Peak, and West Sugarloaf). One specimen was unknown due to lack of macroscopic and microscopic traits. Generally, these have some feature that suggests that they are likely Coso, Saline sources cannot be ruled out. A blind test conducted by Carpenter and Garfinkel (Garfinkel 2006) suggests that identification of regional sources using microscopic attributes is accurate roughly 90% of the time. However, when using microscopic attributes viewed from thin sections of small pressure flakes (Eerkens; personal communication) and from very old tools (e.g. Projectile points) the accuracy may be as low as 70% (Gold; personal communication). In this region, due to the plethora of obsidian sources, visual sourcing may only be as accurate between 70-90%.

TABLE 2. Little Lake Geoarchaeological Testing Rim Values.

PROV	*ADDPROV*	*LEVEL*	*DESCRIP*	*CND*	*MEAN*	*MEAN2*	*STDEV*	*Quality*	*Hyd Com*	*Hyd Com2*	*VISUAL SOURCE*	*COMMENTS2*
2Ab	Gravel pit South wall	~110-120	debitage		6.65		0.03		v;d;p	s;sfx2	Coso	
2Ab	Gravel pit South wall	~110-120	debitage		6.63		0.05		v;d;p	s;sfx4	Coso	
2Ab	Gravel pit South wall	~110-120	Projectile point	WHL	11.37		0.02	RC; C1/C2	S1; V; tip SF removed and cut	sfx5	UNK	SW; 10.6-11.1
	Craig's Hearth		debitage		3.86		0.03		v; Margin; RB	s	Coso	
	Craig's Hearth		debitage			4.88	0.04		d; RB	s;sf	Coso	
2Ab	East Bank; IK1	80	debitage		11.27		0.05	RC	v	sfx3	Coso	SW; 10.6-11
2Ab	East Bank; IK1	80	debitage		9.53		0.03		v; RB?	s	Coso	SW; 9.5d
2Ab	East Bank; IK1	80	debitage			10.56	0.05	RC	v;p	s;sfx4	Coso	SW; 9.5d
2Ab	East Bank; IK1	80	debitage		10.50		0.05		v;d;p	s;sfx4	Coso	SW 9.8; iso 16-20.0 p cortex
2Ab	East Bank; IK1	80	debitage		11.84		0.04		p	sfx2	Coso	SW;11.5-11.9
2Ab	East Bank; IK1	80	debitage		11.21		0.04	dfv	p	sfx2	Coso	SW; 8.5-10.7
2Ab	East Bank; IK1	80	debitage		11.30		0.04	dfv	p	sfx2	Coso	SW; 8.5-10.7

Analytical Methods

Hydration results were accomplished at the ArchaeoMetrics Obsidian Hydration Laboratory. Initially, the best area in which to cut a portion of an obsidian specimen was determined. Two parallel cuts were then made on the appropriate portion of the specimen using a lapidary saw mounted with two four-inch diameter diamond-impregnated .004" blades. For projectile point the base or notches are cut. For debitage the platform is cut to determine if there is difference in dorsal, ventral or in some cases the platform readings. Weathered specimens are addressed in the same manner but step fractures are usually targeted for un-weathered hydration readings. On average the majority of cuts yielded samples average 0.35 millimeters in thickness. Samples were then mounted with Lakeside thermoplastic cement onto sequentially numbered microscope slides. Generally, five specimens were mounted on each slide.

The samples were then manually ground to reduce thickness allowing specimens to be read under the microscope. First, a slurry of water and 600 silicon abrasive grit was mixed on a glass plate. Grinding was accomplished in two steps. The initial grinding rendered the surface flat and removed the saw cut marks from one side of the specimen. The specimen was then flipped, remounted and the second side was ground to proper thickness for viewing under the microscope. Final thickness of the specimens was between 30-50 microns depending on opacity or unique source specific quantities such as hardness of obsidian vs. softer obsidians.

The prepared slides were then measured using a Meiji petrographic microscope fitted with a Lasico digital filar eyepiece. Once a defined hydration rim was observed on a color monitor screen, the hydration rim was centered in the middle of the monitor, to reduce parallax, and measured using the micrometer. Typically ten measurements are taken from each specimen. However, due to imperfections in the stone, weathering, or damage to the surface from the saw or grinding as few as three measurements were recorded. Surfaces exhibiting cortex were also recorded and identified as such. Hydration values are recorded to the 0.01 um and both the mean and standard deviation for each specimen were computed (Table attached).

Additional information on unique qualities is recorded in the "quality" column. These include:

BEV- (Beveled). Artifact cut or morphology has resulted in a beveling of the thin section.

BRE- (Break) The thin section was purposely cut across a broken edge of the artifact. Hydration measurements may reveal when the artifact was broken, relative to its time of manufacture.

BUR- (Burning). The characteristics of the specimen noted under the microscope are indicative of burning. Although the effects of burning are poorly understood, such occurrence may be identified as the complete absence of hydration or an obscured diffusion front.

C1 or C2- (Additional cut made). More than one thin section was prepared from an archaeological specimen; each is sequentially numbered. Multiple cuts (c1 or c2) may be made if the artifact is very large (e.g. Quarry reduction) In addition multiple cut may be made if there is some question that readings may not be consist across the artifact due to aberrant weathering (fluvial rolled artifacts). They are noted in sequential order and a diagram may be provided.

DES- (Destroyed). The specimen was destroyed in the process of thin section preparation. This may occur when mounting and grinding extremely small flakes (e.g. shark fins).

DFV- (Diffusion front vague) the diffusion front, or the visual boundary between hydrated and unhydrated portions of the specimen, is poorly defined. This can result in less precise measurements that can be obtained from sharper demarcated diffusion fronts. The technician must often estimate the hydration boundary because a vague diffusion front appears as a relatively thick, dark line or a gradation in color or brightness between hydrated and unhydrated layers.

DIS- (Discontinuous). A discontinuous or interrupted hydration rind was observed on the thin section.

HV- (Highly Variable). The hydration rind exhibits variable thickness along continuous surfaces.

IRR- (Irregular). The outer surface of the thin section is uneven and measurements are difficult.

ISO- (One surface only). Hydration was observed on one surface or side of the thin section (artifact).

ED- (Edge damaged). Reflects an isolated area damaged along the margin of the artifact.

EM- (Edge modified). Reflects an isolated area of modification usually along the margin of the artifact.

NHV- (No visible hydration). No visible hydration rind was observed. This does not imply that hydration is absent, only that hydration was not observed. Hydration rinds smaller than one micron are often too small to be seen via optical microscopy.

RC- (Recut). More than one thin section was prepared from an archaeological specimen. Multiple thin sections are made if preparation quality on the initial specimen is suspect or obviously poor. More than one recut is number sequentially (e.g. RC, RC2, etc.)

RC-**RB-** (Recut along recent break)**.** Recent hydration recut is made along a broken edge of an artifact of antiquity. Usually the lithic analysis is interested when the artifact was broken.

SKF- (Shark fin). Due to the small size of the specimen, the flake was snapped in half and mounted buy itself onto a slide.

UNR- (Unreadable). The measurement optical property of the hydration rind is so poor that accurate measurements are not possible. Poor thin section preparation is not the cause.

W-(Weathered). Visual surface characteristics and microscopically observed characteristics are noted to asses the reliability of the hydration rim value. Mild sandblasting is noted as W; moderate sand blasting is noted by **W+**. Generally, those noted as W or W+ retain enough integrity to assume a correct rim value. Excessive sand blasting (manifest as eroded flake scars) is noted as **W++**; while extreme weathering, pitting and severe weathering (manifest as rounding of all external edges) is noted as **W+++**. These later two notations indicate extremely weathered surfaces with less reliable or indeterminate rim values. For these specimens, we targeted areas that have unexposed hydration, such as hinge and step fractures or internal cracks.

NOT OBSIDIAN- Macro-visual or petrographic characteristics of the artifact indicate that it is not obsidian.

Additional information is recorded about unique qualities in the "hydration comments" column that pertain to technological comments. These include:

1 of 2- One of two distinctly different hydration rinds identified on one specimen. Occasionally one specimen will have one, two, or possibly three distinct hydration rinds. Generally, older (larger) rim values located near the midsection (interior) of the artifact

and younger or smaller rim values near the "margin". This notation is used to easily distinguish the different hydration rinds in the comments column used by the analyst.

S1-(Side 1).- Occasionally, one of possibly two distinctly different hydration rinds identified occur on different faces of an obsidian tool. Occasionally one specimen will have one (S1), two (S2), or possibly three distinct hydration rinds on various faces of the artifact. This notation is used to easily distinguish the different hydration rinds in the comments column used by the analyst.

V- (Side one - ventral)**.** Reading was taken on the ventral side surface of the artifact.

D- (Side two - dorsal)**.** Reading was taken on the dorsal surface of the artifact.

ED- (Edge damage)**.** Reading was taken on the margin of the artifact; ED indicated that edge damage is present.

P- (Platform)**.** Reading was taken on the platform or platform remnant.

RH- (Remnant hydration)**.** Reading was taken on a weather surface of the approximate thickness of the remaining or remnant hydration.

RB- (Recent break hydration)**.** Reading appears in a crack of a weather surface and its thickness and locating suggest this it is a recent phenomenon. Recent hydration can also include reworking and this notation is made after viewing the hydration location and looking at the artifact.

RB Margin- (Recently broken margin hydration)**.** Recent broken edges on debitage lacking platforms can be cut to determine if the dorsal and ventral surfaces differ from the broken edge. In this case the notation is used to note the artifact was cut along as surface that appears recently broken but may have readings consistent with the dorsal and ventral surfaces

Additional information regarding the type of feature selected and where hydration is reading are taken on the artifact is recorded in the "Hydration comments 2" column. These include:

CRACKS (C) - Rim measurement originated from an unweathered internal crack. This measurement may not be associated with artifact's modification. Discretion should be used for assigning age of the artifact.

STEP FRACTURE REMOVED AND CRACK (SF) - Rim measurement originated from an unweathered step fracture and internal crack associated with artifact modification. Step fractures art tabulated as they are found. Sfx2; notes that two independent step fractures were measured).

SURFACE (S) - Rim measurement originated from an unweathered, moderate or severely weather surface. Because some of the hydration rim has weathered away, these measurements are not accurate for assessing when the artifact was last modified (See SW in Comments2 column).

Additional information is recorded about unique surface qualities of weathered specimen or general comments are located in "Comments2".

Artifact Size (AS) – Larger artifacts of extreme size may yield multiple hydration values. Unless instructed by the client, one thin section is taken and general comment regarding multiple surface are only noted. This generally applies to specimens from quarries.

Surface Weathered (SW) – These rim measurement originated from an unweathered surface or weathered internal crack. This reading is estimated. The generalized measurement reflects that the artifact has lost a certain amount of hydration due to weathering.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
67	MONO	MNO-2429/H	2	A	DBTG	0.70	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
67	MONO	MNO-2429/H	2	H	DBTG	0.80	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-643A	MONO	F159	SUR	SUR	DBTG	0.80	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-643B	MONO	F159	SUR	SUR	DBTG	0.80	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
223	INYO	INY-3784/H	3C		PRJPT	0.80	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
20	MONO	MNO-3217	2		PRJPT	0.80	0.00	CD	VIS	308900	4105000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
227-1-264d	INYO	INY-5275 Locus D1			DBTG	0.80	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
43	MONO	MNO-3225	2	A	DBTG	0.80	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
227-1-264b	INYO	INY-5275 Locus D1			DBTG	0.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
43	MONO	MNO-3225	2	D	DBTG	0.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
43	MONO	MNO-3225	2	G	DBTG	0.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-746B	MONO	F169	SUR	SUR	DBTG	0.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-746C	MONO	F169	SUR	SUR	DBTG	0.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-746E	MONO	F169	SUR	SUR	DBTG	0.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
43	MONO	MNO-3225	2	C	DBTG	0.90	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
227-1-264c	INYO	INY-5275 Locus D1			DBTG	0.90	0.00	CD	VIS	309300	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
43	MONO	MNO-3225	2	H	DBTG	0.90	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-642	MONO	F158	SUR	SUR	BIF	0.90	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-746A	MONO	F169	SUR	SUR	DBTG	0.90	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
67	MONO	MNO-2429/H	2	C	DBTG	0.90	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
67	MONO	MNO-2429/H	2	G	DBTG	0.90	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-746D	MONO	F169	SUR	SUR	DBTG	0.90	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-653	MONO	F159	SUR	SUR	DBTG	0.90	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
81-244-1-57	INYO	INY-5276	S47.8/W77.8	-	PRJPT	0.90	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-641C	MONO	F158	SUR	SUR	DBTG	0.90	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
202	INYO	INY-5276	3C		PRJPT	0.90	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
227-1-265a	INYO	INY-5275 Locus D2			DBTG	0.90	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-660	MONO	F160	SUR	SUR	BIF	0.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
81-244-1-40	INYO	INY-5276	S62.7/E88.8	-	PRJPT	0.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
39	MONO	MNO-3225	2		PRJPT	0.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
262	INYO	INY-5275	3C		PRJPT	0.90	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
109	MONO	MNO-2911	2		PRJPT	0.90	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-656C	MONO	F160	SUR	SUR	DBTG	0.90	0.00	CD	XRF	380400	4039550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-656D	MONO	F160	SUR	SUR	DBTG	1.00	0.00	CD-SR	XRF	334540	4166800		11	Holocene	late-Holo	Watterson family-Torriorthentic Haploxerolls complex, 5 to 15 percent slopes.
349-641A	MONO	F158	SUR	SUR	DBTG	1.00	0.00	CD	XRF	340108	4186104	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
349-656A	MONO	F160	SUR	SUR	DBTG	1.00	0.00	CD-LM	XRF	313150	4184740		11	Holocene	latest-Holo	Aquandic Endoaqolls, 0 to 5 percent slopes.
349-641D	MONO	F158	SUR	SUR	DBTG	1.00	0.00	CD	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-641B	MONO	F158	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-656E	MONO	F160	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-656B	MONO	F160	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-449A	MONO	W134	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-68	MONO	A19	SUR	SUR	CORE	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-66C	MONO	A19	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-66E	MONO	A19	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-300	MONO	A72	SUR	SUR	BIF	1.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
77	MONO	MNO-3176	2	B	DBTG	1.00	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-70D	MONO	A20	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-188	MONO	A42	SUR	SUR	BIF	1.00	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-261B	MONO	A56	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-394	MONO	A88	SUR	LOCUS D	CORE	1.00	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
578-32	MNO	MNO-0578	UNIT E	010-020	DEB	1.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-42	MNO	MNO-0578	UNIT E	020-030	DEB	1.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-53	MNO	MNO-0578	UNIT E	030-040	DEB	1.00	0.00	CD	VIS	309300	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-UE012	MNO	MNO-0578	UNIT E	040-050	PPT	1.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-86A	MONO	A24	SUR	SUR	DBTG	1.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-366	MONO	A88	SUR	LOCUS D1	BIF	1.00	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
8	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-215	MONO	A48	SUR	SUR	PRJPT	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-218	MONO	A48	SUR	SUR	PRJPT	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-335B	MONO	A85	SUR	SUR	DBTG	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
882	MONO	MNO-0891	UNIT 8	0-10	DBTG	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
1084	MONO	MNO-0891	SCN55/W230	SURFACE	CORE	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-18	MNO	MNO-0578	UNIT E	000-010	DEB	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-131	MNO	MNO-0578	UNIT E	090-100	DEB	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-46	MNO	MNO-0578	UNIT E	020-030	DEB	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
33	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UC016	MNO	MNO-0578	UNIT C	020-030	PPT	1.00	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-148B	MONO	A38	SUR	LOCUS 1	DBTG	1.00	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-156	MONO	A38	SUR	N. BOUND	BIF	1.00	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-192	MONO	A42	SUR	SUR	BIF	1.00	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-222	MONO	A48	SUR	LOCUS 1	BIF	1.00	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
915	MONO	MNO-0891	STU 03	0-10	DBTG	1.00	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
979	MONO	MNO-0891	SCS85/E68	SURFACE	CORE	1.00	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
560	MONO	MNO-0891	SCN174/W114	SURFACE	BIF	1.00	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
10	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.00	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
UC015	MNO	MNO-0578	UNIT C	30	PPT	1.00	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-104D	MONO	A30	SUR	SUR	DBTG	1.00	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-240D	MONO	A50	SUR	SUR	DBTG	1.00	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-170	MNO	MNO-0578	UNIT E	130-140	DEB	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-SC0018A	MNO	MNO-0578	SURFACE	SURFACE	PPT	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC053	MNO	MNO-0578	UNIT C	130-140	PPT	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
77	MONO	MNO-3176	2	A	DBTG	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-95B	MONO	A27	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-149C	MONO	A38	SUR	LOCUS 2	DBTG	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-157	MONO	A38	SUR	NE QUAD	BIF	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-189	MONO	A42	SUR	SUR	BIF	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-190	MONO	A42	SUR	SUR	BIF	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-217	MONO	A48	SUR	SUR	PRJPT	1.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-290C	MONO	A68	SUR	SUR	DBTG	1.00	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-463	MONO	F135	SUR	SUR	PRJPT	1.00	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-156	MNO	MNO-0578	UNIT E	110-120	DEB	1.00	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
UC012	MNO	MNO-0578	UNIT C	30	PPT	1.00	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-102D	MONO	A29	SUR	SUR	DBTG	1.00	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-186	MONO	A42	SUR	SUR	DBTG	1.00	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-340C	MONO	A87	SUR	SUR	DBTG	1.00	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
1071	MONO	MNO-0891	SCN58/W159	SURFACE	BIF	1.00	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-449B	MONO	W134	SUR	SUR	DBTG	1.00	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-44	MNO	MNO-0578	UNIT E	020-030	DEB	1.00	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UC032	MNO	MNO-0578	UNIT C	050-060	PPT	1.00	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UC036	MNO	MNO-0578	UNIT C	060-070	PPT	1.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-148A	MONO	A38	SUR	LOCUS 1	DBTG	1.10	0.00	CD-SR	XRF	334540	4166800		11	Holocene	late-Holo	Watterson family-Torriorthentic Haploxerolls complex, 5 to 15 percent slopes.
349-149B	MONO	A38	SUR	LOCUS 2	DBTG	1.10	0.00	CD	VIS	337015	4174010	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-340A	MONO	A87	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-340D	MONO	A87	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-50	MNO	MNO-0578	UNIT E	030-040	DEB	1.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-39	MNO	MNO-0578	UNIT E	020-030	DEB	1.10	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC019	MNO	MNO-0578	UNIT C	020-030	PPT	1.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC033	MNO	MNO-0578	UNIT C	050-060	PPT	1.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-191	MONO	A42	SUR	SUR	BIF	1.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-207A	MONO	A47	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-367	MONO	A88	SUR	LOCUS D1	BIF	1.10	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
349-762	MONO	F171	SUR	LOCUS A	BIF	1.10	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-30	MNO	MNO-0578	UNIT E	010-020	DEB	1.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-45	MNO	MNO-0578	UNIT E	020-030	DEB	1.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-49	MNO	MNO-0578	UNIT E	030-040	DEB	1.10	2.20	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-84	MNO	MNO-0578	UNIT E	060-070	DEB	1.10	2.20	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9	MNO	MNO-0833	UNIT C 5	030-040	DEB	1.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC024	MNO	MNO-0578	UNIT C	030-040	PPT	1.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC014	MNO	MNO-0578	UNIT C	30	PPT	1.10	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC021	MNO	MNO-0578	UNIT C	030-040	PPT	1.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UC027	MNO	MNO-0578	UNIT C	040-050	PPT	1.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UC039	MNO	MNO-0578	UNIT C	80	PPT	1.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-102C	MONO	A29	SUR	SUR	DBTG	1.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-225	MONO	A48	SUR	SUR	BIF	1.10	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-229	MONO	A48	SUR	SUR	BIF	1.10	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-281C	MONO	A64	SUR	SUR	DBTG	1.10	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
660	MONO	MNO-0891	SCN25/W208	SURFACE	PRJPT	1.10	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-2	MNO	MNO-0578	UNIT E	007-000	DEB	1.10	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-12	MNO	MNO-0578	UNIT E	000-010	DEB	1.10	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-74	MNO	MNO-0578	UNIT E	050-060	DEB	1.10	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
15	MNO	MNO-0833	UNIT A 4	020-030	DEB	1.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-92C	MONO	A26	SUR	SUR	DBTG	1.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-95D	MONO	A27	SUR	SUR	DBTG	1.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-124D	MONO	A35	SUR	SUR	DBTG	1.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-149A	MONO	A38	SUR	LOCUS 2	DBTG	1.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-205E	MONO	A46	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-219	MONO	A48	SUR	SUR	BIF	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-226	MONO	A48	SUR	SUR	BIF	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-230	MONO	A48	SUR	SUR	BIF	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-290B	MONO	A68	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-313B	MONO	A78	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-338E	MONO	A86	SUR	SUR	DBTG	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-392	MONO	A88	SUR	LOCUS D	BIF	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-397	MONO	A88	SUR	LOCUS E	BIF	1.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-406D	MONO	A90	SUR	SUR	DBTG	1.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
1093	MONO	MNO-0891	SCN72/W109	SURFACE	BIF	1.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-763	MONO	F171	SUR	LOCUS A	BIF	1.10	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
578-41	MNO	MNO-0578	UNIT E	020-030	DEB	1.10	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-106	MNO	MNO-0578	UNIT E	070-080	DEB	1.10	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
20	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.10	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-124B	MONO	A35	SUR	SUR	DBTG	1.10	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-228	MONO	A48	SUR	SUR	BIF	1.10	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-340E	MONO	A87	SUR	SUR	DBTG	1.10	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-361	MONO	A88	SUR	LOCUS D1	BIF	1.10	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
879	MONO	MNO-0891	UNIT 8	0-10	DBTG	1.10	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
883	MONO	MNO-0891	UNIT 8	0-10	DBTG	1.10	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
899	MONO	MNO-0891	UNIT 8	10-20	DBTG	1.10	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-449C	MONO	W134	SUR	SUR	DBTG	1.10	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
578-16	MNO	MNO-0578	UNIT E	000-010	DEB	1.10	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
578-101	MNO	MNO-0578	UNIT E	070-080	DEB	1.10	0.00	CD	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
578-167	MNO	MNO-0578	UNIT E	130-140	DEB	1.10	0.00	CD	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
18	MNO	MNO-0833	UNIT A 10	060-070	DEB	1.20	0.00	CD	VIS	337015	4174010	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
35	MNO	MNO-0833	UNIT A 12	070-080	DEB	1.20	0.00	CD	VIS	337015	4174010	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2	MNO	MNO-0833	UNIT A 12	070-080	DEB	1.20	0.00	CD	VIS	334002	4175049	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-TR03A	MNO	MNO-0578	TRENCH	-	PPT	1.20	0.00	CD-LM	XRF	316430	4182250		11	Volcanics	Latest Holocene Ash/Pumice	Nanamkin family-Vitrandic Haploxerolls complex, 15 to 30 percent slopes..
578-TR03B	MNO	MNO-0578	TRENCH	-	PPT	1.20	0.00	CD	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
UC005	MNO	MNO-0578	UNIT C	010-020	PPT	1.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-154	MONO	A38	SUR	SUR	-FRAG	1.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-187	MONO	A42	SUR	SUR	BIF	1.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-227	MONO	A48	SUR	SUR	BIF	1.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-17	MNO	MNO-0578	UNIT E	000-010	DEB	1.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-86	MNO	MNO-0578	UNIT E	060-070	DEB	1.20	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-103	MNO	MNO-0578	UNIT E	070-080	DEB	1.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-137	MNO	MNO-0578	UNIT E	100-110	DEB	1.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
11	MNO	MNO-0833	UNIT C 8	050-060	DEB	1.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-92D	MONO	A26	SUR	SUR	DBTG	1.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-299C	MONO	A72	SUR	SUR	DBTG	1.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-313C	MONO	A78	SUR	SUR	DBTG	1.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-389	MONO	A88	SUR	LOCUS D2	BIF	1.20	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-449E	MONO	W134	SUR	SUR	DBTG	1.20	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-24	MNO	MNO-0578	UNIT E	010-020	DEB	1.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
25	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
12	MNO	MNO-0833	UNIT C 1	000-010	DEB	1.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
3	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-246D	MONO	A52	SUR	SUR	DBTG	1.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-398	MONO	A88	SUR	LOCUS E	BIF	1.20	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-406B	MONO	A90	SUR	SUR	DBTG	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-406C	MONO	A90	SUR	SUR	DBTG	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
853	MONO	MNO-0891	UNIT 1	30-40	DBTG	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
716	MONO	MNO-0891	SCN58/W257	SURFACE	BIF	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-67	MNO	MNO-0578	UNIT E	040-050	DEB	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-75	MNO	MNO-0578	UNIT E	050-060	DEB	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
32	MNO	MNO-0833	UNIT A 2	010-020	DEB	1.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
45	MNO	MNO-0833	UNIT A 5	030-040	DEB	1.20	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
29	MNO	MNO-0833	UNIT A 5	030-040	DEB	1.20	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
40	MNO	MNO-0833	UNIT A 9	050-060	DEB	1.20	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
44	MNO	MNO-0833	UNIT C 2	010-020	DEB	1.20	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
31	MNO	MNO-0833	UNIT C 5	030-040	DEB	1.20	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
22	MNO	MNO-0833	UNIT C 5	030-040	DEB	1.20	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
24	MNO	MNO-0833	UNIT C 5	030-040	DEB	1.20	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-UH005A	MNO	MNO-0578	UNIT H	020-030	PPT	1.20	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UE013	MNO	MNO-0578	UNIT E	040-050	PPT	1.20	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UG012	MNO	MNO-0578	UNIT G	060-070	PPT	1.20	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-310A	MONO	A77	SUR	SUR	DBTG	1.20	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-335D	MONO	A85	SUR	SUR	DBTG	1.30	0.00	CD	VIS	336421	4174071	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-375	MONO	A88	SUR	LOCUS D1	BIF	1.30	0.00	CD-LM	XRF	363900	4129050		11	LtP	latest-Pleist	Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes.
1068	MONO	MNO-0891	STU 40	0-10	DBTG	1.30	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
349-756	MONO	F171	SUR	LOCUS A	BIF	1.30	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
578-47	MNO	MNO-0578	UNIT E	020-030	DEB	1.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-78	MNO	MNO-0578	UNIT E	050-060	DEB	1.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-81	MNO	MNO-0578	UNIT E	050-060	DEB	1.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-113	MNO	MNO-0578	UNIT E	080-090	DEB	1.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
14	MNO	MNO-0833	UNIT A 4	020-030	DEB	1.30	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
43	MNO	MNO-0833	UNIT A 5	030-040	DEB	1.30	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
21	MNO	MNO-0833	UNIT C 4	020-030	DEB	1.30	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA012	MNO	MNO-0578	UNIT A	060-070	PPT	1.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-95E	MONO	A27	SUR	SUR	DBTG	1.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-102A	MONO	A29	SUR	SUR	DBTG	1.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-102B	MONO	A29	SUR	SUR	DBTG	1.30	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-208	MONO	A47	SUR	SUR	BIF	1.30	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-310B	MONO	A77	SUR	SUR	DBTG	1.30	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-317C	MONO	A80	SUR	LOCUS 1	DBTG	1.30	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-332	MONO	A84	SUR	LOCUS 2	BIF	1.30	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-335A	MONO	A85	SUR	SUR	DBTG	1.30	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-350	MONO	A88	SUR	LOCUS B	BIF	1.30	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-396	MONO	A88	SUR	LOCUS E	BIF	1.30	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
991	MONO	MNO-0891	SCN63/W48	SURFACE	BIF	1.30	2.10	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1073	MONO	MNO-0891	SCN57/W70	SURFACE	BIF	1.30	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-102	MNO	MNO-0578	UNIT E	070-080	DEB	1.30	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
578-126	MNO	MNO-0578	UNIT E	090-100	DEB	1.30	0.00	CD	XRF	377680	4057900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
578-148	MNO	MNO-0578	UNIT E	110-120	DEB	1.30	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
47	MNO	MNO-0833	UNIT A 7	040-050	DEB	1.40	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
36	MNO	MNO-0833	UNIT B 8	040-050	DEB	1.40	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5	MNO	MNO-0833	UNIT C 5	030-040	DEB	1.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UA006	MNO	MNO-0578	UNIT A	040-050	PPT	1.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-100	MONO	A28	SUR	SUR	BIF	1.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-148D	MONO	A38	SUR	LOCUS 1	DBTG	1.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-246A	MONO	A52	SUR	SUR	DBTG	1.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-295D	MONO	A70	SUR	SUR	DBTG	1.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-372	MONO	A88	SUR	LOCUS D1	BIF	1.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
971	MONO	MNO-0891	SCS78/E23	surface	BIF	1.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-462	MONO	F135	SUR	SUR	PRJPT	1.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
578-109	MNO	MNO-0578	UNIT E	080-090	DEB	1.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
37	MNO	MNO-0833	UNIT B 8	040-050	DEB	1.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
28	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
UE033	MNO	MNO-0578	UNIT E	96	PPT	1.40	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-92B	MONO	A26	SUR	SUR	DBTG	1.40	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-124A	MONO	A35	SUR	SUR	DBTG	1.40	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-267D	MONO	A58	SUR	SUR	DBTG	1.40	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-295B	MONO	A70	SUR	SUR	DBTG	1.40	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-308B	MONO	A76	SUR	SUR	DBTG	1.40	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-313D	MONO	A78	SUR	SUR	DBTG	1.40	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-384	MONO	A88	SUR	LOCUS D2	BIF	1.40	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-35	MNO	MNO-0578	UNIT E	010-020	DEB	1.40	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
50	MNO	MNO-0833	UNIT C 4	020-030	DEB	1.40	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
UE033	MNO	MNO-0578	UNIT E	96	PPT	1.40	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
77	MONO	MNO-3176	2	E	DBTG	1.40	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
349-243B	MONO	A51	SUR	SUR	DBTG	1.40	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-246B	MONO	A52	SUR	SUR	DBTG	1.40	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-246E	MONO	A52	SUR	SUR	DBTG	1.40	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-299B	MONO	A72	SUR	SUR	DBTG	1.40	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-308E	MONO	A76	SUR	SUR	DBTG	1.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-340B	MONO	A87	SUR	SUR	DBTG	1.40	0.00	CD	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-364	MONO	A88	SUR	LOCUS D1	BIF	1.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-365	MONO	A88	SUR	LOCUS D1	BIF	1.50	0.00	CD	VIS	333807	4172178	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-379	MONO	A88	SUR	LOCUS D1	BIF	1.50	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
349-387	MONO	A88	SUR	LOCUS D2	BIF	1.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-406A	MONO	A90	SUR	SUR	DBTG	1.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-414	MONO	W125	SUR	SUR	PRJPT	1.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
578-14	MNO	MNO-0578	UNIT E	000-010	DEB	1.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
578-90	MNO	MNO-0578	UNIT E	060-070	DEB	1.50	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
578-180	MNO	MNO-0578	UNIT E	140-150	DEB	1.50	0.00	CD	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
4	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
48	MNO	MNO-0833	UNIT B 6	020-030	DEB	1.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
49	MNO	MNO-0833	UNIT B 6	020-030	DEB	1.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
39	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UE030	MNO	MNO-0578	UNIT E	080-090	PPT	1.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
77	MONO	MNO-3176	2	C	DBTG	1.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-93	MONO	A26	SUR	SUR	BIF	1.50	0.00	CD	XRF	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-153	MONO	A38	SUR	SUR	PRJPT	1.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-240B	MONO	A50	SUR	SUR	DBTG	1.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-267C	MONO	A58	SUR	SUR	DBTG	1.50	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-308A	MONO	A76	SUR	SUR	DBTG	1.50	0.00	CD	VIS	309300	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-335E	MONO	A85	SUR	SUR	DBTG	1.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-378	MONO	A88	SUR	LOCUS D1	BIF	1.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-388	MONO	A88	SUR	LOCUS D2	BIF	1.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-393	MONO	A88	SUR	LOCUS D	BIF	1.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-768C	MONO	F171	SUR	LOCUS C	DBTG	1.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-56	MNO	MNO-0578	UNIT E	030-040	DEB	1.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-88	MNO	MNO-0578	UNIT E	060-070	DEB	1.50	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-105	MNO	MNO-0578	UNIT E	070-080	DEB	1.50	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-120	MNO	MNO-0578	UNIT E	090-100	DEB	1.50	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
46	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.50	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
26	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.50	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-66D	MONO	A19	SUR	SUR	DBTG	1.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-70A	MONO	A20	SUR	SUR	DBTG	1.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-207B	MONO	A47	SUR	SUR	DBTG	1.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-263	MONO	A56	SUR	SUR	BIF	1.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-281B	MONO	A64	SUR	SUR	DBTG	1.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-295A	MONO	A70	SUR	SUR	DBTG	1.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-377	MONO	A88	SUR	LOCUS D1	BIF	1.50	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-383	MONO	A88	SUR	LOCUS D2	BIF	1.50	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-758	MONO	F171	SUR	LOCUS A	BIF	1.50	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-768A	MONO	F171	SUR	LOCUS C	DBTG	1.50	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-57	MNO	MNO-0578	UNIT E	030-040	DEB	1.50	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-58	MNO	MNO-0578	UNIT E	030-040	DEB	1.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-64	MNO	MNO-0578	UNIT E	040-050	DEB	1.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-79	MNO	MNO-0578	UNIT E	050-060	DEB	1.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
578-89	MNO	MNO-0578	UNIT E	060-070	DEB	1.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
578-177	MNO	MNO-0578	UNIT E	130-140	DEB	1.50	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
578-1	MNO	MNO-0578	UNIT E	007-000	DEB	1.50	3.20	CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-207C	MONO	A47	SUR	SUR	DBTG	1.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-262	MONO	A56	SUR	SUR	BIF	1.60	0.00	CD	VIS	338683	4181012	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
349-295C	MONO	A70	SUR	SUR	DBTG	1.60	0.00	CD	VIS	337660	4172947	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-299D	MONO	A72	SUR	SUR	DBTG	1.60	0.00	CD	VIS	333920	4176123	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-317D	MONO	A80	SUR	LOCUS 1	DBTG	1.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-358	MONO	A88	SUR	LOCUS C	BIF	1.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-439	MONO	W131	SUR	SUR	PRJPT	1.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-60	MNO	MNO-0578	UNIT E	040-050	DEB	1.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-80	MNO	MNO-0578	UNIT E	050-060	DEB	1.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-179	MNO	MNO-0578	UNIT E	140-150	DEB	1.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
17	MNO	MNO-0833	UNIT B 4	010-020	DEB	1.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-UI004B	MNO	MNO-0578	UNIT I	020-030	PPT	1.60	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-71	MONO	A20	SUR	SUR	BIF	1.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-199	MONO	A44	SUR	SUR	BIF	1.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-267A	MONO	A58	SUR	SUR	DBTG	1.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-286D	MONO	A66	SUR	SUR	DBTG	1.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-313A	MONO	A78	SUR	SUR	DBTG	1.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-317E	MONO	A80	SUR	LOCUS 1	DBTG	1.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-347	MONO	A88	SUR	LOCUS B	BIF	1.60	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-353	MONO	A88	SUR	LOCUS B	BIF	1.60	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-357	MONO	A88	SUR	LOCUS C	BIF	1.60	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-374	MONO	A88	SUR	LOCUS D1	BIF	1.60	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1057	MONO	MNO-0891	STU 38	0-10	DBTG	1.60	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-770	MONO	F171	SUR	LOCUS C	BIF	1.60	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-13	MNO	MNO-0578	UNIT E	000-010	DEB	1.60	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-55	MNO	MNO-0578	UNIT E	030-040	DEB	1.60	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-69	MNO	MNO-0578	UNIT E	040-050	DEB	1.60	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-162	MNO	MNO-0578	UNIT E	120-130	DEB	1.60	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-TR013	MNO	MNO-0578	TRENCH	-	PPT	1.60	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-70E	MONO	A20	SUR	SUR	DBTG	1.60	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-104B	MONO	A30	SUR	SUR	DBTG	1.60	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-238C	MONO	A49	SUR	SUR	DBTG	1.60	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-275D	MONO	A62	SUR	SUR	DBTG	1.60	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-277B	MONO	A63	SUR	LOCUS B	DBTG	1.60	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-310C	MONO	A77	SUR	SUR	DBTG	1.60	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-376	MONO	A88	SUR	LOCUS D1	BIF	1.60	0.00	CD	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-464	MONO	F135	SUR	SUR	PRJPT	1.70	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-855	MONO	IF05	SUR	SUR	PRJPT	1.70	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
578-51	MNO	MNO-0578	UNIT E	030-040	DEB	1.70		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
578-114	MNO	MNO-0578	UNIT E	080-090	DEB	1.70	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
578-160	MNO	MNO-0578	UNIT E	120-130	DEB	1.70	0.00	CD-LM	XRF	315110	4181840		11	Holocene	latest-Holo	Conway-Conway cobbly-Chesaw family association, 0 to 15 percent slopes
578-181	MNO	MNO-0578	UNIT E	140-150	DEB	1.70	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
578-TR034A	MNO	MNO-0578	TRENCH	-	PPT	1.70	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
578-UE007A	MNO	MNO-0578	UNIT E	27.5	PPT	1.70	0.00	CD	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
578-UE007B	MNO	MNO-0578	UNIT E	27.5	PPT	1.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-275C	MONO	A62	SUR	SUR	DBTG	1.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-312	MONO	A77	SUR	SUR	BIF	1.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-317B	MONO	A80	SUR	LOCUS 1	DBTG	1.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-362	MONO	A88	SUR	LOCUS D1	BIF	1.70	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-370	MONO	A88	SUR	LOCUS D1	BIF	1.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-755	MONO	F171	SUR	LOCUS A	BIF	1.70	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
349-768D	MONO	F171	SUR	LOCUS C	DBTG	1.70	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-869	MONO	IF20	SUR	SUR	BIF	1.70	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-174	MNO	MNO-0578	UNIT E	130-140	DEB	1.70	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-96	MNO	MNO-0578	UNIT E	070-080	DEB	1.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
30	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-70C	MONO	A20	SUR	SUR	DBTG	1.70	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-124C	MONO	A35	SUR	SUR	DBTG	1.70	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-308C	MONO	A76	SUR	SUR	DBTG	1.70	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-338B	MONO	A86	SUR	SUR	DBTG	1.70	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-371	MONO	A88	SUR	LOCUS D1	BIF	1.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-385	MONO	A88	SUR	LOCUS D2	BIF	1.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
119-13-8	MONO	MNO-2122	SURFACE AREA f		DBTG	1.70	0.00	CD	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
578-68	MNO	MNO-0578	UNIT E	040-050	DEB	1.70	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
42	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.70	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
38	MNO	MNO-0833	UNIT C 7	040-050	DEB	1.80	0.00	CD	XRF	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UE004	MNO	MNO-0578	UNIT E	010-020	PPT	1.80	0.00	CD	XRF	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UE028	MNO	MNO-0578	UNIT E	080-090	PPT	1.80	0.00	CD	VIS	333732	4175542	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-89	MONO	A24	SUR	SUR	BIF	1.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-238E	MONO	A49	SUR	SUR	DBTG	1.80	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-275A	MONO	A62	SUR	SUR	DBTG	1.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-279A	MONO	A63	SUR	LOCUS B	DBTG	1.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-281A	MONO	A64	SUR	SUR	DBTG	1.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-281E	MONO	A64	SUR	SUR	DBTG	1.80		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-317A	MONO	A80	SUR	LOCUS 1	DBTG	1.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-320E	MONO	A81	SUR	SUR	DBTG	1.80	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
349-335C	MONO	A85	SUR	SUR	DBTG	1.80	0.00	CD	VIS	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-348	MONO	A88	SUR	LOCUS B	BIF	1.80	0.00	CD	VIS	334245	4175749	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-349	MONO	A88	SUR	LOCUS B	BIF	1.80	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-404E	MONO	A89	SUR	SUR	DBTG	1.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
119-95-7	MONO	MNO-2122	SURFACE AREA aa		PRJPT	1.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-5	MNO	MNO-0578	UNIT E	007-000	DEB	1.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-19	MNO	MNO-0578	UNIT E	000-010	DEB	1.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-37	MNO	MNO-0578	UNIT E	020-030	DEB	1.80	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-52	MNO	MNO-0578	UNIT E	030-040	DEB	1.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-59	MNO	MNO-0578	UNIT E	030-040	DEB	1.80	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
578-66	MNO	MNO-0578	UNIT E	040-050	DEB	1.80	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-129	MNO	MNO-0578	UNIT E	090-100	DEB	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-161	MNO	MNO-0578	UNIT E	120-130	DEB	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-147	MNO	MNO-0578	UNIT E	110-120	DEB	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
23	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-TR034B	MNO	MNO-0578	TRENCH	-	PPT	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UE022	MNO	MNO-0578	UNIT E	060-070	PPT	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UE031	MNO	MNO-0578	UNIT E	080-090	PPT	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-238D	MONO	A49	SUR	SUR	DBTG	1.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-240E	MONO	A50	SUR	SUR	DBTG	1.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-281D	MONO	A64	SUR	SUR	DBTG	1.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-288E	MONO	A67	SUR	SUR	DBTG	1.80	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-369	MONO	A88	SUR	LOCUS D1	BIF	1.80	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-753	MONO	F171	SUR	SUR	PRJPT	1.80	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-6	MNO	MNO-0578	UNIT E	007-000	DEB	1.80	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-91	MNO	MNO-0578	UNIT E	060-070	DEB	1.80	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-98	MNO	MNO-0578	UNIT E	070-080	DEB	1.80	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-116	MNO	MNO-0578	UNIT E	080-090	DEB	1.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
578-TR01A	MNO	MNO-0578	TRENCH	-	PPT	1.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-70B	MONO	A20	SUR	SUR	DBTG	1.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-267B	MONO	A58	SUR	SUR	DBTG	1.80	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-275E	MONO	A62	SUR	SUR	DBTG	1.80	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-277B	MONO	A63	SUR	LOCUS A	DBTG	1.80	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
349-288B	MONO	A67	SUR	SUR	DBTG	1.80	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-308D	MONO	A76	SUR	SUR	DBTG	1.80	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
349-793C	MONO	F172	SUR	SUR	DBTG	1.80	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
578-26	MNO	MNO-0578	UNIT E	010-020	DEB	1.90	0.00	CD	XRF	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-29	MNO	MNO-0578	UNIT E	010-020	DEB	1.90	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-65	MNO	MNO-0578	UNIT E	040-050	DEB	1.90	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
578-132	MNO	MNO-0578	UNIT E	090-100	DEB	1.90	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-149	MNO	MNO-0578	UNIT E	110-120	DEB	1.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
13	MNO	MNO-0833	UNIT B 3	000-010	DEB	1.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
UD019	MNO	MNO-0578	UNIT D	107	PPT	1.90	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-250A	MONO	A53	SUR	SUR	DBTG	1.90		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-290A	MONO	A68	SUR	SUR	DBTG	1.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-320D	MONO	A81	SUR	SUR	DBTG	1.90	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
349-331	MONO	A84	SUR	LOCUS 2	BIF	1.90	0.00	CD	VIS	333920	4176123	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-338C	MONO	A86	SUR	SUR	DBTG	1.90	0.00	CD	VIS	333920	4176123	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
832	MONO	MNO-0891	UNIT 1	20-30	DBTG	1.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-419	MONO	W125	SUR	SUR	PRJPT	1.90	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-87	MNO	MNO-0578	UNIT E	060-070	DEB	1.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-92	MNO	MNO-0578	UNIT E	060-070	DEB	1.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-134	MNO	MNO-0578	UNIT E	100-110	DEB	1.90	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
578-TR01B	MNO	MNO-0578	TRENCH	-	PPT	1.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-67	MONO	A19	SUR	SUR	BIF	1.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-198A	MONO	A44	SUR	SUR	BIF	1.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-275B	MONO	A62	SUR	SUR	DBTG	1.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
852	MONO	MNO-0891	UNIT 1	30-40	DBTG	1.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
833	MONO	MNO-0891	UNIT 1	20-30	DBTG	1.90	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-768B	MONO	F171	SUR	LOCUS C	DBTG	1.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-903	MONO	IF42	SUR	SUR	PRJPT	1.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-31	MNO	MNO-0578	UNIT E	010-020	DEB	1.90	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-48	MNO	MNO-0578	UNIT E	030-040	DEB	1.90	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-130	MNO	MNO-0578	UNIT E	090-100	DEB	1.90	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-138	MNO	MNO-0578	UNIT E	100-110	DEB	1.90	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-139	MNO	MNO-0578	UNIT E	100-110	DEB	1.90	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-141	MNO	MNO-0578	UNIT E	100-110	DEB	1.90	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-142	MNO	MNO-0578	UNIT E	100-110	DEB	1.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-61	MNO	MNO-0578	UNIT E	040-050	DEB	1.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-UH020A	MNO	MNO-0578	UNIT H	090-100	PPT	1.90	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UE034	MNO	MNO-0578	UNIT E	96	PPT	1.90	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-205B	MONO	A46	SUR	SUR	DBTG	1.90	2.70	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-267E	MONO	A58	SUR	SUR	DBTG	1.90	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-290E	MONO	A68	SUR	SUR	DBTG	1.90	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-352	MONO	A88	SUR	LOCUS B	BIF	1.90	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-363	MONO	A88	SUR	LOCUS D1	BIF	1.90	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
808	MONO	MNO-0891	UNIT 1	0-10	DBTG	1.90	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
885	MONO	MNO-0891	UNIT 8	0-10	DBTG	1.90	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
995	MONO	MNO-0891	SCN78/W50	SURFACE	BIF	1.90	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-43	MNO	MNO-0578	UNIT E	020-030	DEB	1.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-63	MNO	MNO-0578	UNIT E	040-050	DEB	1.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-73	MNO	MNO-0578	UNIT E	050-060	DEB	1.90	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
578-82	MNO	MNO-0578	UNIT E	050-060	DEB	1.90	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
578-83	MNO	MNO-0578	UNIT E	050-060	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-104	MNO	MNO-0578	UNIT E	070-080	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-108	MNO	MNO-0578	UNIT E	080-090	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-124	MNO	MNO-0578	UNIT E	090-100	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-151	MNO	MNO-0578	UNIT E	110-120	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-158	MNO	MNO-0578	UNIT E	120-130	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-164	MNO	MNO-0578	UNIT E	120-130	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-176	MNO	MNO-0578	UNIT E	130-140	DEB	1.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
19	MNO	MNO-0833	UNIT A 1	001-010	DEB	1.90	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
578-UE002A	MNO	MNO-0578	UNIT G	010-020	PPT	1.90	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
578-UG002B	MNO	MNO-0578	UNIT G	010-020	PPT	1.90	0.00	CD	XRF	336079	4174840	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
578-UG022	MNO	MNO-0578	UNIT G	110	PPT	1.90	0.00	CD	VIS	339861	4185791	83		pre-Quat	pre-Quat	Neuske family, 15 to 30 percent slopes.
578-UH020B	MNO	MNO-0578	UNIT H	090-100	PPT	1.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
578-UI007B	MNO	MNO-0578	UNIT I	040-050	PPT	1.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-88D	MONO	A24	SUR	SUR	DBTG	2.00	0.00	CD	VIS	339269	4173705	83		Volcanics	Latest Holocene Ash/Pumice	Cashbaugh-Buscones-Calpine family complex, 0 to 4 percent slopes
349-198D	MONO	A44	SUR	SUR	DBTG	2.00	0.00	CD	VIS	334751	4172992	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-238A	MONO	A49	SUR	SUR	DBTG	2.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-310D	MONO	A77	SUR	SUR	DBTG	2.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-356	MONO	A88	SUR	LOCUS C	BIF	2.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-404C	MONO	A89	SUR	SUR	DBTG	2.00	0.00	CD-LM	XRF	316430	4182250		11	Volcanics	Latest Holocene Ash/Pumice	Nanamkin family-Vitrandic Haploxerolls complex, 15 to 30 percent slopes..
349-412	MONO	W125	SUR	SUR	PRJPT	2.00	0.00	CD-LM	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
578-27	MNO	MNO-0578	UNIT E	010-020	DEB	2.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-76	MNO	MNO-0578	UNIT E	050-060	DEB	2.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-110	MNO	MNO-0578	UNIT E	080-090	DEB	2.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-117	MNO	MNO-0578	UNIT E	080-090	DEB	2.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-118	MNO	MNO-0578	UNIT E	080-090	DEB	2.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-123	MNO	MNO-0578	UNIT E	090-100	DEB	2.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-125	MNO	MNO-0578	UNIT E	090-100	DEB	2.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-146	MNO	MNO-0578	UNIT E	110-120	DEB	2.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-1485	MNO	MNO-0578	UNIT E	140-150	DEB	2.00	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-186	MNO	MNO-0578	UNIT E	140-150	DEB	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-TR011A	MNO	MNO-0578	TRENCH	-	PPT	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-TR011B	MNO	MNO-0578	TRENCH	-	PPT	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UD006	MNO	MNO-0578	UNIT D	50	PPT	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UD014	MNO	MNO-0578	UNIT D	080-090	PPT	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-277C	MONO	A63	SUR	LOCUS A	DBTG	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-277D	MONO	A63	SUR	LOCUS A	DBTG	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-283B	MONO	A65	SUR	SUR	DBTG	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-333	MONO	A84	SUR	LOCUS 2	BIF	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-338D	MONO	A86	SUR	SUR	DBTG	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-71	MNO	MNO-0578	UNIT E	040-050	DEB	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-94	MNO	MNO-0578	UNIT E	060-070	DEB	2.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-127	MNO	MNO-0578	UNIT E	090-100	DEB	2.00	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-140	MNO	MNO-0578	UNIT E	100-110	DEB	2.00	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-144	MNO	MNO-0578	UNIT E	100-110	DEB	2.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-152	MNO	MNO-0578	UNIT E	110-120	DEB	2.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-172	MNO	MNO-0578	UNIT E	130-140	DEB	2.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-173	MNO	MNO-0578	UNIT E	130-140	DEB	2.00	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-169	MNO	MNO-0578	UNIT E	130-140	DEB	2.00	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-SC001A	MNO	MNO-0578	SURFACE	SURFACE	PPT	2.00	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-UE17A	MNO	MNO-0578	UNIT E	050-060	PPT	2.00	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-UI007A	MNO	MNO-0578	UNIT I	040-050	PPT	2.00	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-UI024A	MNO	MNO-0578	UNIT I	090-100	PPT	2.00	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
578-UI024B	MNO	MNO-0578	UNIT I	090-100	PPT	2.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-224	MONO	A48	SUR	LOCUS 2	BIF	2.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-240A	MONO	A50	SUR	SUR	DBTG	2.00	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-295E	MONO	A70	SUR	SUR	DBTG	2.00	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-346	MONO	A88	SUR	LOCUS B	BIF	2.00	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-386	MONO	A88	SUR	LOCUS D2	BIF	2.00	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
809	MONO	MNO-0891	UNIT 1	0-10	DBTG	2.00	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
821	MONO	MNO-0891	UNIT 1	10-20	DBTG	2.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
826	MONO	MNO-0891	UNIT 1	10-20	DBTG	2.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
511	MONO	MNO-0891	STU 54	0-10	PRJPT	2.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-11	MNO	MNO-0578	UNIT E	007-000	DEB	2.00	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
578-21	MNO	MNO-0578	UNIT E	000-010	DEB	2.00	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
578-38	MNO	MNO-0578	UNIT E	020-030	DEB	2.00	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
578-70	MNO	MNO-0578	UNIT E	040-050	DEB	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-85	MNO	MNO-0578	UNIT E	060-070	DEB	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-95	MNO	MNO-0578	UNIT E	060-070	DEB	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-136	MNO	MNO-0578	UNIT E	100-110	DEB	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-150	MNO	MNO-0578	UNIT E	110-120	DEB	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-175	MNO	MNO-0578	UNIT E	130-140	DEB	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-SC001B	MNO	MNO-0578	SURFACE	SURFACE	PPT	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-TR036A	MNO	MNO-0578	TRENCH	-	PPT	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-UE17B	MNO	MNO-0578	UNIT E	050-060	PPT	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
UA016	MNO	MNO-0578	UNIT A	080-090	PPT	2.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
UE045	MNO	MNO-0578	UNIT E	130-140	PPT	2.00	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
UG009	MNO	MNO-0578	UNIT G	050-060	PPT	2.00	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-102E	MONO	A29	SUR	SUR	DBTG	2.00	0.00	CD	VIS	338529	4181901	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
837	MONO	MNO-0891	UNIT 1	20-30	DBTG	2.00	0.00	CD	XRF	338647	4180281	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
349-832	MONO	IA24	SUR	SUR	PRJPT	2.00	0.00	CD	VIS	337711	4181494	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
578-171	MNO	MNO-0578	UNIT E	130-140	DEB	2.10	0.00	CD	VIS	336845	4174045	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-25	MNO	MNO-0578	UNIT E	010-020	DEB	2.10	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-155	MNO	MNO-0578	UNIT E	110-120	DEB	2.10	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
578-UG025	MNO	MNO-0578	UNIT G	120	PPT	2.10	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UA016	MNO	MNO-0578	UNIT A	080-090	PPT	2.10	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UA017	MNO	MNO-0578	UNIT A	85	PPT	2.10	0.00	CD	XRF	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UE024	MNO	MNO-0578	UNIT E	080-090	PPT	2.10	0.00	CD	VIS	333911	4175359	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-107	MONO	A30	SUR	SUR	FRMFLKTL	2.10	0.00	CD	XRF	340087	4183720	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
349-283A	MONO	A65	SUR	SUR	DBTG	2.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-283C	MONO	A65	SUR	SUR	DBTG	2.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
967	MONO	MNO-0891	STU22	0-10	DBTG	2.10	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
968	MONO	MNO-0891	STU22	0-10	DBTG	2.10	0.00	CD	VIS	334245	4175749	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-504	MONO	F141	SUR	SUR	DBTG	2.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-159	MNO	MNO-0578	UNIT E	120-130	DEB	2.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-TR02	MNO	MNO-0578	TRENCH	-	PPT	2.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA018	MNO	MNO-0578	UNIT A	90	PPT	2.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-88A	MONO	A24	SUR	SUR	DBTG	2.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
974	MONO	MNO-0891	SCS91/E36	SURFACE	BIF	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
941	MONO	MNO-0891	STU14	0-10	DBTG	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
834	MONO	MNO-0891	UNIT 1	20-30	DBTG	2.10	0.00	CD	XRF	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
884	MONO	MNO-0891	UNIT 8	0-10	DBTG	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-793A	MONO	F172	SUR	SUR	DBTG	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-793B	MONO	F172	SUR	SUR	DBTG	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-843	MONO	IW2	SUR	SUR	BIF	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-135	MNO	MNO-0578	UNIT E	100-110	DEB	2.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-153	MNO	MNO-0578	UNIT E	110-120	DEB	2.10	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-UI012B	MNO	MNO-0578	UNIT I	050-060	PPT	2.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UC017	MNO	MNO-0578	UNIT C	020-030	PPT	2.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-88B	MONO	A24	SUR	SUR	DBTG	2.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-148C	MONO	A38	SUR	LOCUS 1	DBTG	2.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-338A	MONO	A86	SUR	SUR	DBTG	2.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
862	MONO	MNO-0891	UNIT 1	50-60	DBTG	2.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
839	MONO	MNO-0891	UNIT 1	20-30	DBTG	2.10	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-145	MNO	MNO-0578	UNIT E	110-120	DEB	2.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-184	MNO	MNO-0578	UNIT E	140-150	DEB	2.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
77	MONO	MNO-3176	2	D	DBTG	2.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
848	MONO	MNO-0891	UNIT 1	30-40	DBTG	2.10	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
863	MONO	MNO-0891	UNIT 1	50-60	DBTG	2.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
868	MONO	MNO-0891	UNIT 1	50-60	DBTG	2.10	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
870	MONO	MNO-0891	UNIT 1	50-60	DBTG	2.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
1081	MONO	MNO-0891	SCN51/W214	SURFACE	PRJPT	2.10	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1086	MONO	MNO-0891	SCN56/W193	SURFACE	PRJPT	2.10	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-3	MNO	MNO-0578	UNIT E	007-000	DEB	2.10	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-97	MNO	MNO-0578	UNIT E	070-080	DEB	2.10	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-107	MNO	MNO-0578	UNIT E	070-080	DEB	2.10	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-119	MNO	MNO-0578	UNIT E	080-090	DEB	2.10	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-122	MNO	MNO-0578	UNIT E	090-100	DEB	2.10	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-165	MNO	MNO-0578	UNIT E	120-130	DEB	2.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-UI012A	MNO	MNO-0578	UNIT I	050-060	PPT	2.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-104C	MONO	A30	SUR	SUR	DBTG	2.10	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-286E	MONO	A66	SUR	SUR	DBTG	2.10	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
935	MONO	MNO-0891	STU 10	10-20	DBTG	2.10	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1092	MONO	MNO-0891	SCN37/W194	SURFACE	FRMFLKTL	2.10	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-508	MONO	F141	SUR	SUR	DBTG	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-10	MNO	MNO-0578	UNIT E	000-010	DEB	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-93	MNO	MNO-0578	UNIT E	060-070	DEB	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-166	MNO	MNO-0578	UNIT E	120-130	DEB	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-168	MNO	MNO-0578	UNIT E	130-140	DEB	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-UI029A	MNO	MNO-0578	UNIT I	090-100	PPT	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
UE029	MNO	MNO-0578	UNIT E	080-090	PPT	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-198C	MONO	A44	SUR	SUR	DBTG	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-243A	MONO	A51	SUR	SUR	DBTG	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
822	MONO	MNO-0891	UNIT 1	10-20	DBTG	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
823	MONO	MNO-0891	UNIT 1	10-20	DBTG	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
838	MONO	MNO-0891	UNIT 1	20-30	DBTG	2.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
615	MONO	MNO-0891	SCN40/195	SURFACE	PRJPT	2.10	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
578-7	MNO	MNO-0578	UNIT E	007-000	DEB	2.10	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
578-36	MNO	MNO-0578	UNIT E	020-030	DEB	2.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
578-111	MNO	MNO-0578	UNIT E	080-090	DEB	2.20	0.00	CD	VIS	337188	4173525	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
578-115	MNO	MNO-0578	UNIT E	080-090	DEB	2.20	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
578-128	MNO	MNO-0578	UNIT E	090-100	DEB	2.20	0.00	CD	VIS	333133	4176046	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
578-183	MNO	MNO-0578	UNIT E	140-150	DEB	2.20	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
578-SC0017A	MNO	MNO-0578	SURFACE	SURFACE	PPT	2.20	0.00	CD	XRF	340108	4186104	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
578-UH021B	MNO	MNO-0578	UNIT H	090-100	PPT	2.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
578-UI029B	MNO	MNO-0578	UNIT I	090-100	PPT	2.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
UE021	MNO	MNO-0578	UNIT E	070-080	PPT	2.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
UG004	MNO	MNO-0578	UNIT G	020-030	PPT	2.20	0.00	CD	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
349-86C	MONO	A24	SUR	SUR	DBTG	2.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-86D	MONO	A24	SUR	SUR	DBTG	2.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-198B	MONO	A44	SUR	SUR	DBTG	2.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-283E	MONO	A65	SUR	SUR	DBTG	2.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
806	MONO	MNO-0891	UNIT 1	0-10	DBTG	2.20	0.00	CD	XRF	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
855	MONO	MNO-0891	UNIT 1	30-40	DBTG	2.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
861	MONO	MNO-0891	UNIT 1	50-60	DBTG	2.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
869	MONO	MNO-0891	UNIT 1	50-60	DBTG	2.20	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
1117	MONO	MNO-0891	UNIT 1	10-20	DBTG	2.20	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
628	MONO	MNO-0891	SCN25/W194	SURFACE	FRMFLKTL	2.20	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-680	MONO	F162	SUR	SUR	BIF	2.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-793D	MONO	F172	SUR	SUR	DBTG	2.20	3.40	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-909	MONO	IF49	SUR	SUR	PRJPT	2.20	3.40	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-34	MNO	MNO-0578	UNIT E	010-020	DEB	2.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-121	MNO	MNO-0578	UNIT E	090-100	DEB	2.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-163	MNO	MNO-0578	UNIT E	120-130	DEB	2.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-178	MNO	MNO-0578	UNIT E	130-140	DEB	2.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-133	MNO	MNO-0578	UNIT E	100-110	DEB	2.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-UH021A	MNO	MNO-0578	UNIT H	090-100	PPT	2.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-255A	MONO	A55	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-283D	MONO	A65	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
835	MONO	MNO-0891	UNIT 1	20-30	DBTG	2.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-503A	MONO	F141	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-2005	MONO	IA25	SUR	SUR	PRJPT	2.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-22	MNO	MNO-0578	UNIT E	000-010	DEB	2.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-62	MNO	MNO-0578	UNIT E	040-050	DEB	2.20	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-SC002A	MNO	MNO-0578	SURFACE	SURFACE	PPT	2.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
578-SC002B	MNO	MNO-0578	SURFACE	SURFACE	PPT	2.20	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-88C	MONO	A24	SUR	SUR	DBTG	2.20	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-274E	MONO	A61	SUR	SUR	DBTG	2.20	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-404A	MONO	A89	SUR	SUR	DBTG	2.20	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
924	MONO	MNO-0891	STU 10	0-10	DBTG	2.20	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
927	MONO	MNO-0891	STU 10	0-10	DBTG	2.20	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
922	MONO	MNO-0891	STU 09	0-10	DBTG	2.20	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
820	MONO	MNO-0891	UNIT 1	10-20	BIF	2.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-72	MNO	MNO-0578	UNIT E	050-060	DEB	2.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-77	MNO	MNO-0578	UNIT E	050-060	DEB	2.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-351	MONO	A88	SUR	LOCUS B	BIF	2.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
807	MONO	MNO-0891	UNIT 1	0-10	DBTG	2.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
578-TR012B	MNO	MNO-0578	TRENCH	-	PPT	2.20	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-205A	MONO	A46	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-250E	MONO	A53	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-255E	MONO	A55	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-271B	MONO	A60	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-274D	MONO	A61	SUR	SUR	DBTG	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
836	MONO	MNO-0891	UNIT 1	20-30	DBTG	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-15	MNO	MNO-0578	UNIT E	000-010	DEB	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-TR012A	MNO	MNO-0578	TRENCH	-	PPT	2.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
578-TR036B	MNO	MNO-0578	TRENCH	-	PPT	2.20	0.00	CD	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-150	MONO	A38	SUR	LOCUS 2	BIF	2.20	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-240C	MONO	A50	SUR	SUR	DBTG	2.20	0.00	CD	VIS	335849	4182571	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
349-277A	MONO	A63	SUR	LOCUS A	DBTG	2.20	0.00	CD	XRF	337711	4181494	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
810	MONO	MNO-0891	UNIT 1	0-10	DBTG	2.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
876	MONO	MNO-0891	UNIT 7	0-10	BIF	2.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
578-182	MNO	MNO-0578	UNIT E	140-150	DEB	2.30	0.00	CD	XRF	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-86B	MONO	A24	SUR	SUR	DBTG	2.30	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-86E	MONO	A24	SUR	SUR	DBTG	2.30	0.00	CD	VIS	333133	4176046	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-274A	MONO	A61	SUR	SUR	DBTG	2.30	0.00	CD	VIS	333133	4176046	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-274C	MONO	A61	SUR	SUR	DBTG	2.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-677	MONO	F162	SUR	SUR	BIF	2.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-411	MONO	W125	SUR	SUR	PRJPT	2.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-92A	MONO	A26	SUR	SUR	DBTG	2.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-244	MONO	A51	SUR	SUR	BIF	2.30	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
349-286A	MONO	A66	SUR	SUR	DBTG	2.30	0.00	CD-SR	XRF	361680	4127440		11	LtP	latest-Pleist	Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes.
933	MONO	MNO-0891	STU 10	10-20	DBTG	2.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
936	MONO	MNO-0891	STU 10	10-20	DBTG	2.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
917	MONO	MNO-0891	STU 09	0-10	DBTG	2.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
918	MONO	MNO-0891	STU 09	0-10	DBTG	2.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
920	MONO	MNO-0891	STU 09	0-10	DBTG	2.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-157	MNO	MNO-0578	UNIT E	120-130	DEB	2.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-243C	MONO	A51	SUR	SUR	DBTG	2.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-274B	MONO	A61	SUR	SUR	DBTG	2.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-507	MONO	F141	SUR	SUR	DBTG	2.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-UI004A	MNO	MNO-0578	UNIT I	020-030	PPT	2.30	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-149D	MONO	A38	SUR	LOCUS 2	DBTG	2.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-246C	MONO	A52	SUR	SUR	DBTG	2.30	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-286B	MONO	A66	SUR	SUR	DBTG	2.30	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-288D	MONO	A67	SUR	SUR	DBTG	2.30	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
926	MONO	MNO-0891	STU 10	0-10	DBTG	2.30	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
578-UE20A	MNO	MNO-0578	UNIT E	060-070	PPT	2.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
578-UE20B	MNO	MNO-0578	UNIT E	060-070	PPT	2.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
932	MONO	MNO-0891	STU 10	10-20	DBTG	2.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
811	MONO	MNO-0891	UNIT 1	0-10	DBTG	2.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
990	MONO	MNO-0891	SCN223/W 41	SURFACE	PRJPT	2.30	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-279D	MONO	A63	SUR	LOCUS B	DBTG	2.30	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-286C	MONO	A66	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-330	MONO	A84	SUR	LOCUS 2	BIF	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
934	MONO	MNO-0891	STU 10	10-20	DBTG	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
720	MONO	MNO-0891	SCN24/W186	SURFACE	FRMFLKTL	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-TR035B	MNO	MNO-0578	TRENCH	-	PPT	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
578-TR035A	MNO	MNO-0578	TRENCH	-	PPT	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-795	MONO	F172	SUR	SUR	BIF	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UE005	MNO	MNO-0578	UNIT E	010-020	PPT	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-277E	MONO	A63	SUR	LOCUS A	DBTG	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
964	MONO	MNO-0891	STU22	0-10	DBTG	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-288A	MONO	A67	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-205C	MONO	A46	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-205D	MONO	A46	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-250C	MONO	A53	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-255C	MONO	A55	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-271A	MONO	A60	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-255D	MONO	A55	SUR	SUR	DBTG	2.30	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-320A	MONO	A81	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
578-UH009	MNO	MNO-0578	UNIT H	030-040	PPT	2.30	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-104A	MONO	A30	SUR	SUR	DBTG	2.30	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
578-4	MNO	MNO-0578	UNIT E	007-000	DEB	2.30	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-850	MONO	IW15	SUR	SUR	PRJPT	2.30	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
923	MONO	MNO-0891	STU 10	0-10	DBTG	2.30	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-258	MONO	A55	SUR	SUR	PRJPT	2.30	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-279E	MONO	A63	SUR	LOCUS B	DBTG	2.30	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-503B	MONO	F141	SUR	SUR	DBTG	2.30	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-250B	MONO	A53	SUR	SUR	DBTG	2.30	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-271E	MONO	A60	SUR	SUR	DBTG	2.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-155	MONO	A38	SUR	N. BOUND	BIF	2.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-320C	MONO	A81	SUR	SUR	DBTG	2.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-250D	MONO	A53	SUR	SUR	DBTG	2.30	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-279C	MONO	A63	SUR	LOCUS B	DBTG	2.30	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-256	MONO	A55	SUR	SUR	PRJPT	2.30	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-404D	MONO	A89	SUR	SUR	DBTG	2.30	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-404B	MONO	A89	SUR	SUR	DBTG	2.30	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-271D	MONO	A60	SUR	SUR	DBTG	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
16	MNO	MNO-0833	UNIT A 7	040-050	DEB	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
87	MONO	MNO-3180	2		PRJPT	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
335-b	FRESNO	FRE-0061	N83;W37	10-20	DBTG	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
92-1-FW-225	FRESNO	FRE-0061	N143;E3/100-110	100-110	BIF	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
79	MONO	MNO-3178	2		PRJPT	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
255	INYO	INY-5273/H	3C		DRILL	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
41a	FRESNO	FRE-0632			DBTG	2.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
8a	FRESNO	FRE-0632			DBTG	2.30	0.00	CD	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
46b	FRESNO	FRE-0632			DBTG	2.30	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
89	MONO	MNO-3180	2	J	DBTG	2.30	0.00	CD	XRF	335849	4182571	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
62	MONO	MNO-0382	2	H	DBTG	2.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
81-248-10-457	INYO	INY-5267	S148/E129	30-40	DRILL	2.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
W-2-0159	KER	KER-0116	EU 42,10-20		flake tool	2.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
20a	FRESNO	FRE-0632			DBTG	2.30		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
67c	FRESNO	FRE-0632			DBTG	2.30		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
62	MONO	MNO-0382	2	I	DBTG	2.40	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
46c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	336803	4173368	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
12a	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
76b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
62a	FRESNO	FRE-0632			DBTG	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
099-001	KERN	KER-5582	SP 31	20-40 cm	DEB	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
099-001	KERN	KER-5582	SP-31	20-40 cm	DEB	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
61a	FRESNO	FRE-0632			DBTG	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
67a	FRESNO	FRE-0632			DBTG	2.40		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
62c	FRESNO	FRE-0632			DBTG	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-822	MONO	IA15	SUR	SUR	PRJPT	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
W-2-2186	KER	KER-0116	EU 39, 90-100		debitage	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
92-1-FW-169	FRESNO	FRE-0061	N143;E3/3040	30-40	BIF	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
61b	FRESNO	FRE-0632			DBTG	2.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
67b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
335-d	FRESNO	FRE-0061	N83;W37	10-20	DBTG	2.40	0.00	CD	VIS	333843	4177378	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
39b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
8b	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
78a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
4b	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
62	MONO	MNO-0382	2	A	DBTG	2.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
W-2-0043	KER	KER-0116	Burial 12		PPT	2.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
335-c	FRESNO	FRE-0061	N83;W37	10-20	DBTG	2.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
20c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
76c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
92-1-FW-352-b	FRESNO	FRE-0061	N83;W37	30-40	DBTG	2.40	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
69b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
18	FRESNO	FRE-0632	Unit 5		PRJPT	2.40	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7a	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
747-a	FRESNO	FRE-0061	N120;W30/ 120-13	120-130	DBTG	2.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
62b	FRESNO	FRE-0632			DBTG	2.40	3.90	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
1c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
642-a	FRESNO	FRE-0061	N120;W30/ 10-20	10-20	DBTG	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
13c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
9a	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
642-c	FRESNO	FRE-0061	N120;W30/ 10-20	10-20	DBTG	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
92-1-FW-316	FRESNO	FRE-0061	N83;W7	40-45	BIF	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
92-1-FW-345-d	FRESNO	FRE-0061	N83;W37	20-30	DBTG	2.40	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
1a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
13a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
19a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
25b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
735-a	FRESNO	FRE-0061	N120;W30/ 110-12	110-120	DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
649-e	FRESNO	FRE-0061	N120;W30/ 20-30	20-30	DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
25a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
41b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
92-1-FW-720-c	FRESNO	FRE-0061	N120;W30/ 100-11	100-110	DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
58b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
25c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
30	FRESNO	FRE-0633			BIF	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
8b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
14d	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
61c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
69c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
11	FRESNO	FRE-0633			BIF	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
335-f	FRESNO	FRE-0061	N83;W37	10-20	DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
31012-05	KER	KER-3080	EU 2, 0-20		debitage	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
20b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
92-1-FW-371	FRESNO	FRE-0061	N83;W37	50-60	BIF	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
78b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
13b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
6a	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2b	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
14b	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
16b	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
W-2-0191	KER	KER-0116	EU 59, 10-20		PPT	2.40	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
39c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
7b	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
747-d	FRESNO	FRE-0061	N120;W30/ 120-13	120-130	DBTG	2.40	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
43002-02	KER	KER-5392	RRU 41 , 40-80		debitage	2.40	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
635-b	FRESNO	FRE-0061	N120;W30/ 0-10	0-10	DBTG	2.40	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
635-a	FRESNO	FRE-0061	N120;W30/ 0-10	0-10	DBTG	2.40	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
92-1-FW-345-c	FRESNO	FRE-0061	N83;W37	20-30	DBTG	2.40	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
747-c	FRESNO	FRE-0061	N120;W30/ 120-13	120-130	DBTG	2.40	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
92-1-FW-595	FRESNO	FRE-0061	N110;W39/ 50-60	50-60	FRMFLKTL	2.40	2.80	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-823	MONO	IA15	SUR	SUR	PRJPT	2.40	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9b	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
92-1-FW-761-b	FRESNO	FRE-0061	N120;W30/ 130-17	130-175	DBTG	2.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
92-1-FW-352-d	FRESNO	FRE-0061	N83;W37	30-40	DBTG	2.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
92-1-FW-720-d	FRESNO	FRE-0061	N120;W30/ 100-11	100-110	DBTG	2.40	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
420-l	FRESNO	FRE-0061	N83;W37	90-100	DBTG	2.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
420-h	FRESNO	FRE-0061	N83;W37	90-100	DBTG	2.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
1a	FRESNO	FRE-0633			DBTG	2.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
335-i	FRESNO	FRE-0061	N83;W37	10-20	DBTG	2.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
78c	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
69a	FRESNO	FRE-0632			DBTG	2.40	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
92-1-FW-775	FRESNO	FRE-0061	N120;W30/ 130-17	130-175	DBTG	2.40	0.00	CD	VIS	339861	4185791	83		pre-Quat	pre-Quat	Neuske family, 15 to 30 percent slopes.
92-1-FW-761-c	FRESNO	FRE-0061	N120;W30/ 130-17	130-175	DBTG	2.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
92-1-FW-427-b	FRESNO	FRE-0061	N83;W37	100-110	DBTG	2.40		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
420-g	FRESNO	FRE-0061	N83;W37	90-100	DBTG	2.40		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5223	TULARE	TUL-1258			PRJPT	2.50	0.00	CD	VIS	337188	4173525	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
287	INYO	INY-5255/H	3A		PRJPT	2.50	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
5218	TULARE	TUL-1258			PRJPT	2.50	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
47	INYO	INY-0469/H	3A	F	DBTG	2.50	0.00	CD	VIS	333475	4173926	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-129	MONO	A36	SUR	LOCUS 1	BIF	2.50	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
5197	TULARE	TUL-1257			DBTG	2.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
85	FRESNO	FRE-1154			BIF	2.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5224	TULARE	TUL-1258			FLKTL	2.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-825	MONO	IA17	SUR	SUR	PRJPT	2.50		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-132	MONO	A36	SUR	LOCUS 3	BIF	2.50	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5224	TULARE	TUL-1258			FLKTL	2.50	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-130D	MONO	A36	SUR	LOCUS 2	DBTG	2.50	0.00	CD	XRF	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-134	MONO	A36	SUR	LOCUS 3	BIF	2.50	0.00	CD	VIS	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-130B	MONO	A36	SUR	LOCUS 2	DBTG	2.50	0.00	CD	VIS	334245	4174630	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-130C	MONO	A36	SUR	LOCUS 2	DBTG	2.50	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-130E	MONO	A36	SUR	LOCUS 2	DBTG	2.50	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-130A	MONO	A36	SUR	LOCUS 2	DBTG	2.50	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
271	INYO	INY-5246	3A	D	DBTG	2.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
47	INYO	INY-0469/H	3A	C	DBTG	2.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-826	MONO	IA18	SUR	SUR	PRJPT	2.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-133	MONO	A36	SUR	SUR	PRJPT	2.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-137	MONO	A36	SUR	TERRACE	BIF	2.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-135	MONO	A36	SUR	LOCUS 3	BIF	2.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
81-230-032-001	INYO	INY-5277	-	-	PRJPT	2.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
81-230-045-001	INYO	INY-5277	-	-	PRJPT	2.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
227-1-206b	INYO	INY-5277			DBTG	2.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
L-499B	MONO	MNO-0446	SQUARE-7	0-10	DBTG	2.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
L-538B	MONO	MNO-0446	SQUARE-7	30-40	DBTG	2.50	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
349-179D	MONO	A41	SUR	SUR	DBTG	2.50	3.50	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
9-705	INYO	INY-1386	AA15	0-.5'	PRJPT	2.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
L-192A	MONO	MNO-0446	SQUARE-4	10-20	DBTG	2.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
L-530A	MONO	MNO-0446	SQUARE-7	20-30	DBTG	2.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
9-1935	INYO	INY-1386	N11	0-.5'	PRJPT	2.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-42C	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-117E	MONO	A33	SUR	LOCUS A	DBTG	2.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-174	MONO	A40	SUR	SUR	BIF	2.50	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-171B	MONO	A40	SUR	LOCUS 3	DBTG	2.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-42A	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-42D	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
33c	FRESNO	FRE-1155			DBTG	2.50	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-42B	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-42E	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-42F	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-42G	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-42H	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-56	MONO	A15	SUR	SUR	BIF	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-179A	MONO	A41	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-179C	MONO	A41	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-201A	MONO	A45	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-201B	MONO	A45	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-420	MONO	MNO-0446	SQUARE-6	40-50	DBTG	2.50	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-735	MONO	F167	SUR	SUR	BIF	2.50	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
349-42I	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-171D	MONO	A40	SUR	LOCUS 3	DBTG	2.50	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-201D	MONO	A45	SUR	SUR	DBTG	2.50	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-666	MONO	F161	SUR	SUR	BIF	2.50	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-42J	MONO	A12	SUR	SUR	DBTG	2.50	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
L-495	MONO	MNO-0446	SQUARE-6	120-130	DBTG	2.50	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
349-203	MONO	A45	SUR	SUR	DBTG	2.50	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
56a	FRESNO	FRE-1155			DBTG	2.50	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
64a	FRESNO	FRE-1155			DBTG	2.50	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
74a	FRESNO	FRE-1155			DBTG	2.50	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-415	MONO	MNO-0446	SQUARE-6	30-40	DBTG	2.50	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-17	MONO	MNO-0446	SQUARE-1	10-20	PRJPT	2.50	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-73D	MONO	A21	SUR	SUR	BIF	2.50	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-195A	MONO	A43	SUR	SUR	DBTG	2.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
L-576B	MONO	MNO-0446	SQUARE-7	70-80	DBTG	2.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-109D	MONO	A31	SUR	SUR	DBTG	2.50	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-163C	MONO	A40	SUR	LOCUS 1	DBTG	2.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
L-547A	MONO	MNO-0446	SQUARE-7	40-50	DBTG	2.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-109E	MONO	A31	SUR	SUR	DBTG	2.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
53b	FRESNO	FRE-1155			DBTG	2.50	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
L-124	MONO	MNO-0446	SQUARE-2	90-100	DBTG	2.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-732B	MONO	F167	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-73B	MONO	A21	SUR	SUR	BIF	2.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-73C	MONO	A21	SUR	SUR	BIF	2.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-109A	MONO	A31	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-172	MONO	A40	SUR	SUR	DBTG	2.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-195B	MONO	A43	SUR	SUR	DBTG	2.50	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-195D	MONO	A43	SUR	SUR	DBTG	2.50	0.00	CD	XRF	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
349-201C	MONO	A45	SUR	SUR	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
L-556B	MONO	MNO-0446	SQUARE-7	50-60	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
349-195C	MONO	A43	SUR	SUR	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
L-466B	MONO	MNO-0446	SQUARE-6	80-90	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-499A	MONO	MNO-0446	SQUARE-7	0-10	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-538A	MONO	MNO-0446	SQUARE-7	30-40	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-563B	MONO	MNO-0446	SQUARE-7	60-70	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-576A	MONO	MNO-0446	SQUARE-7	70-80	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-584A	MONO	MNO-0446	SQUARE-7	80-90	DBTG	2.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-584B	MONO	MNO-0446	SQUARE-7	80-90	DBTG	2.50		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
156	INYO	INY-5244	3A		PRJPT	2.50		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-109C	MONO	A31	SUR	SUR	DBTG	2.50		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-175	MONO	A40	SUR	SUR	PRJPT	2.60	4.90	CD	VIS	336700	4173457	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-163D	MONO	A40	SUR	LOCUS 1	DBTG	2.60	0.00	CD	VIS	336845	4174045	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
22	FRESNO	FRE-1155			BIF	2.60	0.00	CD	VIS	337458	4173432	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
L-455	MONO	MNO-0446	SQUARE-6	70-80	DBTG	2.60	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
L-607B	MONO	MNO-0446	SQUARE-7	110-120	DBTG	2.60	0.00	CD	VIS	335363	4172257	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-474A	MONO	F138	SUR	LOCUS A	DBTG	2.60	0.00	CD	XRF	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-477	MONO	F138	SUR	LOCUS A	BIF	2.60	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-73E	MONO	A21	SUR	SUR	BIF	2.60	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-180	MONO	A41	SUR	SUR	PRJPT	2.60	0.00	CD	VIS	333911	4175359	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-179E	MONO	A41	SUR	SUR	DBTG	2.60	0.00	CD	VIS	332786	4174907	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
28b	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	332902	4175501	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
349-476	MONO	F138	SUR	LOCUS A	BIF	2.60	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
349-732C	MONO	F167	SUR	SUR	DBTG	2.60	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
349-900	MONO	IF39	SUR	SUR	PRJPT	2.60	0.00	CD	VIS	332856	4175923	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
349-55C	MONO	A15	SUR	SUR	DBTG	2.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-73A	MONO	A21	SUR	SUR	BIF	2.60	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
349-164	MONO	A40	SUR	LOCUS 1	DBTG	2.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-196	MONO	A43	SUR	SUR	BIF	2.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
43b	FRESNO	FRE-1155			DBTG	2.60		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
L-547B	MONO	MNO-0446	SQUARE-7	40-50	DBTG	2.60	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
349-485	MONO	F138	SUR	LOCUS B	BIF	2.60	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-109B	MONO	A31	SUR	SUR	DBTG	2.60	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-55E	MONO	A15	SUR	SUR	DBTG	2.60	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
349-179B	MONO	A41	SUR	SUR	DBTG	2.60	0.00	CD	VIS	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
L-208B	MONO	MNO-0446	SQUARE-4	30-40	DBTG	2.60	0.00	CD	VIS	334245	4175749	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
L-563A	MONO	MNO-0446	SQUARE-7	60-70	DBTG	2.60	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-487	MONO	F138	SUR	LOCUS B	BIF	2.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-55A	MONO	A15	SUR	SUR	DBTG	2.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
38b	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
57	FRESNO	FRE-1155			BIF	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
L-592A	MONO	MNO-0446	SQUARE-7	90-100	DBTG	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-29C	MONO	A10	SUR	SUR	DBTG	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-44Q	MONO	A13	SUR	SUR	DBTG	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
L-624A	MONO	MNO-0446	SQUARE-7	130-140	DBTG	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-733	MONO	F167	SUR	SUR	BIF	2.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-120B	MONO	A33	SUR	LOCUSB	DBTG	2.60	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
L-192B	MONO	MNO-0446	SQUARE-4	10-20	DBTG	2.60	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-478	MONO	F138	SUR	LOCUS A	BIF	2.60	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-120E	MONO	A33	SUR	LOCUSB	DBTG	2.60	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
L-197	MONO	MNO-0446	SQUARE-4	20-30	PRJPT	2.60	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-665C	MONO	F161	SUR	SUR	DBTG	2.60	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-55B	MONO	A15	SUR	SUR	DBTG	2.60	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
349-163A	MONO	A40	SUR	LOCUS 1	DBTG	2.60	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-163B	MONO	A40	SUR	LOCUS 1	DBTG	2.60	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
52d	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
9-467	INYO	INY-1386	K33	.5-1'	PRJPT	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
L-645B	MONO	MNO-0446	SQUARE-7	170-180	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9-949	INYO	INY-1386	X18	1-1.5'	PRJPT	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-732A	MONO	F167	SUR	SUR	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-117A	MONO	A33	SUR	LOCUS A	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-665B	MONO	F161	SUR	SUR	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
268	INYO	INY-5242/H	3A	B	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-483B	MONO	F138	SUR	LOCUS B	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-117B	MONO	A33	SUR	LOCUS A	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-117C	MONO	A33	SUR	LOCUS A	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-120C	MONO	A33	SUR	LOCUSB	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
20	FRESNO	FRE-1155	Unit 3	40-50	PRJPT	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-483A	MONO	F138	SUR	LOCUS B	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-665E	MONO	F161	SUR	SUR	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-117D	MONO	A33	SUR	LOCUS A	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-120A	MONO	A33	SUR	LOCUSB	DBTG	2.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-161A	MONO	A39	SUR	SUR	DBTG	2.60	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-55D	MONO	A15	SUR	SUR	DBTG	2.60	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
36d	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
9-182	INYO	INY-1386	U13	.5-1'	PRJPT	2.60	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
L-484	MONO	MNO-0446	SQUARE-6	100-110	DBTG	2.60	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
L-233	MONO	MNO-0446	SQUARE-4	60-70	DBTG	2.60	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-44M	MONO	A13	SUR	SUR	DBTG	2.60	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
33b	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
L-624B	MONO	MNO-0446	SQUARE-7	130-140	DBTG	2.60	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
L-369	MONO	MNO-0446	SQUARE-6	10-20	DBTG	2.60	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-44O	MONO	A13	SUR	SUR	DBTG	2.60	3.60	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-454	MONO	MNO-0446	SQUARE-6	70-80	PRJPT	2.60	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-616A	MONO	MNO-0446	SQUARE-7	120-130	DBTG	2.60	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
268	INYO	INY-5242/H	3A	H	DBTG	2.60	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-27E	MONO	A9	SUR	SUR	DBTG	2.60	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
44a	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-466A	MONO	MNO-0446	SQUARE-6	80-90	DBTG	2.60	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
L-476	MONO	MNO-0446	SQUARE-6	90-100	DBTG	2.60	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
L-556A	MONO	MNO-0446	SQUARE-7	50-60	DBTG	2.60	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
L-599B	MONO	MNO-0446	SQUARE-7	100-110	DBTG	2.60	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-665A	MONO	F161	SUR	SUR	DBTG	2.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-49	MONO	A13	SUR	SUR	BIF	2.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-161D	MONO	A39	SUR	SUR	DBTG	2.60	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
47b	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
54b	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
36c	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
74d	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
L-599A	MONO	MNO-0446	SQUARE-7	100-110	DBTG	2.60	0.00	CD	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
349-483C	MONO	F138	SUR	LOCUS B	DBTG	2.60	0.00	CD	VIS	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
268	INYO	INY-5242/H	3A	I	DBTG	2.60	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
74c	FRESNO	FRE-1155			DBTG	2.60	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
9-745	INYO	INY-1386	AA15	1.5-2'	PRJPT	2.60	4.70	CD	XRF	338647	4180281	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
6	FRESNO	FRE-1155			BIF	2.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-120D	MONO	A33	SUR	LOCUSB	DBTG	2.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
47a	FRESNO	FRE-1155			DBTG	2.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
9-1242	INYO	INY-1386	O12	1-1.5'	PRJPT	2.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
9-1226	INYO	INY-1386	M17	SURF	PRJPT	2.60		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
L-616B	MONO	MNO-0446	SQUARE-7	120-130	DBTG	2.60		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
L-752	MONO	MNO-0446	SQUARE-8	70-80	PRJPT	2.60		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
349-44L	MONO	A13	SUR	SUR	DBTG	2.70	0.00	CD	VIS	337458	4173432	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-44P	MONO	A13	SUR	SUR	DBTG	2.70	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
33a	FRESNO	FRE-1155			DBTG	2.70	0.00	CD	VIS	333133	4176046	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
54a	FRESNO	FRE-1155			DBTG	2.70	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
L-592B	MONO	MNO-0446	SQUARE-7	90-100	DBTG	2.70	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-29A	MONO	A10	SUR	SUR	DBTG	2.70	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-161B	MONO	A39	SUR	SUR	DBTG	2.70	1.40	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-44A	MONO	A13	SUR	SUR	DBTG	2.70	0.00	CD	XRF	340108	4186104	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
29b	FRESNO	FRE-1155			DBTG	2.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
52b	FRESNO	FRE-1155			BIF	2.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
52c	FRESNO	FRE-1155			DBTG	2.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
9-481	INYO	INY-1386	U20	0-.5'	PRJPT	2.70		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
61	FRESNO	FRE-1155			PRJPT	2.70		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
L-630	MONO	MNO-0446	SQUARE-7	140-150	DBTG	2.70		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
L-645A	MONO	MNO-0446	SQUARE-7	170-180	DBTG	2.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
38a	FRESNO	FRE-1155			DBTG	2.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
9-1151	INYO	INY-1386	Q12	0-.5'	PRJPT	2.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
268	INYO	INY-5242/H	3A	E	DBTG	2.70	0.00	CD-LM	XRF	313150	4184740		11	Holocene	latest-Holo	Aquandic Endoaqolls, 0 to 5 percent slopes.
349-27A	MONO	A9	SUR	SUR	DBTG	2.70	0.00	CD-SR	XRF	333482	4167240			Holocene	latest-Holo	Conway-Aquents-Watterson complex, 0 to 2 percent slopes
349-29D	MONO	A10	SUR	SUR	DBTG	2.70	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
349-122B	MONO	A34	SUR	SUR	DBTG	2.70	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
52a	FRESNO	FRE-1155			DBTG	2.70	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-122D	MONO	A34	SUR	SUR	DBTG	2.70	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
9a	FRESNO	FRE-1155			DBTG	2.70	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-27C	MONO	A9	SUR	SUR	DBTG	2.70	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-29B	MONO	A10	SUR	SUR	DBTG	2.70	0.00	CD	VIS	337217	4173913	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-05A	MONO	A3	SUR	SUR	DBTG	2.70	0.00	CD	VIS	337660	4172947	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-44K	MONO	A13	SUR	SUR	DBTG	2.70	0.00	CD	VIS	337660	4172947	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
9-298	INYO	INY-1386	V13	1-1.5'	PRJPT	2.70	0.00	CD	XRF	337166	4173030	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-44N	MONO	A13	SUR	SUR	DBTG	2.70	0.00	CD	XRF	337166	4173030	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-27D	MONO	A9	SUR	SUR	DBTG	2.70	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
266	INYO	INY-5242/H	3A		PRJPT	2.70	0.00	CD	VIS	337979	4181145	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
349-29E	MONO	A10	SUR	SUR	DBTG	2.70	0.00	CD	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
349-122C	MONO	A34	SUR	SUR	DBTG	2.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-122E	MONO	A34	SUR	SUR	DBTG	2.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-27B	MONO	A9	SUR	SUR	DBTG	2.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-46	MONO	A13	SUR	SUR	PRJPT	2.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-35	MONO	A11	SUR	SUR	-FRAG	2.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-05E	MONO	A3	SUR	SUR	DBTG	2.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
A	FRESNO	FRE-1480	0N/0E	0-10	DBTG	2.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	40-50	DBTG	2.70	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1480	0N/0E	0-10	DBTG	2.70	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1480	0N/0E	0-10	DBTG	2.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
10-1	FRESNO	FRE-1970		0-10	DBTG	2.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-1	FRESNO	FRE-1973		0-10	DBTG	2.70	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
1-1	FRESNO	FRE-1978		0-10	DBTG	2.70	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
116B	FRESNO	FRE-0815		0-10	DBTG	2.70	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
00009	FRESNO	FRE-1360		40	PRJPT	2.70	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
00324	FRESNO	FRE-1360		SURFACE	PREFORM	2.70	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
1243	FRESNO	FRE-1360		10-20	DBTG	2.70	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	20-30	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	100-110	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1480	0N/0E	10-20	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
4-4	FRESNO	FRE-1963		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
10-1	FRESNO	FRE-1967		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
10-1	FRESNO	FRE-1969		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
10-2	FRESNO	FRE-1969		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
12-2	FRESNO	FRE-1969		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5-1	FRESNO	FRE-1970		10-50	FLKTL	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
6-1	FRESNO	FRE-1970		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
8-1	FRESNO	FRE-1970		0-15	FLKTL	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
11-1	FRESNO	FRE-1970		0-10	FLKTL	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
8-2	FRESNO	FRE-1971		0-10	FLKTL	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1A	FRESNO	FRE-1974		SURFACE	BIF	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2B	FRESNO	FRE-1974		SURFACE	PRJPT	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
59-2	FRESNO	FRE-1976		0-10	DBTG	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
67-1	FRESNO	FRE-1976		0-10	FLKTL	2.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
98-2	FRESNO	FRE-1976		0-10	DBTG	2.70	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2	FRESNO	FRE-0814		0-5	PRJPT	2.70	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
74D	FRESNO	FRE-0815		10-20	DBTG	2.70	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
5139	TULARE	TUL-0103			DBTG	2.70	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5328	FRESNO	87A-31			BIF	2.70	0.00	CD	VIS	308600	4103000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
00377	FRESNO	FRE-1044		SURFACE	PREFORM	2.70	0.00	CD	VIS	308600	4103000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
330B	FRESNO	FRE-1044		30-40	DBTG	2.70	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
346J	FRESNO	FRE-1044		60-70	DBTG	2.70	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
306C	FRESNO	FRE-1044		20-30	DBTG	2.70	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
201-3	FRESNO	FRE-1044		0-10	DBTG	2.70	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
201-5	FRESNO	FRE-1044		0-10	DBTG	2.70	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
239-3	FRESNO	FRE-1044		0-10	DBTG	2.70	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
1222	FRESNO	FRE-1360		10-20	DBTG	2.70	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
56-3	FRESNO	FRE-1365		0-10	DBTG	2.70	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
60-3	FRESNO	FRE-1365		0-10	DBTG	2.70	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
62-3	FRESNO	FRE-1365		0-10	DBTG	2.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
69-1	FRESNO	FRE-1365		10-60	DBTG	2.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1440	59N/4E	0-10	DBTG	2.70	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
D	FRESNO	FRE-1447	109S/99E	0-10	DBTG	2.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
D	FRESNO	FRE-1447	109S/99E	70-80	DBTG	2.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
4-1	FRESNO	FRE-1963		0-10	DBTG	2.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
3-1	FRESNO	FRE-1964		0-10	DBTG	2.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
3-1	FRESNO	FRE-1964		0-10	DBTG	2.70	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5-1	FRESNO	FRE-1965		10-40	DBTG	2.70	8.80	CD	VIS	339861	4185791	83		pre-Quat	pre-Quat	Neuske family, 15 to 30 percent slopes.
12-1	FRESNO	FRE-1967		SURFACE	DBTG	2.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
14	FRESNO	FRE-1967		0-10	PRJPT	2.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
25-1	FRESNO	FRE-1967		10-20	DBTG	2.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
27-1	FRESNO	FRE-1967		0-10	DBTG	2.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
37-2	FRESNO	FRE-1967		0-10	DBTG	2.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
38-1	FRESNO	FRE-1967		0-10	DBTG	2.70		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
39-2	FRESNO	FRE-1967		0-10	DBTG	2.70		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
49-1	FRESNO	FRE-1967		0-10	FLKTL	2.70		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
49-2	FRESNO	FRE-1967		0-10	FLKTL	2.75		CD-LM		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
73-2	FRESNO	FRE-1967		0-10	DBTG	2.80	0.00	CD	XRF	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
11-2	FRESNO	FRE-1969		0-10	DBTG	2.80	0.00	CD	VIS	336864	4173114	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
2-1	FRESNO	FRE-1970		0-10	DBTG	2.80	0.00	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
3-1	FRESNO	FRE-1970		0-10	DBTG	2.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
6-2	FRESNO	FRE-1970		0-10	DBTG	2.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
13-1	FRESNO	FRE-1970		0-10	DBTG	2.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-2	FRESNO	FRE-1971		0-10	DBTG	2.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
16-1	FRESNO	FRE-1974		0-10	DBTG	2.80		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
16-2	FRESNO	FRE-1974		0-10	DBTG	2.80		Casa Diablo		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
28-1	FRESNO	FRE-1974		0-10	DBTG	2.80	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
25-1	FRESNO	FRE-1975		0-10	DBTG	2.80	0.00	CD	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
33-1	FRESNO	FRE-1975		0-10	DBTG	2.80	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
59-1	FRESNO	FRE-1975		0-10	DBTG	2.80	0.00	CD	VIS	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
56-1	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	XRF	337166	4173030	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
61	FRESNO	FRE-1976		SURFACE	DBTG	2.80	0.00	CD	XRF	338005	4181370	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
62-1	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
66-1	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	335900	4176812	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
70-1	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	334245	4174630	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
70-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
72-1	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
73-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
79-1	FRESNO	FRE-1976		10-40	DBTG	2.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
90-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
16-1	FRESNO	FRE-1978		0-10	DBTG	2.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
21-1	FRESNO	FRE-1980		0-10	DBTG	2.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
24-1	FRESNO	FRE-1980		0-10	DBTG	2.80	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
35-2	FRESNO	FRE-1980		0-10	DBTG	2.80	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
38-2	FRESNO	FRE-1980		10-60	FLKTL	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5336-08	FRESNO	FRE-2162			DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
139E	FRESNO	FRE-0814		10-20	DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
103	FRESNO	FRE-0815		SURFACE	PRJPT	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
105	FRESNO	FRE-0815		SURFACE	DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
60-1	FRESNO	FRE-0982		10-20	DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
74-2	FRESNO	FRE-0982		0-10	DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-3	MADERA	MAD-1222		10	DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
315E	FRESNO	FRE-1044		60-70	DBTG	2.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
427D	FRESNO	FRE-1044		90-100	DBTG	2.80	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
212-4	FRESNO	FRE-1044		10-20	DBTG	2.80	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
125B	FRESNO	FRE-1363		0-10	DBTG	2.80	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
5-3	FRESNO	FRE-1365		0-10	DBTG	2.80	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
4-2	FRESNO	FRE-1365		30-40	DBTG	2.80	0.00	CD	VIS	309300	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5-3	FRESNO	FRE-1365		0-10	DBTG	2.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
61-3	FRESNO	FRE-1365		0-10	DBTG	2.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1440	59N/4E	10-20	DBTG	2.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	20-30	DBTG	2.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
449E	FRESNO	FRE-1964		30-40	DBTG	2.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
449E	FRESNO	FRE-1964		30-40	DBTG	2.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
467F	FRESNO	FRE-1964		10-20	DBTG	2.80	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
467F	FRESNO	FRE-1964		10-20	DBTG	2.80	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
7-2	FRESNO	FRE-1964		0-10	DBTG	2.80	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
7-2	FRESNO	FRE-1964		0-10	DBTG	2.80	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
25-1	FRESNO	FRE-1965		10-50	DBTG	2.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
54-2	FRESNO	FRE-1967		0-10	DBTG	2.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
56-1	FRESNO	FRE-1967		0-10	DBTG	2.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
58-1	FRESNO	FRE-1967		0-10	DBTG	2.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
58-2	FRESNO	FRE-1967		0-10	DBTG	2.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
14-2	FRESNO	FRE-1969		0-10	DBTG	2.80	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-1	FRESNO	FRE-1970		0-15	DBTG	2.80	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
14-1	FRESNO	FRE-1970		10-56	DBTG	2.80	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
5-1	FRESNO	FRE-1971		0-10	DBTG	2.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
7-1	FRESNO	FRE-1971		0-10	DBTG	2.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
19-1	FRESNO	FRE-1971		0-10	FLKTL	2.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
36-1	FRESNO	FRE-1974		0-10	DBTG	2.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
35-2	FRESNO	FRE-1975		0-10	DBTG	2.80	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
63A	FRESNO	FRE-1975		SURFACE	BIF	2.80	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
64A	FRESNO	FRE-1975		SURFACE	PRJPT	2.80	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
65A	FRESNO	FRE-1975		SURFACE	PRJPT	2.80	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
66A	FRESNO	FRE-1975		SURFACE	PRJPT	2.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
51-1	FRESNO	FRE-1976		0-10	FLKTL	2.80	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
55-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
58-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
60-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
63-1	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
63-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
72-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	XRF	380400	4039550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
82-1	FRESNO	FRE-1976		10-56	DBTG	2.80	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
83-2	FRESNO	FRE-1976		0-10	DBTG	2.80	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-1	FRESNO	FRE-1978		0-10	DBTG	2.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
20-1A	FRESNO	FRE-1978		0-10	PRJPT	2.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1B	FRESNO	FRE-1979		SURFACE	BIF	2.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
34-2	FRESNO	FRE-1980		0-10	DBTG	2.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
11	FRESNO	FRE-0814		0-10	BIF	2.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
111	FRESNO	FRE-0814		10-20	PRJPT	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
59-1	FRESNO	FRE-0982		0-10	DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
63-1	FRESNO	FRE-0982		0-10	DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
74-3	FRESNO	FRE-0982		0-10	DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
75-2	FRESNO	FRE-0982		0-10	DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-1-1	MADERA	MAD-0223		0-20	PRJPT	2.80	10.60	CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5109	TULARE	TUL-1240			DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5109	TULARE	TUL-1240			DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5109	TULARE	TUL-1240			DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5109	TULARE	TUL-1240			DBTG	2.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5166	TULARE	TUL-1247			DBTG	2.90	0.00	CD	VIS	338683	4181012	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
5168	TULARE	TUL-1247			DBTG	2.90	0.00	CD	VIS	336700	4173457	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
00437	FRESNO	FRE-1044		20	PREFORM	2.90	0.00	CD	VIS	334002	4175049	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1287	FRESNO	FRE-1360		10-20	DBTG	2.90	0.00	CD	VIS	332786	4174907	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
00300	FRESNO	FRE-1360		10	PRJPT	2.90	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
00327	FRESNO	FRE-1360		10	PRJPT	2.90	0.00	CD	XRF	340108	4186104	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
259D	FRESNO	FRE-1360		0-10	DBTG	2.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-2	FRESNO	FRE-1365		20-30	DBTG	2.90		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
40	FRESNO	FRE-1964		0-10	BIF	2.90		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
40	FRESNO	FRE-1964		0-10	BIF	2.90		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
32-1	FRESNO	FRE-1967		0-10	DBTG	2.90	0.00	CD	XRF	338563	4175400	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
50-2	FRESNO	FRE-1967		0-10	DBTG	2.90	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
59-2	FRESNO	FRE-1967		0-10	DBTG	2.90	0.00	CD	VIS	334245	4175749	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
60	FRESNO	FRE-1967		SURFACE	BIF	2.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9-2	FRESNO	FRE-1971		0-10	DBTG	2.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
18-1	FRESNO	FRE-1971		0-10	FLKTL	2.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
21-1	FRESNO	FRE-1974		0-10	DBTG	2.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
22-2	FRESNO	FRE-1974		0-10	DBTG	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
39-1A	FRESNO	FRE-1974		0-10	PRJPT	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
40-3	FRESNO	FRE-1974		0-10	DBTG	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
41-2	FRESNO	FRE-1974		0-10	DBTG	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
44-1	FRESNO	FRE-1975		0-10	DBTG	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
4A	FRESNO	FRE-1976		SURFACE	BIF	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
18-1	FRESNO	FRE-1976		0-10	FLKTL	2.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
55-1	FRESNO	FRE-1976		0-10	DBTG	2.90	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
58-1	FRESNO	FRE-1976		0-10	DBTG	2.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
65-1	FRESNO	FRE-1976		0-10	DBTG	2.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
78-1	FRESNO	FRE-1976		0-10	DBTG	2.90	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
98-1	FRESNO	FRE-1976		0-10	DBTG	2.90	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
3-1	FRESNO	FRE-1978		10-35	DBTG	2.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
17-2	FRESNO	FRE-1978		0-10	DBTG	2.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1A	FRESNO	FRE-1979		SURFACE	BIF	2.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
20-1	FRESNO	FRE-1980		10-20	DBTG	2.90	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
21-2	FRESNO	FRE-1980		0-10	DBTG	2.90	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
22-1	FRESNO	FRE-1980		0-10	DBTG	2.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
153A	FRESNO	FRE-0814		10-20	DBTG	2.90	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
50-1	FRESNO	FRE-0982		0-10	DBTG	2.90	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
55-3	FRESNO	FRE-0982		0-10	DBTG	2.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
58-1	FRESNO	FRE-0982		0-10	DBTG	2.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-2-1	MADERA	MAD-0223		20-40	PRJPT	2.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
330E	FRESNO	FRE-1044		30-40	DBTG	2.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
330F	FRESNO	FRE-1044		30-40	DBTG	2.90	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
00503	FRESNO	FRE-1360		28	PRJPT	2.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
239D	FRESNO	FRE-1360		0-10	DBTG	2.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
51-1A	FRESNO	FRE-1365		0-10	PRJPT	2.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
00367	FRESNO	FRE-1964		10	PRJPT	2.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
00367	FRESNO	FRE-1964		10	PRJPT	2.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
16-1	FRESNO	FRE-1967		0-10	DBTG	2.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
28-1	FRESNO	FRE-1967		0-10	DBTG	2.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
67-2	FRESNO	FRE-1967		0-10	DBTG	2.90	0.00	CD	XRF	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
15-1	FRESNO	FRE-1974		0-10	DBTG	2.90	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
29-1	FRESNO	FRE-1975		0-10	FLKTL	2.90	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
37-2	FRESNO	FRE-1975		0-10	DBTG	2.90	0.00	CD	XRF	339137	4184373	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
4C	FRESNO	FRE-1976		SURFACE	BIF	2.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
52-1	FRESNO	FRE-1976		30-40	FLKTL	2.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
19-1	FRESNO	FRE-1979		0-10	DBTG	2.90		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
16-1	FRESNO	FRE-1980		0-10	DBTG	2.90	8.40	CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5333	FRESNO	FRE-2162			BIF	2.90		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
40A	FRESNO	FRE-0815		10-20	DBTG	3.00	0.00	CD	VIS	334725	4172188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
5-4-3	MADERA	MAD-1223		10-20	DBTG	3.00	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2-2-1	MADERA	MAD-0223		20-40	PRJPT	3.00	0.00	CD	VIS	332856	4175923	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
5309	TULARE	TUL-1263			BIF	3.00	0.00	CD	VIS	332856	4175923	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1352-24-2390	TULARE	TUL-0024		0-12"	PRJPT	3.00	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
315B	FRESNO	FRE-1044		60-70	DBTG	3.00	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1281	FRESNO	FRE-1360		60-70	DBTG	3.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00407	FRESNO	FRE-1360		10	PRJPT	3.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
214E	FRESNO	FRE-1360		0-10	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
242C	FRESNO	FRE-1360		0-10	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
273A	FRESNO	FRE-1360		0-10	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
287A	FRESNO	FRE-1360		0-10	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
51-1B	FRESNO	FRE-1365		0-10	PRJPT	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
66-2	FRESNO	FRE-1365		0-10	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
A	FRESNO	FRE-1440	59N/4E	0-10	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
D	FRESNO	FRE-1440	59N/4E	10-20	DBTG	3.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
B	FRESNO	FRE-1440	59N/4E	20-30	DBTG	3.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
E	FRESNO	FRE-1440	59N/4E	30-40	DBTG	3.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
C	FRESNO	FRE-1480	0N/0E	20-30	DBTG	3.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
A	FRESNO	FRE-1480	0N/0E	30-40	DBTG	3.00	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
C	FRESNO	FRE-1480	0N/0E	30-40	DBTG	3.00	0.00	CD-SR	XRF	333482	4167240			Holocene	latest-Holo	Conway-Aquents-Watterson complex, 0 to 2 percent slopes
12-1	FRESNO	FRE-1972		0-10	DBTG	3.00	0.00	CD	VIS	337166	4173030	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
10-1	FRESNO	FRE-1974		0-10	DBTG	3.00	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
37-1	FRESNO	FRE-1974		0-10	FLKTL	3.00	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
4B	FRESNO	FRE-1976		SURFACE	BIF	3.00	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
50-1	FRESNO	FRE-1976		0-10	DBTG	3.00	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
53-1	FRESNO	FRE-1976		0-10	DBTG	3.00	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
13-1	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	VIS	337243	4174655	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
36-1	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1601	FRESNO	FRE-0064	Unit 5	20-30	FLKTL	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
142D	FRESNO	FRE-0814		40-50	DBTG	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-1	FRESNO	FRE-0982		0-10	DBTG	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
67-2	FRESNO	FRE-0982		0-5	DBTG	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
L1-18-1	MADERA	MAD-0223		43.5	PRJPT	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-026-d	MONO	MNO-2439	98-1	10-20	DBTG	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5262-03	TULARE	TUL-1253			DBTG	3.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-26	MNO	MNO-0574	UNIT D	020-030	DEB	3.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5329-03	FRESNO	87A-31			DBTG	3.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00004	FRESNO	FRE-1044		10	PRJPT	3.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
330G	FRESNO	FRE-1044		30-40	DBTG	3.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
330I	FRESNO	FRE-1044		30-40	DBTG	3.00	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
346B	FRESNO	FRE-1044		60-70	DBTG	3.00	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
218-3	FRESNO	FRE-1044		10-20	DBTG	3.00	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
245-1	FRESNO	FRE-1044		0-10	DBTG	3.00	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
00408	FRESNO	FRE-1360		10	PRJPT	3.00	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
328B	FRESNO	FRE-1360		0-10	DBTG	3.00	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	6-0	DBTG	3.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
B	FRESNO	FRE-1480	0N/0E	20-30	DBTG	3.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-1	FRESNO	FRE-1963		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00258	FRESNO	FRE-1964		10	BIF	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00258	FRESNO	FRE-1964		10	BIF	3.00	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
455A	FRESNO	FRE-1964		50-60	DBTG	3.00	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
455A	FRESNO	FRE-1964		50-60	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
467D	FRESNO	FRE-1964		10-20	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
467D	FRESNO	FRE-1964		10-20	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
54-1	FRESNO	FRE-1967		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
41-1	FRESNO	FRE-1975		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
49-2	FRESNO	FRE-1975		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3B	FRESNO	FRE-1976		SURFACE	BIF	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
93-1	FRESNO	FRE-1976		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
16-2	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
17-1	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
19-1	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
22-3	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	VIS	308600	4103000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
33-1	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
34-1	FRESNO	FRE-1980		0-10	DBTG	3.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
158A	FRESNO	FRE-0814		0-10	DBTG	3.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
158C	FRESNO	FRE-0814		0-10	DBTG	3.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
31	FRESNO	FRE-0815		10-20	BIF	3.00	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
80A	FRESNO	FRE-0815		20-30	DBTG	3.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
116D	FRESNO	FRE-0815		0-10	DBTG	3.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
252-1	FRESNO	FRE-0982		0-10	DBTG	3.00	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-29	MADERA	MAD-1222		30-40	DBTG	3.00	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-18-8	MADERA	MAD-0397		30-40	DBTG	3.00	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2439-025-b	MONO	MNO-2439	98-1	0-10	DBTG	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-515E	MONO	F144	SUR	LOCUS A	DBTG	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-61	MNO	MNO-0574	UNIT D	050-060	DEB	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-79	MNO	MNO-0574	UNIT D	060-070	DEB	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
349-326C	MONO	A83	SUR	SUR	DBTG	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
330D	FRESNO	FRE-1044		30-40	DBTG	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
306D	FRESNO	FRE-1044		20-30	DBTG	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
201-4	FRESNO	FRE-1044		0-10	DBTG	3.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
1323	FRESNO	FRE-1360		10-20	DBTG	3.00	0.00	CD	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
00427	FRESNO	FRE-1360		30	PRJPT	3.00	0.00	CD	XRF	377680	4057900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00496	FRESNO	FRE-1360		10	BIF	3.00	0.00	CD	VIS	338327	4182556	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
344A	FRESNO	FRE-1360		0-10	DBTG	3.00	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
118B	FRESNO	FRE-1363		0-10	DBTG	3.00	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
67-1B	FRESNO	FRE-1365		0-10	FLKTL	3.00	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
77-1	FRESNO	FRE-1365		0-10	DBTG	3.00	0.00	CD	VIS	338529	4181901	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
442D	FRESNO	FRE-1964		10-20	DBTG	3.00	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
442D	FRESNO	FRE-1964		10-20	DBTG	3.00	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
474B	FRESNO	FRE-1964		40-50	DBTG	3.00	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
474B	FRESNO	FRE-1964		40-50	DBTG	3.00	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
72	FRESNO	FRE-1967		10-20	PRJPT	3.00	0.00	CD	VIS	339861	4185791	83		pre-Quat	pre-Quat	Neuske family, 15 to 30 percent slopes.
25-1	FRESNO	FRE-1974		0-10	DBTG	3.00	0.00	CD	VIS	339861	4185791	83		pre-Quat	pre-Quat	Neuske family, 15 to 30 percent slopes.
30-1	FRESNO	FRE-1975		0-10	DBTG	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
50-1	FRESNO	FRE-1975		0-10	FLKTL	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
3C	FRESNO	FRE-1976		SURFACE	BIF	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
88-1	FRESNO	FRE-1976		0-10	DBTG	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
94-1	FRESNO	FRE-1976		0-10	DBTG	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
15-1	FRESNO	FRE-1980		0-10	DBTG	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
18-1	FRESNO	FRE-1980		0-10	DBTG	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
28-1	FRESNO	FRE-1980		0-10	FLKTL	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
38-1	FRESNO	FRE-1980		10-60	FLKTL	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5332	FRESNO	FRE-2162			BIF	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5336-03	FRESNO	FRE-2162			DBTG	3.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
33A	FRESNO	FRE-0814		0-10	DBTG	3.00		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
74C	FRESNO	FRE-0815		10-20	DBTG	3.00		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
50-2	FRESNO	FRE-0982		0-10	DBTG	3.00		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-18	MADERA	MAD-0397		30-40	DBTG	3.00		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5267	TULARE	TUL-1253			DBTG	3.00		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5329-11	FRESNO	87A-31			DBTG	3.00	0.00	CD-LM	XRF	365170	4184260		11	pre-Quat	pre-Quat	Lithic Xeric Torriorthents-Buscones complex, 15 to 50 percent slopes
427C	FRESNO	FRE-1044		90-100	DBTG	3.10	0.00	CD-SR	XRF	385480	4112690		11	Holocene	late-Holo	Goodale-Cartago complex, 5 to 15 percent slopes
245-3	FRESNO	FRE-1044		0-10	DBTG	3.10	0.00	CD	VIS	334729	4174822	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
348C	FRESNO	FRE-1360		0-10	DBTG	3.10	0.00	CD	VIS	333732	4175542	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
348D	FRESNO	FRE-1360		0-10	DBTG	3.10	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
56C	FRESNO	FRE-1363		0-10	DBTG	3.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
67-1A	FRESNO	FRE-1365		0-10	FLKTL	3.10	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
D	FRESNO	FRE-1440	59N/4E	20-30	DBTG	3.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
C	FRESNO	FRE-1447	109S/99E	0-10	DBTG	3.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
D	FRESNO	FRE-1447	109S/99E	20-30	DBTG	3.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
A	FRESNO	FRE-1480	0N/0E	10-20	DBTG	3.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
21-2	FRESNO	FRE-1964		0-10	DBTG	3.10		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
21-2	FRESNO	FRE-1964		0-10	DBTG	3.10		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
4-1	FRESNO	FRE-1978		0-10	DBTG	3.10		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
62	FRESNO	FRE-0814		0-10	PRJPT	3.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
154D	FRESNO	FRE-0814		20-30	DBTG	3.10	4.40	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
2-35	MADERA	MAD-1222		0-10	PRJPT	3.10	0.00	CD	VIS	337098	4173904	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2440-007-e	MONO	MNO-2440	CU-6	40-45	DBTG	3.10	0.00	CD	XRF	337564	4172513	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2440-010-c	MONO	MNO-2440	CU-7	5-22	DBTG	3.10	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
5176	TULARE	TUL-1248			DBTG	3.10	0.00	CD	VIS	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
349-521B	MONO	F144	SUR	LOCUS B	DBTG	3.10	0.00	CD	VIS	334277	4176214	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-620	MONO	F156	SUR	SUR	BIF	3.10	0.00	CD	VIS	333920	4176123	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-10B	MONO	A5	SUR	SUR	DBTG	3.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-292A	MONO	A69	SUR	LOCUS A	DBTG	3.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00382	FRESNO	FRE-1044		30	PRJPT	3.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
306E	FRESNO	FRE-1044		20-30	DBTG	3.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
201-2	FRESNO	FRE-1044		0-10	DBTG	3.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00414	FRESNO	FRE-1360		20	PRJPT	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
242E	FRESNO	FRE-1360		0-10	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
22-1	FRESNO	FRE-1362		0-10	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
4-1	FRESNO	FRE-1365		30-40	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
C	FRESNO	FRE-1440	59N/4E	20-30	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
D	FRESNO	FRE-1447	109S/99E	60-70	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
388E	FRESNO	FRE-1964		80-90	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
388E	FRESNO	FRE-1964		80-90	DBTG	3.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
458B	FRESNO	FRE-1964		70-80	DBTG	3.10	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
458B	FRESNO	FRE-1964		70-80	DBTG	3.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
458C	FRESNO	FRE-1964		70-80	DBTG	3.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
458C	FRESNO	FRE-1964		70-80	DBTG	3.10	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
408C	FRESNO	FRE-1964		10-20	DBTG	3.10	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
408C	FRESNO	FRE-1964		10-20	DBTG	3.10	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
32-1	FRESNO	FRE-1975		0-10	DBTG	3.10	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
56-1	FRESNO	FRE-1975		0-10	DBTG	3.10	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
91	FRESNO	FRE-1976		0-10	DBTG	3.10	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
138	FRESNO	FRE-0814		10-20	BIF	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
154E	FRESNO	FRE-0814		20-30	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
20	FRESNO	FRE-0815		0-10	BIF	3.10	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
42	FRESNO	FRE-0815		20-30	DBTG	3.10	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
66-1	FRESNO	FRE-0982		0-10	DBTG	3.10	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-002-v	MONO	MNO-2439	SC	SUR	DBTG	3.10	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-031	MONO	MNO-2439	SC	SUR	BIF	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-002-c	MONO	MNO-2439	SC	SUR	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-009-d	MONO	MNO-2440	CU-7	0-5	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-p	MONO	MNO-2440	CU-6	23-25	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
EU1	TULARE	TUL-1227		40-50	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1353-24-2450	TULARE	TUL-0024		0-12"	PRJPT	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-525E	MONO	F144	SUR	LOCUS C	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-571	MONO	F149	SUR	SUR	PRJPT	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-326B	MONO	A83	SUR	SUR	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-326E	MONO	A83	SUR	SUR	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
344B	FRESNO	FRE-1360		0-10	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
25-1	FRESNO	FRE-1363		30-40	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1-3	FRESNO	FRE-1365		0-10	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9-1	FRESNO	FRE-1365		30-40	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1440	59N/4E	60-70	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	10-20	DBTG	3.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	30-40	DBTG	3.10	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	50-60	DBTG	3.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	50-60	DBTG	3.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	70-80	DBTG	3.10	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
B	FRESNO	FRE-1480	0N/0E	40-50	DBTG	3.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
461E	FRESNO	FRE-1964		90-100	DBTG	3.10	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
461E	FRESNO	FRE-1964		90-100	DBTG	3.10	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
57-1	FRESNO	FRE-1967		0-10	FLKTL	3.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
69-2	FRESNO	FRE-1967		0-10	DBTG	3.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
71-1	FRESNO	FRE-1967		0-10	DBTG	3.10	5.80	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
35-1	FRESNO	FRE-1975		0-10	DBTG	3.10	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
37-1	FRESNO	FRE-1975		0-10	DBTG	3.10	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
46-1	FRESNO	FRE-1975		0-10	DBTG	3.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
87-1	FRESNO	FRE-1976		10-50	DBTG	3.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
90-1	FRESNO	FRE-1976		0-10	DBTG	3.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
52D	FRESNO	FRE-0814		SURFACE	DBTG	3.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
142E	FRESNO	FRE-0814		40-50	DBTG	3.10	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
144	FRESNO	FRE-0814		20-30	BIF	3.10	0.00	CD	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
45A	FRESNO	FRE-0815		40-50	DBTG	3.10	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
50	FRESNO	FRE-0815		20-30	BIF	3.10	0.00	CD	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
68	FRESNO	FRE-0815		10-20	PRJPT	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
92	FRESNO	FRE-0815		10-20	BIF	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
106A	FRESNO	FRE-0815		0-10	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
106E	FRESNO	FRE-0815		0-10	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
116A	FRESNO	FRE-0815		0-10	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-29-2	MADERA	MAD-1222		30-40	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-20-2	MADERA	MAD-1222		10-20	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
3-8	MADERA	MAD-0397		20-30	PRJPT	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2439-002-e	MONO	MNO-2439	SC	SUR	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-002-d	MONO	MNO-2440	CU-6	5-23	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-002-e	MONO	MNO-2440	CU-6	5-23	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-003-m	MONO	MNO-2440	CU-6	23-25	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-003-n	MONO	MNO-2440	CU-6	23-25	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-003-l	MONO	MNO-2440	CU-6	23-25	DBTG	3.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-004-f	MONO	MNO-2440	CU-6	25-30	DBTG	3.10		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-004-b	MONO	MNO-2440	CU-6	25-30	DBTG	3.10		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-005-d	MONO	MNO-2440	CU-6	30-35	DBTG	3.10		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
EU4	TULARE	TUL-1227		10-20	DBTG	3.10		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-619	MONO	F156	SUR	SUR	BIF	3.20	0.00	CD	VIS	336845	4174045	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-815	MONO	IA10	SUR	SUR	PRJPT	3.20	0.00	CD	VIS	337188	4173525	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-444C	MONO	W132	SUR	SUR	DBTG	3.20	0.00	CD	VIS	337188	4173525	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
574-SC004	MNO	MNO-0574	SURFACE	SURFACE	PPT	3.20	0.00	CD	VIS	336803	4173368	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UE017	MNO	MNO-0574	UNIT E	040-050	BIF	3.20	0.00	CD	VIS	334729	4174822	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1328	FRESNO	FRE-1360		40-50	DBTG	3.20	0.00	CD	VIS	332338	4175465	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
00419	FRESNO	FRE-1360		20	PRJPT	3.20	0.00	CD	VIS	333292	4175497	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
242B	FRESNO	FRE-1360		0-10	DBTG	3.20	0.00	CD	VIS	333732	4175542	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
344C	FRESNO	FRE-1360		0-10	DBTG	3.20	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
D	FRESNO	FRE-1447	109S/99E	50-60	DBTG	3.20	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
C	FRESNO	FRE-1447	109S/99E	70-80	DBTG	3.20	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
E	FRESNO	FRE-1447	109S/99E	80-90	DBTG	3.20	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
C	FRESNO	FRE-1447	109S/99E	100-110	DBTG	3.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
A	FRESNO	FRE-1480	0N/0E	40-50	DBTG	3.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
442E	FRESNO	FRE-1964		10-20	DBTG	3.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
442E	FRESNO	FRE-1964		10-20	DBTG	3.20		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
455B	FRESNO	FRE-1964		50-60	DBTG	3.20		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
455B	FRESNO	FRE-1964		50-60	DBTG	3.20		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
458E	FRESNO	FRE-1964		70-80	DBTG	3.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
458E	FRESNO	FRE-1964		70-80	DBTG	3.20	0.00	CD	VIS	337169	4173290	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
474A	FRESNO	FRE-1964		40-50	DBTG	3.20	0.00	CD	XRF	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
474A	FRESNO	FRE-1964		40-50	DBTG	3.20	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
424E	FRESNO	FRE-1964		80-90	DBTG	3.20	0.00	CD	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
424E	FRESNO	FRE-1964		80-90	DBTG	3.20	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
433D	FRESNO	FRE-1964		110-120	DBTG	3.20	0.00	CD	VIS	337169	4174848	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
433D	FRESNO	FRE-1964		110-120	DBTG	3.20	0.00	CD	VIS	334245	4174630	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1-1	FRESNO	FRE-1965		0-10	DBTG	3.20	0.00	CD	VIS	334245	4175749	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
39-1A	FRESNO	FRE-1965		0-10	BIF	3.20	0.00	CD	VIS	334245	4175749	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
39-1	FRESNO	FRE-1967		0-10	DBTG	3.20	0.00	CD	VIS	334277	4176214	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
41-1	FRESNO	FRE-1967		0-10	DBTG	3.20	0.00	CD	VIS	334277	4176214	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
56-2	FRESNO	FRE-1967		0-10	DBTG	3.20	0.00	CD	VIS	334277	4176214	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
67-1	FRESNO	FRE-1967		0-10	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
40-1	FRESNO	FRE-1974		0-10	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
38-2	FRESNO	FRE-1975		0-10	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
96-1	FRESNO	FRE-1976		0-10	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
14-1	FRESNO	FRE-1979		0-10	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
24-2	FRESNO	FRE-1980		0-10	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52C	FRESNO	FRE-0814		SURFACE	DBTG	3.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
77	FRESNO	FRE-0814		10-20	PRJPT	3.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
140D	FRESNO	FRE-0814		20-30	DBTG	3.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
152A	FRESNO	FRE-0814		0-10	DBTG	3.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
154B	FRESNO	FRE-0814		20-30	DBTG	3.20	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
158B	FRESNO	FRE-0814		0-10	DBTG	3.20	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
45B	FRESNO	FRE-0815		40-50	DBTG	3.20	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2-29-9	MADERA	MAD-1222		30-40	DBTG	3.20	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
7-20-9	MADERA	MAD-1222		10-20	DBTG	3.20	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-26	MADERA	MAD-1222		30-40	DBTG	3.20	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-13	MADERA	MAD-0397		30-40	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-13-4	MADERA	MAD-0397		30-40	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-002-cc	MONO	MNO-2439	SC	SUR	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-c	MONO	MNO-2440	CU-6	23-25	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-002-g	MONO	MNO-2440	CU-6	5-23	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-002-b	MONO	MNO-2440	CU-6	5-23	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-j	MONO	MNO-2440	CU-6	23-25	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-g	MONO	MNO-2440	CU-6	23-25	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-d	MONO	MNO-2440	CU-6	23-25	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-r	MONO	MNO-2440	CU-6	0-5	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-e	MONO	MNO-2440	CU-6	23-25	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-o	MONO	MNO-2440	CU-6	23-25	DBTG	3.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-005-k	MONO	MNO-2440	CU-6	30-35	DBTG	3.20	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
EU4	TULARE	TUL-1227		10-20	DBTG	3.20	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
1353-24-943	TULARE	TUL-0024		6-12"	PRJPT	3.20	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-608B	MONO	F155	SUR	SUR	DBTG	3.20	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-704	MONO	F164	SUR	UNIT	PRJPT	3.20	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-719	MONO	F165	SUR	SUR	DBTG	3.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-292B	MONO	A69	SUR	LOCUS A	DBTG	3.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
346H	FRESNO	FRE-1044		60-70	DBTG	3.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
346I	FRESNO	FRE-1044		60-70	DBTG	3.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
315A	FRESNO	FRE-1044		60-70	DBTG	3.20	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
427A	FRESNO	FRE-1044		90-100	DBTG	3.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
411G	FRESNO	FRE-1044		60-70	DBTG	3.20	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1250	FRESNO	FRE-1360		30-40	DBTG	3.20	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
00280	FRESNO	FRE-1360		10	PRJPT	3.20	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
00444	FRESNO	FRE-1360		60	BIF	3.20	5.20	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00551	FRESNO	FRE-1360		120	PREFORM	3.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
228E	FRESNO	FRE-1360		0-10	DBTG	3.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
233A	FRESNO	FRE-1360		0-10	DBTG	3.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
278A	FRESNO	FRE-1360		0-10	DBTG	3.20	0.00	CD	XRF	339137	4184373	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
287C	FRESNO	FRE-1360		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
E	FRESNO	FRE-1447	109S/99E	20-30	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
358B	FRESNO	FRE-1964		120-130	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
358B	FRESNO	FRE-1964		120-130	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
461F	FRESNO	FRE-1964		90-100	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
461F	FRESNO	FRE-1964		90-100	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
467A	FRESNO	FRE-1964		10-20	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
467A	FRESNO	FRE-1964		10-20	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
37-1	FRESNO	FRE-1965		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
44-1	FRESNO	FRE-1967		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
65-2	FRESNO	FRE-1967		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
75-1	FRESNO	FRE-1967		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
12-2	FRESNO	FRE-1971		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
83-1	FRESNO	FRE-1976		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
92-1	FRESNO	FRE-1976		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
22-2	FRESNO	FRE-1978		0-10	DBTG	3.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5336-09	FRESNO	FRE-2162			DBTG	3.20		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
13	FRESNO	FRE-0814		10-20	BIF	3.20		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
37A	FRESNO	FRE-0814		10-20	DBTG	3.20		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
43	FRESNO	FRE-0814		0-10	FLKTL	3.30	0.00	CD	VIS	336373	4173332	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
86	FRESNO	FRE-0814		0-20	PRJPT	3.30	0.00	CD	XRF	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
152B	FRESNO	FRE-0814		0-10	DBTG	3.30	0.00	CD	VIS	334725	4172188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
76-1	FRESNO	FRE-0982		0-10	FLKTL	3.30	0.00	CD	VIS	333590	4175444	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-29-3	MADERA	MAD-1222		30-40	DBTG	3.30	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
7-4-9	MADERA	MAD-1222		15	DBTG	3.30	0.00	CD	Vis	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2-31	MADERA	MAD-1222		30-40	CORE	3.30	0.00	CD	XRF	340087	4183720	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
2-13-3	MADERA	MAD-0223		70-80	DBTG	3.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
3-13-1	MADERA	MAD-0397		30-40	DBTG	3.30		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
3-13-3	MADERA	MAD-0397		30-40	DBTG	3.30		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
2440-004-m	MONO	MNO-2440	CU-6	25-30	DBTG	3.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-002-f	MONO	MNO-2440	CU-6	5-23	DBTG	3.30	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
2440-001-i	MONO	MNO-2440	CU-6	0-5	DBTG	3.30	0.00	CD	VIS	337169	4173290	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2440-002-c	MONO	MNO-2440	CU-6	5-23	DBTG	3.30	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
2440-009-c	MONO	MNO-2440	CU-7	0-5	DBTG	3.30	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
2440-006-b	MONO	MNO-2440	CU-6	35-40	DBTG	3.30	0.00	CD	XRF	337979	4181145	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
2440-003-f	MONO	MNO-2440	CU-6	23-25	DBTG	3.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2440-006-c	MONO	MNO-2440	CU-6	35-40	DBTG	3.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-004-g	MONO	MNO-2440	CU-6	25-30	DBTG	3.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-010-d	MONO	MNO-2440	CU-7	5-22	DBTG	3.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-010-b	MONO	MNO-2440	CU-7	5-22	DBTG	3.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-010-a	MONO	MNO-2440	CU-7	5-22	DBTG	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-525B	MONO	F144	SUR	LOCUS C	DBTG	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-622	MONO	F156	SUR	SUR	BIF	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-62	MNO	MNO-0574	UNIT D	050-060	DEB	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00425	FRESNO	FRE-1044		100	BIF	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
239-1	FRESNO	FRE-1044		0-10	DBTG	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
245-5	FRESNO	FRE-1044		0-10	DBTG	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1264	FRESNO	FRE-1360		10-20	DBTG	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00428	FRESNO	FRE-1360		30	PRJPT	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1224	FRESNO	FRE-1360		10-20	DBTG	3.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
322B	FRESNO	FRE-1360		0-10	DBTG	3.30	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	6-0	DBTG	3.30	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	40-50	DBTG	3.30	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	70-80	DBTG	3.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1955-40	FRESNO	FRE-1671	62N/21E	60-70	DBTG	3.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
358D	FRESNO	FRE-1964		120-130	DBTG	3.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
358D	FRESNO	FRE-1964		120-130	DBTG	3.30	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
474E	FRESNO	FRE-1964		40-50	DBTG	3.30	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
474E	FRESNO	FRE-1964		40-50	DBTG	3.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
413C	FRESNO	FRE-1964		40-50	DBTG	3.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
413C	FRESNO	FRE-1964		40-50	DBTG	3.30	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
424D	FRESNO	FRE-1964		80-90	DBTG	3.30	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
424D	FRESNO	FRE-1964		80-90	DBTG	3.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
30-1	FRESNO	FRE-1965		0-10	DBTG	3.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
19-1	FRESNO	FRE-1967		10-50	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
23-1	FRESNO	FRE-1967		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
30-1	FRESNO	FRE-1967		10-50	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
41-2	FRESNO	FRE-1967		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
48-1	FRESNO	FRE-1967		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
50-1	FRESNO	FRE-1967		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
21-2	FRESNO	FRE-1974		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
26-1	FRESNO	FRE-1975		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
27-1	FRESNO	FRE-1975		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
44-2	FRESNO	FRE-1975		0-10	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2	FRESNO	FRE-1976		SURFACE	FLKTL	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
37-1	FRESNO	FRE-1980		10-60	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5336-07	FRESNO	FRE-2162			DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
39	FRESNO	FRE-0814		10-20	PRJPT	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
40B	FRESNO	FRE-0815		10-20	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
43C	FRESNO	FRE-0815		30-40	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
80E	FRESNO	FRE-0815		20-30	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-22-3	MADERA	MAD-1222		20-30	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5-7-4	MADERA	MAD-1223		30-40	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-6-8	MADERA	MAD-0397		10-20	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-a	MONO	MNO-2440	CU-6	23-25	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-k	MONO	MNO-2440	CU-6	23-25	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-004-i	MONO	MNO-2440	CU-6	25-30	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-t	MONO	MNO-2440	CU-6	23-25	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2440-003-s	MONO	MNO-2440	CU-6	23-25	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-004-l	MONO	MNO-2440	CU-6	25-30	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-010-h	MONO	MNO-2440	CU-7	5-22	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-009-j	MONO	MNO-2440	CU-7	0-5	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5236-10	TULARE	TUL-1249			DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1353-24-392B	TULARE	TUL-0024		0-6"	PRJPT	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-599C	MONO	F152	SUR	SUR	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-706	MONO	F165	SUR	SUR	PRJPT	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-141	MNO	MNO-0574	UNIT D	120-130	DEB	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA010	MNO	MNO-0574	UNIT A	50	RETOUCH	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
362F	FRESNO	FRE-1044		80-90	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
427B	FRESNO	FRE-1044		90-100	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
390D	FRESNO	FRE-1044		30-40	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
411D	FRESNO	FRE-1044		60-70	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
411E	FRESNO	FRE-1044		60-70	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1255	FRESNO	FRE-1360		40-50	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1329	FRESNO	FRE-1360		40-50	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1242	FRESNO	FRE-1360		10-20	DBTG	3.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
322E	FRESNO	FRE-1360		0-10	DBTG	3.30	5.50	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
17-1	FRESNO	FRE-1362		10-20	DBTG	3.30	5.50	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
60A	FRESNO	FRE-1363		0-10	DBTG	3.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
2-3	FRESNO	FRE-1365		10-20	DBTG	3.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
58-1	FRESNO	FRE-1365		0-10	DBTG	3.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
B	FRESNO	FRE-1440	59N/4E	10-20	DBTG	3.30	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
D	FRESNO	FRE-1440	59N/4E	30-40	DBTG	3.30	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	6-0	DBTG	3.30	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	30-40	DBTG	3.30	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	50-60	DBTG	3.30	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
D	FRESNO	FRE-1447	109S/99E	80-90	DBTG	3.30	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
00396	FRESNO	FRE-1964		40	BIF	3.30	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
00396	FRESNO	FRE-1964		40	BIF	3.30	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
442A	FRESNO	FRE-1964		10-20	DBTG	3.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
442A	FRESNO	FRE-1964		10-20	DBTG	3.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
455D	FRESNO	FRE-1964		50-60	DBTG	3.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
455D	FRESNO	FRE-1964		50-60	DBTG	3.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
455E	FRESNO	FRE-1964		50-60	DBTG	3.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
455E	FRESNO	FRE-1964		50-60	DBTG	3.30	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
458F	FRESNO	FRE-1964		70-80	DBTG	3.30	3.80	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
458F	FRESNO	FRE-1964		70-80	DBTG	3.30	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
461A	FRESNO	FRE-1964		90-100	DBTG	3.30	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
461A	FRESNO	FRE-1964		90-100	DBTG	3.30	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
467E	FRESNO	FRE-1964		10-20	DBTG	3.30	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
467E	FRESNO	FRE-1964		10-20	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
39-1B	FRESNO	FRE-1965		0-10	BIF	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
26-1	FRESNO	FRE-1967		0-10	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
34	FRESNO	FRE-1967		0-10	BIF	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
64-1	FRESNO	FRE-1967		0-10	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
12-1	FRESNO	FRE-1969		0-10	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
9-1	FRESNO	FRE-1971		0-10	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
24-1	FRESNO	FRE-1974		10-45	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
42-1	FRESNO	FRE-1975		0-10	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
7B	FRESNO	FRE-1976		SURFACE	BIF	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
26-1	FRESNO	FRE-1978		0-10	DBTG	3.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
27-1	FRESNO	FRE-1978		10-35	DBTG	3.30	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
23-1A	FRESNO	FRE-1980		0-10	PRJPT	3.30	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
29-1	FRESNO	FRE-1980		10-50	DBTG	3.30	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
153E	FRESNO	FRE-0814		10-20	DBTG	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
43D	FRESNO	FRE-0815		30-40	DBTG	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-23-6	MADERA	MAD-1222		20-30	DBTG	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-20-3	MADERA	MAD-1222		10-20	DBTG	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-20-8	MADERA	MAD-1222		10-20	DBTG	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-1-1	MADERA	MAD-0223		0-20	PRJPT	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-4-1	MADERA	MAD-0223		76	PRJPT	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-24	MADERA	MAD-0397		50-60	DBTG	3.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
3-6-9	MADERA	MAD-0397		10-20	DBTG	3.40	0.00	CD	VIS	336700	4173457	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
6-12	MADERA	MAD-0397		10-20	PRJPT	3.40	0.00	CD	VIS	337458	4173432	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2440-002-i	MONO	MNO-2440	CU-6	5-23	DBTG	3.40	0.00	CD	VIS	334127	4172057	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
2440-002-a	MONO	MNO-2440	CU-6	5-23	DBTG	3.40	0.00	CD	VIS	333590	4175444	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2440-009-a	MONO	MNO-2440	CU-7	0-5	DBTG	3.40	0.00	CD	VIS	333453	4175164	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2440-004-h	MONO	MNO-2440	CU-6	25-30	DBTG	3.40	0.00	CD	VIS	332786	4174907	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2440-004-d	MONO	MNO-2440	CU-6	25-30	DBTG	3.40	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2440-005-e	MONO	MNO-2440	CU-6	30-35	DBTG	3.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-005-h	MONO	MNO-2440	CU-6	30-35	DBTG	3.40		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
2440-004-k	MONO	MNO-2440	CU-6	25-30	DBTG	3.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5025	TULARE	TUL-1198			DBTG	3.40	0.00	CD-LM	XRF	316430	4182250		11	Volcanics	Latest Holocene Ash/Pumice	Nanamkin family-Vitrandic Haploxerolls complex, 15 to 30 percent slopes..
1353-24-2453	TULARE	TUL-0024		0-12"	PRJPT	3.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
349-601	MONO	F152	SUR	SUR	BIF	3.40	0.00	CD	XRF	265899	4086109	83		LtP	latest-Pleist	Los Robles loam, 0 to 3 percent slopes
574-50	MNO	MNO-0574	UNIT D	040-050	DEB	3.40	0.00	CD	VIS	337098	4173904	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
574-135	MNO	MNO-0574	UNIT D	110-120	DEB	3.40	0.00	CD	VIS	337098	4173904	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UA026	MNO	MNO-0574	UNIT A	030-040	BIF	3.40	0.00	CD	VIS	337169	4173290	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UA021	MNO	MNO-0577	UNIT A	030-040	CORE	3.40	0.00	CD	VIS	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UA037	MNO	MNO-0577	UNIT A	040-050	CORE	3.40	0.00	CD	XRF	337564	4172513	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5329-11	FRESNO	87A-31			DBTG	3.40	1.90	CD	XRF	337564	4172513	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-08C	MONO	A4	SUR	SUR	DBTG	3.40	0.00	CD	XRF	337166	4173030	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
362J	FRESNO	FRE-1044		80-90	DBTG	3.40	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
411B	FRESNO	FRE-1044		60-70	DBTG	3.40	0.00	CD	XRF	336565	4174674	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
411C	FRESNO	FRE-1044		60-70	DBTG	3.40	0.00	CD	VIS	334277	4176214	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
411J	FRESNO	FRE-1044		60-70	DBTG	3.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1256	FRESNO	FRE-1360		50-60	DBTG	3.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1260	FRESNO	FRE-1360		50-60	DBTG	3.40	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1283	FRESNO	FRE-1360		60-70	DBTG	3.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1225	FRESNO	FRE-1360		10-20	DBTG	3.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1247	FRESNO	FRE-1360		30-40	DBTG	3.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
23-1	FRESNO	FRE-1362		0-10	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
56E	FRESNO	FRE-1363		0-10	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
16-1	FRESNO	FRE-1363		70-80	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
50-2	FRESNO	FRE-1365		0-10	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1440	59N/4E	30-40	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1440	59N/4E	50-60	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
D	FRESNO	FRE-1447	109S/99E	6-0	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	0-10	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	10-20	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	10-20	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	30-40	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	60-70	DBTG	3.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	90-100	DBTG	3.40	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1963-54	FRESNO	FRE-1671	62N/21E	80-90	DBTG	3.40	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00381	FRESNO	FRE-1964		60	BIF	3.40	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00381	FRESNO	FRE-1964		60	BIF	3.40	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00416	FRESNO	FRE-1964		70	BIF	3.40	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00416	FRESNO	FRE-1964		70	BIF	3.40	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
330F	FRESNO	FRE-1964		30-40	DBTG	3.40	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
330F	FRESNO	FRE-1964		30-40	DBTG	3.40	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
340F	FRESNO	FRE-1964		60-70	DBTG	3.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
340F	FRESNO	FRE-1964		60-70	DBTG	3.40	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
449A	FRESNO	FRE-1964		30-40	DBTG	3.40	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
449A	FRESNO	FRE-1964		30-40	DBTG	3.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
458D	FRESNO	FRE-1964		70-80	DBTG	3.40	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
458D	FRESNO	FRE-1964		70-80	DBTG	3.40	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
461B	FRESNO	FRE-1964		90-100	DBTG	3.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
461B	FRESNO	FRE-1964		90-100	DBTG	3.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
474F	FRESNO	FRE-1964		40-50	DBTG	3.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
474F	FRESNO	FRE-1964		40-50	DBTG	3.40	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
480A	FRESNO	FRE-1964		70-80	DBTG	3.40	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
480A	FRESNO	FRE-1964		70-80	DBTG	3.40	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
480B	FRESNO	FRE-1964		70-80	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
480B	FRESNO	FRE-1964		70-80	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
480D	FRESNO	FRE-1964		70-80	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
480D	FRESNO	FRE-1964		70-80	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
16-1	FRESNO	FRE-1964		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
16-1	FRESNO	FRE-1964		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
46-2	FRESNO	FRE-1964		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
46-2	FRESNO	FRE-1964		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
36-1	FRESNO	FRE-1967		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
19-1	FRESNO	FRE-1974		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
38-1	FRESNO	FRE-1974		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
40-2	FRESNO	FRE-1974		0-10	DBTG	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
100B	FRESNO	FRE-1976		SURFACE	PRJPT	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
832	FRESNO	FRE-0064	#6/40-50	40-50	BIF	3.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1500	FRESNO	FRE-0064	#7/40-50	40-50	FLKTL	3.40		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1765	FRESNO	FRE-0064	#7/20-30	20-30	FLKTL	3.50	0.00	CD-SR	XRF	358810	4191460		11	Holocene	late-Holo	Montezuma-Brantel complex, 2 to 8 percent slopes
41D	FRESNO	FRE-0814		20-30	DBTG	3.50	5.90	CD	VIS	335310	4174076	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
152C	FRESNO	FRE-0814		0-10	DBTG	3.50	0.00	CD	VIS	334725	4172188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
152D	FRESNO	FRE-0814		0-10	DBTG	3.50	0.00	CD	VIS	334725	4172188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
43A	FRESNO	FRE-0815		30-40	DBTG	3.50	0.00	CD	VIS	334002	4175049	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
80C	FRESNO	FRE-0815		20-30	DBTG	3.50	0.00	CD	VIS	333453	4175164	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-3-8	MADERA	MAD-1222		10	DBTG	3.50	0.00	CD	VIS	333133	4176046	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
7-22-1	MADERA	MAD-1222		20-30	DBTG	3.50	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
7-26-6	MADERA	MAD-1222		30-40	DBTG	3.50	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2-4-1	MADERA	MAD-0223		76	PRJPT	3.50	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2439-002-aa	MONO	MNO-2439	SC	SUR	DBTG	3.50	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2440-003-h	MONO	MNO-2440	CU-6	23-25	DBTG	3.50	0.00	CD	VIS	332856	4175923	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2440-004-n	MONO	MNO-2440	CU-6	25-30	DBTG	3.50	0.00	CD	XRF	337928	4186805	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Cryopsamments, 0 to 15 percent slopes.
2440-004-e	MONO	MNO-2440	CU-6	25-30	DBTG	3.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-525A	MONO	F144	SUR	LOCUS C	DBTG	3.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-525D	MONO	F144	SUR	LOCUS C	DBTG	3.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-444D	MONO	W132	SUR	SUR	DBTG	3.50		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
SC007	MNO	MNO-0574	SURFACE	SURFACE	BIF	3.50		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
UA035	MNO	MNO-0577	UNIT A	040-050	CORE	3.50		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
UA042	MNO	MNO-0577	UNIT A	050-060	CORE	3.50		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-268C	MONO	A59	SUR	SUR	DBTG	3.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00110	FRESNO	FRE-1044		SURFACE	PRJPT	3.50	0.00	CD-LM	XRF	316430	4182250		11	Volcanics	Latest Holocene Ash/Pumice	Nanamkin family-Vitrandic Haploxerolls complex, 15 to 30 percent slopes..
00449	FRESNO	FRE-1044		40	PRJPT	3.50	0.00	CD	XRF	337564	4172513	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
00469	FRESNO	FRE-1044		80	PRJPT	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
00104	FRESNO	FRE-1044		SURFACE	BIF	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
00408	FRESNO	FRE-1044		70	BIF	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
330A	FRESNO	FRE-1044		30-40	DBTG	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
315D	FRESNO	FRE-1044		60-70	DBTG	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
1253	FRESNO	FRE-1360		40-50	DBTG	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
1257	FRESNO	FRE-1360		50-60	DBTG	3.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
1258	FRESNO	FRE-1360		50-60	DBTG	3.50	0.00	CD-LM	XRF	365910	4131720		11	Older Pleist.	Older Pleist	Wrango-Pizona families complex, 5 to 30 percent slopes.
1228	FRESNO	FRE-1360		20-30	DBTG	3.50	0.00	CD	VIS	334614	4174478	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
230A	FRESNO	FRE-1360		0-10	DBTG	3.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
287E	FRESNO	FRE-1360		0-10	DBTG	3.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1440	59N/4E	80-90	DBTG	3.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	40-50	DBTG	3.50	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	70-80	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	90-100	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	110-120	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	120-130	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	120-130	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
D	FRESNO	FRE-1447	109S/99E	120-130	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
B	FRESNO	FRE-1480	0N/0E	30-40	DBTG	3.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2272-69	FRESNO	FRE-1671	41N/10E	40-50	DBTG	3.50	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2235	FRESNO	FRE-1671	41N/10E	25	PRJPT	3.50	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00525	FRESNO	FRE-1964		60	PRJPT	3.50	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
00525	FRESNO	FRE-1964		60	PRJPT	3.50	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
461C	FRESNO	FRE-1964		90-100	DBTG	3.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
461C	FRESNO	FRE-1964		90-100	DBTG	3.50	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
467B	FRESNO	FRE-1964		10-20	DBTG	3.50	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
467B	FRESNO	FRE-1964		10-20	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
474D	FRESNO	FRE-1964		40-50	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
474D	FRESNO	FRE-1964		40-50	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
408D	FRESNO	FRE-1964		10-20	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
408D	FRESNO	FRE-1964		10-20	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
22-1	FRESNO	FRE-1967		0-10	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52-1	FRESNO	FRE-1967		0-10	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
23-1	FRESNO	FRE-1969		10-20	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1-1	FRESNO	FRE-1970		0-10	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
71-1	FRESNO	FRE-1976		0-10	FLKTL	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
99-2	FRESNO	FRE-1976		0-10	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
100A	FRESNO	FRE-1976		SURFACE	PRJPT	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
22-1	FRESNO	FRE-1978		0-10	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5336-10	FRESNO	FRE-2162			DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1602	FRESNO	FRE-0064	Unit 5	20-30	FLKTL	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1616	FRESNO	FRE-0064	Unit 5	10-20	FLKTL	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
41C	FRESNO	FRE-0814		20-30	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
41E	FRESNO	FRE-0814		20-30	DBTG	3.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52A	FRESNO	FRE-0814		SURFACE	DBTG	3.50	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52B	FRESNO	FRE-0814		SURFACE	DBTG	3.50	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
120	FRESNO	FRE-0814		20-30	PRJPT	3.50	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
139A	FRESNO	FRE-0814		10-20	DBTG	3.50	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
7-20-1	MADERA	MAD-1222		10-20	DBTG	3.50	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
7-26-4	MADERA	MAD-1222		30-40	DBTG	3.50	0.00	CD	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
2-2-2	MADERA	MAD-0223		30-33	PRJPT	3.50	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
2-4-1	MADERA	MAD-0223		76	PRJPT	3.50	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
2-4-5	MADERA	MAD-0223		10-20	DBTG	3.50	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-18-3	MADERA	MAD-0397		30-40	DBTG	3.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
7-28-2	MADERA	MAD-0397		70-80	DBTG	3.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2439-027-e	MONO	MNO-2439	98-1	20-30	DBTG	3.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-005-a	MONO	MNO-2440	CU-6	30-35	DBTG	3.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2440-002-n	MONO	MNO-2440	CU-6	5-23	DBTG	3.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2440-002-o	MONO	MNO-2440	CU-6	5-23	DBTG	3.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-c	MONO	MNO-2440	CU-6	0-5	DBTG	3.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2440-006-e	MONO	MNO-2440	CU-6	35-40	DBTG	3.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1353-24-1261	TULARE	TUL-0024		0-6"	PRJPT	3.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-633	MONO	F156	SUR	SUR	BIF	3.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-27	MNO	MNO-0574	UNIT D	020-030	DEB	3.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-112	MNO	MNO-0574	UNIT D	090-100	DEB	3.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-142	MNO	MNO-0574	UNIT D	120-130	DEB	3.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-22	MNO	MNO-0574	UNIT D	010-020	DEB	3.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
574-140	MNO	MNO-0574	UNIT D	120-130	DEB	3.50	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
UA015	MNO	MNO-0574	UNIT A	030-040	BIF	3.50	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
UE010	MNO	MNO-0574	UNIT E	030-040	BIF	3.50	0.00	CD	XRF	353050	4067090		11	pre-Quat	pre-Quat	SIRRETTA-CHAIX VARIANT-ROCK OUTCROP (CA716)
UE014	MNO	MNO-0574	UNIT E	040-050	BIF	3.50	0.00	CD	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UE032	MNO	MNO-0574	UNIT E	080-090	BIF	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UA025	MNO	MNO-0577	UNIT A	030-040	CORE	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UA034	MNO	MNO-0577	UNIT A	040-050	CORE	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UD019	MNO	MNO-0577	UNIT E	040-050	RETOUCH	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-10H	MONO	A5	SUR	SUR	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-292C	MONO	A69	SUR	LOCUS A	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00399	FRESNO	FRE-1044		SURFACE	PRJPT	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
427E	FRESNO	FRE-1044		90-100	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
239-4	FRESNO	FRE-1044		0-10	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1254	FRESNO	FRE-1360		40-50	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1262	FRESNO	FRE-1360		10-20	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1273	FRESNO	FRE-1360		70-80	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1244	FRESNO	FRE-1360		10-20	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
278C	FRESNO	FRE-1360		0-10	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
328C	FRESNO	FRE-1360		0-10	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
344D	FRESNO	FRE-1360		0-10	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1-1	FRESNO	FRE-1362		0-10	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
56A	FRESNO	FRE-1363		0-10	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
30-1	FRESNO	FRE-1363		70-80	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
E	FRESNO	FRE-1447	109S/99E	50-60	DBTG	3.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
C	FRESNO	FRE-1447	109S/99E	60-70	DBTG	3.54		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
D	FRESNO	FRE-1447	109S/99E	90-100	DBTG	3.60	0.00	CD	VIS	336700	4173457	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
D	FRESNO	FRE-1447	109S/99E	100-110	DBTG	3.60	0.00	CD	XRF	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
C	FRESNO	FRE-1480	0N/0E	40-50	DBTG	3.60	0.00	CD	VIS	334751	4172992	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
C	FRESNO	FRE-1480	0N/0E	50-60	DBTG	3.60	0.00	CD	VIS	334127	4172057	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1805-13	FRESNO	FRE-1671	62N/21E	30-40	DBTG	3.60	0.00	CD	VIS	333453	4175164	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
330C	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	333732	4175542	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
330C	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
330D	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
330D	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
351D	FRESNO	FRE-1964		90-100	DBTG	3.60	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
351D	FRESNO	FRE-1964		90-100	DBTG	3.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
449D	FRESNO	FRE-1964		30-40	DBTG	3.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
449D	FRESNO	FRE-1964		30-40	DBTG	3.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
455C	FRESNO	FRE-1964		50-60	DBTG	3.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
455C	FRESNO	FRE-1964		50-60	DBTG	3.60		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
480C	FRESNO	FRE-1964		70-80	DBTG	3.60		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
480C	FRESNO	FRE-1964		70-80	DBTG	3.60	0.00	CD	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
424A	FRESNO	FRE-1964		80-90	DBTG	3.60	0.00	CD	VIS	337169	4173290	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
424A	FRESNO	FRE-1964		80-90	DBTG	3.60	0.00	CD	XRF	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
48-2	FRESNO	FRE-1964		0-10	DBTG	3.60	0.00	CD	XRF	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
48-2	FRESNO	FRE-1964		0-10	DBTG	3.60	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
32-2	FRESNO	FRE-1967		0-10	DBTG	3.60	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
12-1	FRESNO	FRE-1971		0-10	DBTG	3.60	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
20-3	FRESNO	FRE-1974		0-10	DBTG	3.60	0.00	CD	XRF	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
41-1	FRESNO	FRE-1974		0-10	DBTG	3.60	0.00	CD	XRF	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
39-2	FRESNO	FRE-1975		0-10	DBTG	3.60	0.00	CD	VIS	333843	4177378	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
89-1	FRESNO	FRE-1976		30-65	DBTG	3.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5336-05	FRESNO	FRE-2162			DBTG	3.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5336-06	FRESNO	FRE-2162			DBTG	3.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1440	FRESNO	FRE-0064			DBTG	3.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
33D	FRESNO	FRE-0814		0-10	DBTG	3.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
41B	FRESNO	FRE-0814		20-30	DBTG	3.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
68	FRESNO	FRE-0814		20-30	PRJPT	3.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
106	FRESNO	FRE-0814		0-10	BIF	3.60	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
139B	FRESNO	FRE-0814		10-20	DBTG	3.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
140A	FRESNO	FRE-0814		20-30	DBTG	3.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
140E	FRESNO	FRE-0814		20-30	DBTG	3.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
152E	FRESNO	FRE-0814		0-10	DBTG	3.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
154C	FRESNO	FRE-0814		20-30	DBTG	3.60	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
106D	FRESNO	FRE-0815		0-10	DBTG	3.60	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
77-1	FRESNO	FRE-0982		0-10	DBTG	3.60	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2-15	MADERA	MAD-1222		0-10	DBTG	3.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
7-20-7	MADERA	MAD-1222		10-20	DBTG	3.60	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-4-7	MADERA	MAD-0223		10-20	DBTG	3.60	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-6	MADERA	MAD-0397		10-20	DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-g	MONO	MNO-2440	CU-6	0-5	DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-007-f	MONO	MNO-2440	CU-6	40-45	DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1353-24-392A	TULARE	TUL-0024		0-6"	PRJPT	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-550	MONO	F147	SUR	LOCUS A	PRJPT	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-555	MONO	F147	SUR	LOCUS A	BIF	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-563	MONO	F149	SUR	LOCUS A	BIF	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-634	MONO	F156	SUR	SUR	BIF	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-695	MONO	F164	SUR	SUR	PRJPT	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-56	MNO	MNO-0574	UNIT D	040-050	DEB	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB006	MNO	MNO-0574	UNIT B	040-50	BIF	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UE016	MNO	MNO-0574	UNIT E	040-050	BIF	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UE034	MNO	MNO-0574	UNIT E	090-100	BIF	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB010	MNO	MNO-0577	UNIT B	050-060	CORE	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB019	MNO	MNO-0577	UNIT B	60	CORE	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB023	MNO	MNO-0577	UNIT B	65	CORE	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5329-01	FRESNO	87A-31			DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
411H	FRESNO	FRE-1044		60-70	DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
239-2	FRESNO	FRE-1044		0-10	DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
245-2	FRESNO	FRE-1044		0-10	DBTG	3.60	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1268	FRESNO	FRE-1360		40-50	DBTG	3.60	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
1282	FRESNO	FRE-1360		60-70	DBTG	3.60	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1245	FRESNO	FRE-1360		10-20	DBTG	3.60	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
322D	FRESNO	FRE-1360		0-10	DBTG	3.60	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
19-2	FRESNO	FRE-1362		0-10	DBTG	3.60	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
60D	FRESNO	FRE-1363		0-10	DBTG	3.60	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
6-2	FRESNO	FRE-1365		10-20	DBTG	3.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
79-1	FRESNO	FRE-1365		0-10	DBTG	3.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1440	59N/4E	10-20	DBTG	3.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1440	59N/4E	20-30	DBTG	3.60	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
D	FRESNO	FRE-1447	109S/99E	10-20	DBTG	3.60	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	40-50	DBTG	3.60	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
D	FRESNO	FRE-1447	109S/99E	40-50	DBTG	3.60	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
D	FRESNO	FRE-1480	0N/0E	0-10	DBTG	3.60	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
371E	FRESNO	FRE-1964		10-20	DBTG	3.60	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
371E	FRESNO	FRE-1964		10-20	DBTG	3.60	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
371F	FRESNO	FRE-1964		10-20	DBTG	3.60	0.00	CD	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
371F	FRESNO	FRE-1964		10-20	DBTG	3.60	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
366B	FRESNO	FRE-1964		160-170	DBTG	3.60	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
366B	FRESNO	FRE-1964		160-170	DBTG	3.60	0.00	CD	VIS	338327	4182556	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
449B	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
449B	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
449C	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	338529	4181901	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
449C	FRESNO	FRE-1964		30-40	DBTG	3.60	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
461D	FRESNO	FRE-1964		90-100	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
461D	FRESNO	FRE-1964		90-100	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
424C	FRESNO	FRE-1964		80-90	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
424C	FRESNO	FRE-1964		80-90	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
44-1	FRESNO	FRE-1964		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
44-1	FRESNO	FRE-1964		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
46-1	FRESNO	FRE-1964		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
46-1	FRESNO	FRE-1964		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
11-1	FRESNO	FRE-1969		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
10-2	FRESNO	FRE-1971		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
20-2	FRESNO	FRE-1974		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
41-2	FRESNO	FRE-1975		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1-1	FRESNO	FRE-1977		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-4	FRESNO	FRE-1977		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
10-3	FRESNO	FRE-1979		0-10	DBTG	3.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
33-2	FRESNO	FRE-1980		0-10	DBTG	3.70	0.00	CD	VIS	337015	4174010	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
37D	FRESNO	FRE-0814		10-20	DBTG	3.70	0.00	CD	VIS	336421	4174071	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
37E	FRESNO	FRE-0814		10-20	DBTG	3.70	4.70	CD	VIS	336803	4173368	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
52E	FRESNO	FRE-0814		SURFACE	DBTG	3.70	0.00	CD	VIS	333807	4172178	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
139D	FRESNO	FRE-0814		10-20	DBTG	3.70	0.00	CD	VIS	333475	4173926	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
9-1	FRESNO	FRE-0982		0-10	DBTG	3.70	0.00	CD	VIS	333590	4175444	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-1	FRESNO	FRE-0982		10-20	DBTG	3.70	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
5-4-8	MADERA	MAD-1223		10-20	DBTG	3.70	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2-8	MADERA	MAD-0223		30-40	DBTG	3.70	2.60	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
2-8-2	MADERA	MAD-0223		30-40	DBTG	3.70	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
7-28-6	MADERA	MAD-0397		70-80	DBTG	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-001-k	MONO	MNO-2440	CU-6	0-5	DBTG	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-003-i	MONO	MNO-2440	CU-6	23-25	DBTG	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-006-j	MONO	MNO-2440	CU-6	35-40	DBTG	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2440-006-i	MONO	MNO-2440	CU-6	35-40	DBTG	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
EU4	TULARE	TUL-1227		40-50	BIF	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-444B	MONO	W132	SUR	SUR	DBTG	3.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
UB006	MNO	MNO-0574	UNIT B	050-060	BIF	3.70	0.00	CD	VIS	337098	4173904	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UI007	MNO	MNO-0574	UNIT I	46	BIF	3.70	0.00	CD	XRF	337660	4172947	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UA006	MNO	MNO-0574	UNIT A	040-050	RETOUCH	3.70	0.00	CD	VIS	337660	4172947	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UA008	MNO	MNO-0574	UNIT A	050-060	RETOUCH	3.70	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
UE018	MNO	MNO-0574	UNIT E	040-050	BIF	3.70	0.00	CD	XRF	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
UA022	MNO	MNO-0577	UNIT A	030-040	CORE	3.70	2.70	CD	XRF	337979	4181145	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
UA016	MNO	MNO-0577	UNIT A	030-040	CORE	3.70	0.00	CD	XRF	338150	4181394	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
UA039	MNO	MNO-0577	UNIT A	040-050	CORE	3.70	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-58A	MONO	A16	SUR	SUR	DBTG	3.70	0.00	CD	VIS	334614	4174478	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-04A	MONO	A2	SUR	SUR	DBTG	3.70	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-269	MONO	A59	SUR	SUR	BIF	3.70	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00438	FRESNO	FRE-1044		20	BIF	3.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00488	FRESNO	FRE-1044		90	BIF	3.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00529	FRESNO	FRE-1044		100	BIF	3.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00029	FRESNO	FRE-1044		110	PREFORM	3.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
362I	FRESNO	FRE-1044		80-90	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1308	FRESNO	FRE-1360		20-30	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
278E	FRESNO	FRE-1360		0-10	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
15-1	FRESNO	FRE-1362		0-10	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
31-1	FRESNO	FRE-1363		80-90	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5-2	FRESNO	FRE-1365		0-10	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
6-3	FRESNO	FRE-1365		10-20	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
10-1	FRESNO	FRE-1365		40-50	DBTG	3.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
11-2	FRESNO	FRE-1365		50-60	DBTG	3.70	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
50-1	FRESNO	FRE-1365		0-10	DBTG	3.70	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
64-1	FRESNO	FRE-1365		0-10	DBTG	3.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
70-1A	FRESNO	FRE-1365		10-60	DBTG	3.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
84-1	FRESNO	FRE-1365		0-10	DBTG	3.70	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
84-2	FRESNO	FRE-1365		0-10	DBTG	3.70	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
A	FRESNO	FRE-1440	59N/4E	40-50	DBTG	3.70	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1440	59N/4E	70-80	DBTG	3.70	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1447	109S/99E	80-90	DBTG	3.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	100-110	DBTG	3.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9-1	FRESNO	FRE-1963		0-10	DBTG	3.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00311	FRESNO	FRE-1964		10	BIF	3.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00311	FRESNO	FRE-1964		10	BIF	3.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
379E	FRESNO	FRE-1964		40-50	DBTG	3.70	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
379E	FRESNO	FRE-1964		40-50	DBTG	3.70	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
437C	FRESNO	FRE-1964		150-160	DBTG	3.70	0.00	CD	VIS	308900	4105000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
437C	FRESNO	FRE-1964		150-160	DBTG	3.70	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
38-2	FRESNO	FRE-1967		0-10	DBTG	3.70	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
46-2	FRESNO	FRE-1967		0-10	DBTG	3.70	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
16-2	FRESNO	FRE-1971		0-10	DBTG	3.70	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
11-2	FRESNO	FRE-1972		0-10	DBTG	3.70	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
32-2	FRESNO	FRE-1975		0-10	DBTG	3.70	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
36-1	FRESNO	FRE-1975		0-10	DBTG	3.70	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
38-1	FRESNO	FRE-1975		0-10	DBTG	3.70	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
50-1	FRESNO	FRE-1975		0-10	FLKTL	3.70	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
51-1	FRESNO	FRE-1975		0-10	DBTG	3.70	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
84-1	FRESNO	FRE-1976		0-10	DBTG	3.70	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-1A	FRESNO	FRE-1978		0-10	BIF	3.70	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
27-1	FRESNO	FRE-1980		0-10	DBTG	3.70	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
784	FRESNO	FRE-0064	#6/20-30	20-30	PRJPT	3.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
1025	FRESNO	FRE-0064	#2/20-30	20-30	BIF	3.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
1246	FRESNO	FRE-0064	#3/20-30	20-30	PRJPT	3.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
833	FRESNO	FRE-0064	#6/40-50	40-50	FLKTL	3.70	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
130	FRESNO	FRE-0814		20-30	BIF	3.70	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
18	FRESNO	FRE-0815		0-10	BIF	3.70	0.00	CD	VIS	338327	4182556	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
43B	FRESNO	FRE-0815		30-40	DBTG	3.70	0.00	CD	XRF	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
67-3	FRESNO	FRE-0982		0-5	DBTG	3.70	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
3-6	MADERA	MAD-1222		SURFACE	PRJPT	3.70	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-11-1	MADERA	MAD-1222		0-10	DBTG	3.70	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
7-22-4	MADERA	MAD-1222		20-30	DBTG	3.70	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
5-4-6	MADERA	MAD-1223		10-20	DBTG	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
7-6-9	MADERA	MAD-0397		10-20	DBTG	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2439-002-u	MONO	MNO-2439	SC	SUR	DBTG	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-009-e	MONO	MNO-2440	CU-7	0-5	DBTG	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5136	TULARE	TUL-0103			DBTG	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-534E	MONO	F144	SUR	LOCUS D	DBTG	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-587	MONO	F149	SUR	LOCUS A	BIF	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-51	MNO	MNO-0574	UNIT D	040-050	DEB	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-116	MNO	MNO-0574	UNIT D	100-110	DEB	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UI006	MNO	MNO-0574	UNIT I	42	BIF	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UE013	MNO	MNO-0574	UNIT E	040-050	BIF	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UE015	MNO	MNO-0574	UNIT E	040-050	BIF	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UA011	MNO	MNO-0577	UNIT A	020-030	CORE	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UA023	MNO	MNO-0577	UNIT A	030-040	CORE	3.70		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UA018	MNO	MNO-0577	UNIT A	030-040	CORE	3.70		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UA031	MNO	MNO-0577	UNIT A	040-050	CORE	3.80	0.00	CD	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
UA032	MNO	MNO-0577	UNIT A	040-050	CORE	3.80	0.00	CD-LM	XRF	314520	4193150		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes
UB026	MNO	MNO-0577	UNIT B	61	CORE	3.80	0.00	CD	VIS	336803	4173368	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UB013	MNO	MNO-0577	UNIT B	63	CORE	3.80	0.00	CD	VIS	333807	4172178	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
UE022	MNO	MNO-0577	UNIT E	040-050	CORE	3.80	0.00	CD	VIS	333590	4175444	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UE020	MNO	MNO-0577	UNIT E	040-050	CORE	3.80	0.00	CD	VIS	334002	4175049	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UE011	MNO	MNO-0577	UNIT E	030-040	CORE	3.80	0.00	CD	VIS	332338	4175465	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
349-293C	MONO	A69	SUR	LOCUS B	DBTG	3.80	3.10	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
306A	FRESNO	FRE-1044		20-30	DBTG	3.80	0.00	CD	XRF	338401	4187685	83		Volcanics	Latest Holocene Ash/Pumice	Fez family-Vitrandic Xeropsamments complex, 30 to 60 percent slopes.
390B	FRESNO	FRE-1044		30-40	DBTG	3.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
411A	FRESNO	FRE-1044		60-70	DBTG	3.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
411I	FRESNO	FRE-1044		60-70	DBTG	3.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1252	FRESNO	FRE-1360		40-50	DBTG	3.80		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
1279	FRESNO	FRE-1360		90-100	DBTG	3.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1280	FRESNO	FRE-1360		90-100	DBTG	3.80	0.00	CD	VIS	337217	4173913	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
00516	FRESNO	FRE-1360		60	PREFORM	3.80	0.00	CD	VIS	337098	4173904	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1223	FRESNO	FRE-1360		10-20	DBTG	3.80	0.00	CD	VIS	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1249	FRESNO	FRE-1360		30-40	DBTG	3.80	0.00	CD	VIS	337564	4172513	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
322C	FRESNO	FRE-1360		0-10	DBTG	3.80	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
18-2	FRESNO	FRE-1362		0-10	DBTG	3.80	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
68-1B	FRESNO	FRE-1365		0-10	FLKTL	3.80	0.00	CD	VIS	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
69-2	FRESNO	FRE-1365		10-60	DBTG	3.80	0.00	CD	VIS	337169	4174848	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
C	FRESNO	FRE-1440	59N/4E	30-40	DBTG	3.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
D	FRESNO	FRE-1447	109S/99E	30-40	DBTG	3.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2005-88	FRESNO	FRE-1671	62N/21E	140-150	DBTG	3.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
4-1	FRESNO	FRE-1964		0-10	DBTG	3.80	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
4-1	FRESNO	FRE-1964		0-10	DBTG	3.80	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
26-1	FRESNO	FRE-1965		0-10	DBTG	3.80	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
39-1	FRESNO	FRE-1975		0-10	DBTG	3.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
74	FRESNO	FRE-1976		0-10	FLKTL	3.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5336-04	FRESNO	FRE-2162			DBTG	3.80	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
66-3	FRESNO	FRE-0982		0-10	DBTG	3.80	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
2-15-3	MADERA	MAD-1222		0-10	DBTG	3.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2-23-9	MADERA	MAD-1222		20-30	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-29-8	MADERA	MAD-1222		30-40	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-4-8	MADERA	MAD-1222		15	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-11-10	MADERA	MAD-1222		0-10	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-24-8	MADERA	MAD-0397		50-60	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-24-9	MADERA	MAD-0397		50-60	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-13-5	MADERA	MAD-0397		30-40	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-j	MONO	MNO-2440	CU-6	0-5	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-l	MONO	MNO-2440	CU-6	0-5	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-005-l	MONO	MNO-2440	CU-6	30-35	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-003-r	MONO	MNO-2440	CU-6	23-25	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-531	MONO	F144	SUR	LOCUS C	BIF	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-534C	MONO	F144	SUR	LOCUS D	DBTG	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-632	MONO	F156	SUR	SUR	BIF	3.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-435A	MONO	W130	SUR	SUR	DBTG	3.80	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
574-64	MNO	MNO-0574	UNIT D	050-060	DEB	3.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
574-118	MNO	MNO-0574	UNIT D	100-110	DEB	3.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
UA024	MNO	MNO-0577	UNIT A	030-040	CORE	3.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
UA038	MNO	MNO-0577	UNIT A	040-050	CORE	3.80	5.10	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
UB011	MNO	MNO-0577	UNIT B	050-060	CORE	3.80	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-84D	MONO	A23	SUR	SUR	DBTG	3.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
00419	FRESNO	FRE-1044		80	PRJPT	3.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
00409	FRESNO	FRE-1044		70	BIF	3.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
346F	FRESNO	FRE-1044		60-70	DBTG	3.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
362G	FRESNO	FRE-1044		80-90	DBTG	3.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
362H	FRESNO	FRE-1044		80-90	DBTG	3.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
430C	FRESNO	FRE-1044		110-120	DBTG	3.80	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
390C	FRESNO	FRE-1044		30-40	DBTG	3.80	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
245-4	FRESNO	FRE-1044		0-10	DBTG	3.80	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1277	FRESNO	FRE-1360		90-100	DBTG	3.80	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1330	FRESNO	FRE-1360		40-50	DBTG	3.80	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1331	FRESNO	FRE-1360		40-50	DBTG	3.80	0.00	CD	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00600	FRESNO	FRE-1360		160	PREFORM	3.80	0.00	CD	VIS	338327	4182556	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-1	FRESNO	FRE-1362		10-20	DBTG	3.80	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
13-2	FRESNO	FRE-1362		0-10	DBTG	3.80	0.00	CD	VIS	335849	4182571	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
118A	FRESNO	FRE-1363		0-10	DBTG	3.80	0.00	CD	XRF	338529	4181901	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
118D	FRESNO	FRE-1363		0-10	DBTG	3.80	0.00	CD	VIS	337711	4181494	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
B	FRESNO	FRE-1440	59N/4E	0-10	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
A	FRESNO	FRE-1447	109S/99E	80-90	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2397-77	FRESNO	FRE-1671	62N/12E	20-30	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
326	FRESNO	FRE-1671	UNIT J	30-100	PRJPT	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00448	FRESNO	FRE-1964		40	PRJPT	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00448	FRESNO	FRE-1964		40	PRJPT	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00430	FRESNO	FRE-1964		110	BIF	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00430	FRESNO	FRE-1964		110	BIF	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
379B	FRESNO	FRE-1964		40-50	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
379B	FRESNO	FRE-1964		40-50	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
455F	FRESNO	FRE-1964		50-60	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
455F	FRESNO	FRE-1964		50-60	DBTG	3.80		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
437B	FRESNO	FRE-1964		150-160	DBTG	3.80		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
437B	FRESNO	FRE-1964		150-160	DBTG	3.90	0.00	CD	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
48-3	FRESNO	FRE-1964		0-10	DBTG	3.90	0.00	CD	VIS	336421	4174071	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
48-3	FRESNO	FRE-1964		0-10	DBTG	3.90	0.00	CD	VIS	335091	4172864	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
55-1	FRESNO	FRE-1964		0-10	DBTG	3.90	0.00	CD	VIS	334127	4172057	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
55-1	FRESNO	FRE-1964		0-10	DBTG	3.90	0.00	CD	VIS	333858	4172758	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
54-1	FRESNO	FRE-1965		0-10	DBTG	3.90	0.00	CD	VIS	332786	4174907	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-1	FRESNO	FRE-1977		0-10	DBTG	3.90	0.00	CD	VIS	332338	4175465	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
1631	FRESNO	FRE-0064	#5/30-40	30-40	PRJPT	3.90	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
33C	FRESNO	FRE-0814		0-10	DBTG	3.90	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
37B	FRESNO	FRE-0814		10-20	DBTG	3.90	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
37C	FRESNO	FRE-0814		10-20	DBTG	3.90	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
56-1	FRESNO	FRE-0982		10-51	DBTG	3.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2-3-3	MADERA	MAD-1222		10	DBTG	3.90	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
2-15-1	MADERA	MAD-1222		0-10	DBTG	3.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
6-5	MADERA	MAD-1222		15	CORE	3.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-6-5	MADERA	MAD-0397		10-20	DBTG	3.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-28-8	MADERA	MAD-0397		70-80	DBTG	3.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-007-i	MONO	MNO-2440	CU-6	40-45	DBTG	3.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-001-q	MONO	MNO-2440	CU-6	0-5	DBTG	3.90	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
2440-001-b	MONO	MNO-2440	CU-6	0-5	DBTG	3.90		CD		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
2440-005-b	MONO	MNO-2440	CU-6	30-35	DBTG	3.90		CD		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
2440-006-a	MONO	MNO-2440	CU-6	35-40	DBTG	3.90	0.00	CD	VIS	337169	4173290	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2440-001-a	MONO	MNO-2440	CU-6	0-5	DBTG	3.90	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
2440-007-h	MONO	MNO-2440	CU-6	40-45	DBTG	3.90	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2440-007-a	MONO	MNO-2440	CU-6	40-45	DBTG	3.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
4992	TULARE	TUL-1198			BIF	3.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5308	TULARE	TUL-1263			BIF	3.90	7.40	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-511A	MONO	F143	SUR	SUR	DBTG	3.90	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-515C	MONO	F144	SUR	LOCUS A	DBTG	3.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-534A	MONO	F144	SUR	LOCUS D	DBTG	3.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-589	MONO	F149	SUR	LOCUS A	DBTG	3.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-610	MONO	F155	SUR	SUR	BIF	3.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-621	MONO	F156	SUR	SUR	BIF	3.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-624	MONO	F156	SUR	SUR	BIF	3.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-627	MONO	F156	SUR	SUR	BIF	3.90	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-628	MONO	F156	SUR	SUR	BIF	3.90	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-446	MONO	W132	SUR	SUR	BIF	3.90	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-444A	MONO	W132	SUR	SUR	DBTG	3.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-08	MNO	MNO-0574	UNIT D	010-020	DEB	3.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-54	MNO	MNO-0574	UNIT D	040-050	DEB	3.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-63	MNO	MNO-0574	UNIT D	050-060	DEB	3.90	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
574-98	MNO	MNO-0574	UNIT D	080-090	DEB	3.90	0.00	CD	VIS	309300	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-106	MNO	MNO-0574	UNIT D	090-100	DEB	3.90	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA003	MNO	MNO-0574	UNIT A	020-030	BIF	3.90	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UH007	MNO	MNO-0574	UNIT H	030-040	BIF	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
SC011	MNO	MNO-0574	SURFACE	SURFACE	BIF	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
577-UE030A	MNO	MNO-0574	UNIT E	070-080	PPT	3.90	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA006	MNO	MNO-0574	UNIT A	020-030	BIF	3.90	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB004	MNO	MNO-0574	UNIT B	40	BIF	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA020	MNO	MNO-0577	UNIT A	030-040	CORE	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA033	MNO	MNO-0577	UNIT A	040-050	CORE	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB018	MNO	MNO-0577	UNIT B	60	CORE	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB015	MNO	MNO-0577	UNIT B	62	CORE	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UA029	MNO	MNO-0577	UNIT A	040-050	RETOUCH	3.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
27	MONO	MNO-3221/H	3A		PRJPT	3.90	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-10K	MONO	A5	SUR	SUR	DBTG	3.90	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
349-297E	MONO	A71	SUR	SUR	DBTG	3.90	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-326D	MONO	A83	SUR	SUR	DBTG	3.90	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
00470	FRESNO	FRE-1044		SURFACE	BIF	3.90	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
362E	FRESNO	FRE-1044		80-90	DBTG	3.90	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
430D	FRESNO	FRE-1044		110-120	DBTG	3.90	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
390H	FRESNO	FRE-1044		30-40	DBTG	3.90	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
201-1	FRESNO	FRE-1044		0-10	DBTG	3.90	0.00	CD	VIS	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
1251	FRESNO	FRE-1360		40-50	DBTG	3.90	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
1261	FRESNO	FRE-1360		10-20	DBTG	3.90	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1267	FRESNO	FRE-1360		40-50	DBTG	3.90	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1284	FRESNO	FRE-1360		60-70	DBTG	3.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1285	FRESNO	FRE-1360		60-70	DBTG	3.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
00701	FRESNO	FRE-1360		40	PREFORM	3.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
273E	FRESNO	FRE-1360		0-10	DBTG	3.90	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
287D	FRESNO	FRE-1360		0-10	DBTG	3.90	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
60E	FRESNO	FRE-1363		0-10	DBTG	3.90	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
68-1A	FRESNO	FRE-1365		0-10	FLKTL	3.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
73-2	FRESNO	FRE-1365		10-90	DBTG	3.90	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1440	59N/4E	30-40	DBTG	3.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1440	59N/4E	50-60	DBTG	3.90	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
A	FRESNO	FRE-1440	59N/4E	70-80	DBTG	3.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
B	FRESNO	FRE-1447	109S/99E	100-110	DBTG	3.90	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
D	FRESNO	FRE-1480	0N/0E	30-40	DBTG	3.90	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1965-56	FRESNO	FRE-1671	62N/21E	90-100	DBTG	3.90	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00471	FRESNO	FRE-1964		40	PRJPT	3.90	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00471	FRESNO	FRE-1964		40	PRJPT	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00497	FRESNO	FRE-1964		60	PRJPT	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00497	FRESNO	FRE-1964		60	PRJPT	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00498	FRESNO	FRE-1964		60	PRJPT	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
00498	FRESNO	FRE-1964		60	PRJPT	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
371D	FRESNO	FRE-1964		10-20	DBTG	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
371D	FRESNO	FRE-1964		10-20	DBTG	3.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
340B	FRESNO	FRE-1964		60-70	DBTG	4.00	0.00	CD	VIS	336421	4174071	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
340B	FRESNO	FRE-1964		60-70	DBTG	4.00	5.60	CD	VIS	339269	4173705	83		Volcanics	Latest Holocene Ash/Pumice	Cashbaugh-Buscones-Calpine family complex, 0 to 4 percent slopes
340C	FRESNO	FRE-1964		60-70	DBTG	4.00	0.00	CD	VIS	334660	4173861	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
340C	FRESNO	FRE-1964		60-70	DBTG	4.00	0.00	CD	VIS	333624	4173847	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
351A	FRESNO	FRE-1964		90-100	DBTG	4.00	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
351A	FRESNO	FRE-1964		90-100	DBTG	4.00	0.00	CD	VIS	334729	4174822	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
358A	FRESNO	FRE-1964		120-130	DBTG	4.00	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
358A	FRESNO	FRE-1964		120-130	DBTG	4.00	0.00	CD	XRF	340087	4183720	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments-Rock outcrop complex, 30 to 60 percent slopes.
39-1	FRESNO	FRE-1964		0-10	DBTG	4.00	0.00	CD	XRF	341957	4183664	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
39-1	FRESNO	FRE-1964		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
51-2	FRESNO	FRE-1964		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
51-2	FRESNO	FRE-1964		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
51-3	FRESNO	FRE-1964		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
51-3	FRESNO	FRE-1964		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
14-1	FRESNO	FRE-1969		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
4821	FRESNO	FRE-1975		0-10	DBTG	4.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
55-2	FRESNO	FRE-1975		0-10	DBTG	4.00	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
56-2	FRESNO	FRE-1975		0-10	DBTG	4.00	0.00	CD	XRF	338092	4173252	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
17-1	FRESNO	FRE-1978		0-10	DBTG	4.00	0.00	CD	VIS	337217	4173913	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
32-1A	FRESNO	FRE-1980		0-10	FLKTL	4.00	0.00	CD	VIS	337660	4172947	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
106B	FRESNO	FRE-0815		0-10	DBTG	4.00	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
2-15-5	MADERA	MAD-1222		0-10	DBTG	4.00	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
7-4-5	MADERA	MAD-1222		15	DBTG	4.00	0.00	CD	VIS	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
1531-102	MADERA	MAD-1531	--	--	BIF	4.00	0.00	CD	VIS	336565	4174674	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
7-6-8	MADERA	MAD-0397		10-20	DBTG	4.00	0.00	CD	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-18-2	MADERA	MAD-0397		30-40	DBTG	4.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-n	MONO	MNO-2440	CU-6	0-5	DBTG	4.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-009-b	MONO	MNO-2440	CU-7	0-5	DBTG	4.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-002-m	MONO	MNO-2440	CU-6	5-23	DBTG	4.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2440-002-q	MONO	MNO-2440	CU-6	5-23	DBTG	4.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-006-h	MONO	MNO-2440	CU-6	35-40	DBTG	4.00	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5236-14	TULARE	TUL-1249			DBTG	4.00	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-525C	MONO	F144	SUR	LOCUS C	DBTG	4.00	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-562	MONO	F147	SUR	LOCUS B	PRJPT	4.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
574-52	MNO	MNO-0574	UNIT D	040-050	DEB	4.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
574-55	MNO	MNO-0574	UNIT D	040-050	DEB	4.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-76	MNO	MNO-0574	UNIT D	060-070	DEB	4.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-78	MNO	MNO-0574	UNIT D	060-070	DEB	4.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-87	MNO	MNO-0574	UNIT D	060-070	DEB	4.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-90	MNO	MNO-0574	UNIT D	060-070	DEB	4.00	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
574-139	MNO	MNO-0574	UNIT D	120-130	DEB	4.00	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
574-73	MNO	MNO-0574	UNIT D	050-060	DEB	4.00	0.00	CD	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
574-86	MNO	MNO-0574	UNIT D	060-070	DEB	4.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UG019	MNO	MNO-0574	UNIT G	62	BIF	4.00	0.00	CD	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UF013	MNO	MNO-0574	UNIT F	050-060	RETOUCH	4.00	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
577-UE030B	MNO	MNO-0574	UNIT E	070-080	PPT	4.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
UE007	MNO	MNO-0574	UNIT E	030-040	BIF	4.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
TR003	MNO	MNO-0574	TRENCH	50	BIF	4.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
UA010	MNO	MNO-0577	UNIT A	020-030	CORE	4.00	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
UB014	MNO	MNO-0577	UNIT B	61	CORE	4.00	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
UE008	MNO	MNO-0577	UNIT E	030-040	CORE	4.00	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
UE021	MNO	MNO-0577	UNIT E	040-050	CORE	4.00	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
88-4-18	FRESNO	88A-4			DBTG	4.00	0.00	CD	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
349-01F	MONO	A1	SUR	SUR	DBTG	4.00	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-53	MONO	A14	SUR	SUR	BIF	4.00	0.00	CD	XRF	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
349-268D	MONO	A59	SUR	SUR	DBTG	4.00	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
349-293A	MONO	A69	SUR	LOCUS B	DBTG	4.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-293B	MONO	A69	SUR	LOCUS B	DBTG	4.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-297A	MONO	A71	SUR	SUR	DBTG	4.10	0.00	CD	VIS	333624	4173847	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-297C	MONO	A71	SUR	SUR	DBTG	4.10	0.00	CD	VIS	334729	4174822	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-297D	MONO	A71	SUR	SUR	DBTG	4.10	0.00	CD	VIS	332338	4175465	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
00336	FRESNO	FRE-1044		52	BIF	4.10	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
00401	FRESNO	FRE-1044		51	PREFORM	4.10	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
330H	FRESNO	FRE-1044		30-40	DBTG	4.10	5.60	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
346A	FRESNO	FRE-1044		60-70	DBTG	4.10	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
362C	FRESNO	FRE-1044		80-90	DBTG	4.10	0.00	CD	XRF	341911	4182927	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
390A	FRESNO	FRE-1044		30-40	DBTG	4.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
212-5	FRESNO	FRE-1044		10-20	DBTG	4.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1322	FRESNO	FRE-1360		10-20	DBTG	4.10		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
344E	FRESNO	FRE-1360		0-10	DBTG	4.10	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
348E	FRESNO	FRE-1360		0-10	DBTG	4.10	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
122A	FRESNO	FRE-1363		0-10	DBTG	4.10	0.00	CD	XRF	339089	4173449	83		Holocene	latest-Holo	Harrel sandy loam, 0 to 8 percent slopes
E	FRESNO	FRE-1440	59N/4E	70-80	DBTG	4.10	0.00	CD	VIS	337217	4173913	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
B	FRESNO	FRE-1480	0N/0E	10-20	DBTG	4.10	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
D	FRESNO	FRE-1480	0N/0E	50-60	DBTG	4.10	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
00441	FRESNO	FRE-1964		20	PRJPT	4.10	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
00441	FRESNO	FRE-1964		20	PRJPT	4.10	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
00500	FRESNO	FRE-1964		60	PRJPT	4.10	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
00500	FRESNO	FRE-1964		60	PRJPT	4.10	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
379C	FRESNO	FRE-1964		40-50	DBTG	4.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
379C	FRESNO	FRE-1964		40-50	DBTG	4.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
358C	FRESNO	FRE-1964		120-130	DBTG	4.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
358C	FRESNO	FRE-1964		120-130	DBTG	4.10	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
15-1	FRESNO	FRE-1964		0-10	DBTG	4.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
15-1	FRESNO	FRE-1964		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52-1	FRESNO	FRE-1964		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52-1	FRESNO	FRE-1964		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
55-3	FRESNO	FRE-1964		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
55-3	FRESNO	FRE-1964		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
4-2	FRESNO	FRE-1971		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
36-3	FRESNO	FRE-1974		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
60-2	FRESNO	FRE-1975		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
30-2	FRESNO	FRE-1980		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
153D	FRESNO	FRE-0814		10-20	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
73B	FRESNO	FRE-0815		0-10	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
74A	FRESNO	FRE-0815		10-20	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
80B	FRESNO	FRE-0815		20-30	DBTG	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
121	FRESNO	FRE-0815		0-10	PRJPT	4.10	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
122A	FRESNO	FRE-0815		0-10	DBTG	4.10	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
5-4-4	MADERA	MAD-1223		10-20	DBTG	4.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2-13-4	MADERA	MAD-0223		70-80	DBTG	4.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
7-6-7	MADERA	MAD-0397		10-20	DBTG	4.10	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
3-17	MADERA	MAD-0397		50-60	DBTG	4.10	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-024-c	MONO	MNO-2439	J2	SUR	DBTG	4.10	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-004-j	MONO	MNO-2440	CU-6	25-30	DBTG	4.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2440-010-j	MONO	MNO-2440	CU-7	5-22	DBTG	4.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2440-007-d	MONO	MNO-2440	CU-6	40-45	DBTG	4.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-435C	MONO	W130	SUR	SUR	DBTG	4.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
574-53	MNO	MNO-0574	UNIT D	040-050	DEB	4.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
574-65	MNO	MNO-0574	UNIT D	050-060	DEB	4.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
574-66	MNO	MNO-0574	UNIT D	050-060	DEB	4.10	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
574-85	MNO	MNO-0574	UNIT D	060-070	DEB	4.10	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
574-89	MNO	MNO-0574	UNIT D	060-070	DEB	4.10	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
574-91	MNO	MNO-0574	UNIT D	060-070	DEB	4.10	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
574-92	MNO	MNO-0574	UNIT D	070-080	DEB	4.10	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
574-95	MNO	MNO-0574	UNIT D	070-080	DEB	4.10	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
574-96	MNO	MNO-0574	UNIT D	070-080	DEB	4.10	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
574-97	MNO	MNO-0574	UNIT D	080-090	DEB	4.10	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
574-101	MNO	MNO-0574	UNIT D	080-090	DEB	4.10	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
574-107	MNO	MNO-0574	UNIT D	090-100	DEB	4.10	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
574-99	MNO	MNO-0574	UNIT D	080-090	DEB	4.10	0.00	CD	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
UJ013	MNO	MNO-0574	UNIT J	060-070	BIF	4.10	0.00	CD	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
SC010	MNO	MNO-0574	SURFACE	SURFACE	BIF	4.10	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
UE029	MNO	MNO-0574	UNIT E	070-080	BIF	4.10	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UB007	MNO	MNO-0577	UNIT B	040-050	CORE	4.10	0.00	CD	VIS	338555	4181647	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
UB025	MNO	MNO-0577	UNIT B	61	CORE	4.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
UB022	MNO	MNO-0577	UNIT B	64	CORE	4.20	0.00	CD-LM	XRF	314520	4193150		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
00460	FRESNO	FRE-1044		60	PRJPT	4.20	0.00	CD-LM	XRF	314520	4193150		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes
362B	FRESNO	FRE-1044		80-90	DBTG	4.20	0.00	CD	VIS	336421	4174071	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
362D	FRESNO	FRE-1044		80-90	DBTG	4.20	0.00	CD	VIS	337458	4173432	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
430A	FRESNO	FRE-1044		110-120	DBTG	4.20	0.00	CD	VIS	333453	4175164	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
430B	FRESNO	FRE-1044		110-120	DBTG	4.20	5.10	CD	VIS	332902	4175501	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
1278	FRESNO	FRE-1360		90-100	DBTG	4.20	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
1291	FRESNO	FRE-1360		40-50	DBTG	4.20	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
1307	FRESNO	FRE-1360		20-30	DBTG	4.20	0.00	CD	XRF					Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Deepwell association, 2 to 15 percent slopes
1326	FRESNO	FRE-1360		50-60	DBTG	4.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1327	FRESNO	FRE-1360		40-50	DBTG	4.20		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
00511	FRESNO	FRE-1360		48	PRJPT	4.20		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
1236	FRESNO	FRE-1360		50-60	DBTG	4.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
233B	FRESNO	FRE-1360		0-10	DBTG	4.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
233C	FRESNO	FRE-1360		0-10	DBTG	4.20		Casa Diablo		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
287B	FRESNO	FRE-1360		0-10	DBTG	4.20	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
4-1	FRESNO	FRE-1362		30-40	DBTG	4.20	0.00	CD	VIS	338453	4174231	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
19-1	FRESNO	FRE-1362		0-10	DBTG	4.20	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
24-1	FRESNO	FRE-1362		0-10	DBTG	4.20	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
122C	FRESNO	FRE-1363		0-10	DBTG	4.20	0.00	CD	VIS	337979	4181145	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
125D	FRESNO	FRE-1363		0-10	DBTG	4.20	0.00	CD	VIS	334614	4174478	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
19-1	FRESNO	FRE-1363		110-120	DBTG	4.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
9-2	FRESNO	FRE-1365		30-40	DBTG	4.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
A	FRESNO	FRE-1440	59N/4E	80-90	DBTG	4.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	90-100	DBTG	4.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
E	FRESNO	FRE-1447	109S/99E	110-120	DBTG	4.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
A	FRESNO	FRE-1447	109S/99E	120-130	DBTG	4.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
D	FRESNO	FRE-1480	0N/0E	20-30	DBTG	4.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1014-15	FRESNO	FRE-1671	UNIT C	20-30	DBTG	4.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1163-27	FRESNO	FRE-1671	UNIT J	60-70	DBTG	4.20	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00384	FRESNO	FRE-1964		70	BIF	4.20	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00384	FRESNO	FRE-1964		70	BIF	4.20	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00496	FRESNO	FRE-1964		50	BIF	4.20	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
00496	FRESNO	FRE-1964		50	BIF	4.20	0.00	CD	VIS	320030	4091540		11	pre-Quat	pre-Quat	LITHIC XEROPSAMMENTS-ROCK OUTCROP ASSOCIATION, 40 TO 65 PERCENT SLOPES
379F	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
379F	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
340E	FRESNO	FRE-1964		60-70	DBTG	4.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
340E	FRESNO	FRE-1964		60-70	DBTG	4.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
351B	FRESNO	FRE-1964		90-100	DBTG	4.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
351B	FRESNO	FRE-1964		90-100	DBTG	4.20	0.00	CD	VIS	307800	4103400		11	pre-Quat	pre-Quat	GERLE-CAGWIN FAMILIES ASSOCIATION, 5 TO 35 PERCENT SLOPES
351C	FRESNO	FRE-1964		90-100	DBTG	4.20	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
351C	FRESNO	FRE-1964		90-100	DBTG	4.20	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
442C	FRESNO	FRE-1964		10-20	DBTG	4.20	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
442C	FRESNO	FRE-1964		10-20	DBTG	4.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
413A	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
413A	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
413B	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
413B	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
413D	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
413D	FRESNO	FRE-1964		40-50	DBTG	4.20	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1A	FRESNO	FRE-1964		SURFACE	BIF	4.20	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1A	FRESNO	FRE-1964		SURFACE	BIF	4.20	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-3	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-3	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
12-1	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
12-1	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
14-1	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
14-1	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
14-2	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
14-2	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
4-3	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
4-3	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
39-2	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
39-2	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
44-3	FRESNO	FRE-1964		0-10	DBTG	4.20	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
44-3	FRESNO	FRE-1964		0-10	DBTG	4.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
51-1	FRESNO	FRE-1964		0-10	DBTG	4.20		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
51-1	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	XRF	338132	4180930	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
52-2	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
52-2	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	334660	4173861	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
52-3	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	333624	4173847	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
52-3	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
57-1	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	333475	4173926	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
57-1	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	333475	4173926	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
51	FRESNO	FRE-1967		SURFACE	BIF	4.30	0.00	CD	VIS	332338	4175465	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
65-1	FRESNO	FRE-1967		0-10	DBTG	4.30	0.00	CD	VIS	335594	4174827	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
70-2	FRESNO	FRE-1967		0-10	DBTG	4.30	0.00	CD	VIS	333732	4175542	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
18-2	FRESNO	FRE-1969		0-10	DBTG	4.30	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
10-3	FRESNO	FRE-1972		0-10	DBTG	4.30	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
15-2	FRESNO	FRE-1974		0-10	DBTG	4.30	0.00	CD	VIS	333015	4175771	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
7-1B	FRESNO	FRE-1978		0-10	BIF	4.30	0.00	CD	XRF					Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Deepwell association, 2 to 15 percent slopes
142B	FRESNO	FRE-0814		40-50	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
153C	FRESNO	FRE-0814		10-20	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
154A	FRESNO	FRE-0814		20-30	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
74B	FRESNO	FRE-0815		10-20	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
9-1A	FRESNO	FRE-0982		SURFACE	BIF	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
68-3	FRESNO	FRE-0982		0-10	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-21-9	MADERA	MAD-1222		10-20	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-22-9	MADERA	MAD-1222		20-30	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-26-5	MADERA	MAD-1222		30-40	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5-12-2	MADERA	MAD-1223		50-60	DBTG	4.30		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
1531-1216	MADERA	MAD-1531	--	--	PRJPT	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-28-1	MADERA	MAD-0397		70-80	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
3-6-5	MADERA	MAD-0397		10-20	DBTG	4.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
3-6-6	MADERA	MAD-0397		10-20	DBTG	4.30	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
3-13-6	MADERA	MAD-0397		30-40	DBTG	4.30	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
2440-002-h	MONO	MNO-2440	CU-6	5-23	DBTG	4.30	0.00	CD	VIS	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
2440-001-e	MONO	MNO-2440	CU-6	0-5	DBTG	4.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-o	MONO	MNO-2440	CU-6	0-5	DBTG	4.30	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-002-k	MONO	MNO-2440	CU-6	5-23	DBTG	4.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-001-d	MONO	MNO-2440	CU-6	0-5	DBTG	4.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-005-c	MONO	MNO-2440	CU-6	30-35	DBTG	4.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-004-c	MONO	MNO-2440	CU-6	25-30	DBTG	4.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2440-004-a	MONO	MNO-2440	CU-6	25-30	DBTG	4.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-007-g	MONO	MNO-2440	CU-6	40-45	DBTG	4.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-009-i	MONO	MNO-2440	CU-7	0-5	DBTG	4.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-009-h	MONO	MNO-2440	CU-7	0-5	DBTG	4.30	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-521A	MONO	F144	SUR	LOCUS B	DBTG	4.30	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
349-583	MONO	F149	SUR	SUR	BIF	4.30	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-584	MONO	F149	SUR	SUR	BIF	4.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
574-77	MNO	MNO-0574	UNIT D	060-070	DEB	4.30	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-93	MNO	MNO-0574	UNIT D	070-080	DEB	4.30	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-102	MNO	MNO-0574	UNIT D	080-090	DEB	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-123	MNO	MNO-0574	UNIT D	100-110	DEB	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-134	MNO	MNO-0574	UNIT D	110-120	DEB	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-119	MNO	MNO-0574	UNIT D	100-110	DEB	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UF010	MNO	MNO-0574	UNIT F	60	BIF	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UG010	MNO	MNO-0574	UNIT G	57	BIF	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-65	MONO	A18	SUR	SUR	PRJPT	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-297B	MONO	A71	SUR	SUR	DBTG	4.30	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1311	FRESNO	FRE-1360		90-100	DBTG	4.30	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
275C	FRESNO	FRE-1360		0-10	DBTG	4.30	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
22-2	FRESNO	FRE-1363		10-20	DBTG	4.30	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-3	FRESNO	FRE-1365		20-30	DBTG	4.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
10-2	FRESNO	FRE-1365		40-50	DBTG	4.30	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
C	FRESNO	FRE-1440	59N/4E	40-50	DBTG	4.30	0.00	CD	VIS	307200	4101200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
371A	FRESNO	FRE-1964		10-20	DBTG	4.30	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
371A	FRESNO	FRE-1964		10-20	DBTG	4.30	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
351E	FRESNO	FRE-1964		90-100	DBTG	4.30	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
351E	FRESNO	FRE-1964		90-100	DBTG	4.30	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
7-1	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
7-1	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
12-2	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
12-2	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
14-3	FRESNO	FRE-1964		0-10	DBTG	4.30	2.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
14-3	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
55-2	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
55-2	FRESNO	FRE-1964		0-10	DBTG	4.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
9-1	FRESNO	FRE-1965		0-10	DBTG	4.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1A	FRESNO	FRE-1972		SURFACE	BIF	4.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
54-1	FRESNO	FRE-1975		10-40	DBTG	4.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5344-07	FRESNO	FRE-2164			DBTG	4.30	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5354-06	FRESNO	FRE-2168			DBTG	4.30	0.00	CD	XRF	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1537	FRESNO	FRE-0064	#7/60-70	60-70	FLKTL	4.30	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
140C	FRESNO	FRE-0814		20-30	DBTG	4.30	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
55-2	FRESNO	FRE-0982		0-10	DBTG	4.30	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2-15-8	MADERA	MAD-1222		0-10	DBTG	4.30	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-35	MADERA	MAD-1222		0-10	PRJPT	4.30	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
5-17-4	MADERA	MAD-1223		90-100	DBTG	4.30	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
1531-292	MADERA	MAD-1531	--	--	BIF	4.30	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
7-24-1	MADERA	MAD-0397		50-60	DBTG	4.30	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
3-17-1	MADERA	MAD-0397		50-60	DBTG	4.30	0.00	CD	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
2440-002-p	MONO	MNO-2440	CU-6	5-23	DBTG	4.30	0.00	CD	VIS	335849	4182571	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
2440-002-j	MONO	MNO-2440	CU-6	5-23	DBTG	4.30	0.00	CD	VIS	338529	4181901	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2440-001-p	MONO	MNO-2440	CU-6	0-5	DBTG	4.30	0.00	CD	XRF	337711	4181494	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
2440-007-b	MONO	MNO-2440	CU-6	40-45	DBTG	4.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-515A	MONO	F144	SUR	LOCUS A	DBTG	4.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-575	MONO	F149	SUR	SUR	BIF	4.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-24	MNO	MNO-0574	UNIT D	010-020	DEB	4.40	0.00	CD	VIS	334660	4173861	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
574-28	MNO	MNO-0574	UNIT D	020-030	DEB	4.40	0.00	CD	VIS	334751	4172992	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
574-30	MNO	MNO-0574	UNIT D	020-030	DEB	4.40	0.00	CD	VIS	333475	4173926	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
574-49	MNO	MNO-0574	UNIT D	040-050	DEB	4.40	0.00	CD	VIS	334780	4173546	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
574-57	MNO	MNO-0574	UNIT D	040-050	DEB	4.40	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
574-80	MNO	MNO-0574	UNIT D	060-070	DEB	4.40	0.00	CD	XRF	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
574-81	MNO	MNO-0574	UNIT D	060-070	DEB	4.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-84	MNO	MNO-0574	UNIT D	060-070	DEB	4.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-105	MNO	MNO-0574	UNIT D	080-090	DEB	4.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-128	MNO	MNO-0574	UNIT D	110-120	DEB	4.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-71	MNO	MNO-0574	UNIT D	050-060	DEB	4.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
UD007	MNO	MNO-0574	UNIT D	51	BIF	4.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
UG004	MNO	MNO-0574	UNIT G	26	BIF	4.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
SC001	MNO	MNO-0574	SURFACE	SURFACE	BIF	4.40	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
UB027	MNO	MNO-0577	UNIT B	65	CORE	4.40	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
349-265C	MONO	A57	SUR	SUR	DBTG	4.40	0.00	CD	XRF	338005	4181370	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
330J	FRESNO	FRE-1044		30-40	DBTG	4.40	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
346E	FRESNO	FRE-1044		60-70	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
315C	FRESNO	FRE-1044		60-70	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
218-1	FRESNO	FRE-1044		10-20	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1265	FRESNO	FRE-1360		10-20	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1270	FRESNO	FRE-1360		40-50	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1276	FRESNO	FRE-1360		90-100	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1321	FRESNO	FRE-1360		10-20	DBTG	4.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00512	FRESNO	FRE-1360		50	BIF	4.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1235	FRESNO	FRE-1360		50-60	DBTG	4.40	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
233D	FRESNO	FRE-1360		0-10	DBTG	4.40	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
1-1	FRESNO	FRE-1363		SURFACE	DBTG	4.40	0.00	CD	VIS	324600	4091320		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
63-3	FRESNO	FRE-1365		0-10	DBTG	4.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
B	FRESNO	FRE-1440	59N/4E	40-50	DBTG	4.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
B	FRESNO	FRE-1447	109S/99E	110-120	DBTG	4.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2077-50	FRESNO	FRE-1671	35N/10E	20-30	DBTG	4.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
00375	FRESNO	FRE-1964		40	PRJPT	4.40	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00375	FRESNO	FRE-1964		40	PRJPT	4.40	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
388A	FRESNO	FRE-1964		80-90	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
388A	FRESNO	FRE-1964		80-90	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
388D	FRESNO	FRE-1964		80-90	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
388D	FRESNO	FRE-1964		80-90	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
330E	FRESNO	FRE-1964		30-40	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
330E	FRESNO	FRE-1964		30-40	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
433F	FRESNO	FRE-1964		110-120	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
433F	FRESNO	FRE-1964		110-120	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
437E	FRESNO	FRE-1964		150-160	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
437E	FRESNO	FRE-1964		150-160	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-2	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
3-2	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
12-3	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
12-3	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
13-2	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
13-2	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
44-2	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
44-2	FRESNO	FRE-1964		0-10	DBTG	4.40	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
44-1	FRESNO	FRE-1965		0-10	FLKTL	4.40	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
55-1	FRESNO	FRE-1965		0-10	BIF	4.40	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5-2	FRESNO	FRE-1971		0-10	DBTG	4.40	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
8-1	FRESNO	FRE-1971		0-10	FLKTL	4.40	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
16-2	FRESNO	FRE-1978		0-10	DBTG	4.40	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5366	FRESNO	FRE-2169			BIF	4.40	0.00	CD	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
142A	FRESNO	FRE-0814		40-50	DBTG	4.40	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
142C	FRESNO	FRE-0814		40-50	DBTG	4.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
43E	FRESNO	FRE-0815		30-40	DBTG	4.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
9-1B	FRESNO	FRE-0982		SURFACE	BIF	4.40	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
63-2	FRESNO	FRE-0982		0-10	DBTG	4.40	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
73-1	FRESNO	FRE-0982		10-42	DBTG	4.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-23-4	MADERA	MAD-1222		20-30	DBTG	4.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
7-22-6	MADERA	MAD-1222		20-30	DBTG	4.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
7-30	MADERA	MAD-0397		90-100	DBTG	4.40	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
3-13-9	MADERA	MAD-0397		30-40	DBTG	4.40	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
3-17-2	MADERA	MAD-0397		50-60	DBTG	4.40	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2439-002-a	MONO	MNO-2439	SC	SUR	DBTG	4.40	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-m	MONO	MNO-2440	CU-6	0-5	DBTG	4.40	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2440-001-h	MONO	MNO-2440	CU-6	0-5	DBTG	4.40	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2440-002-l	MONO	MNO-2440	CU-6	5-23	DBTG	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2440-006-f	MONO	MNO-2440	CU-6	35-40	DBTG	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2440-009-f	MONO	MNO-2440	CU-7	0-5	DBTG	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2440-010-e	MONO	MNO-2440	CU-7	5-22	DBTG	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
EU3	TULARE	TUL-1227		100-110	DBTG	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
5182	TULARE	TUL-1256			DBTG	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-559	MONO	F147	SUR	LOCUS A	BIF	4.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
574-29	MNO	MNO-0574	UNIT D	020-030	DEB	4.40	0.00	CD	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
574-31	MNO	MNO-0574	UNIT D	020-030	DEB	4.40	0.00	CD	VIS	338327	4182556	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-37	MNO	MNO-0574	UNIT D	030-040	DEB	4.40	0.00	CD	XRF	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
574-40	MNO	MNO-0574	UNIT D	030-040	DEB	4.40	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
574-42	MNO	MNO-0574	UNIT D	030-040	DEB	4.40	0.00	CD	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-44	MNO	MNO-0574	UNIT D	030-040	DEB	4.40	0.00	CD	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-59	MNO	MNO-0574	UNIT D	040-050	DEB	4.40		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
574-75	MNO	MNO-0574	UNIT D	050-060	DEB	4.50	0.00	CD	XRF	338132	4180930	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
574-108	MNO	MNO-0574	UNIT D	090-100	DEB	4.50	9.70	CD	XRF	338132	4180930	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
574-110	MNO	MNO-0574	UNIT D	090-100	DEB	4.50	0.00	CD-LM	XRF	314520	4193150		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes
574-121	MNO	MNO-0574	UNIT D	100-110	DEB	4.50	0.00	CD	VIS	336421	4174071	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
574-113	MNO	MNO-0574	UNIT D	100-110	DEB	4.50	0.00	CD	VIS	334127	4172057	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UF006	MNO	MNO-0574	UNIT F	040-050	BIF	4.50	0.00	CD	VIS	333624	4173847	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UG011	MNO	MNO-0574	UNIT G	59	BIF	4.50	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UG012	MNO	MNO-0574	UNIT G	60	BIF	4.50	0.00	CD	VIS	334780	4173546	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UG014	MNO	MNO-0574	UNIT G	61	BIF	4.50	0.00	CD	VIS	333453	4175164	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
UG018	MNO	MNO-0574	UNIT G	61	BIF	4.50	0.00	CD	VIS	340283	4180894	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
UG016	MNO	MNO-0574	UNIT G	70	BIF	4.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
UH001	MNO	MNO-0574	UNIT H	000-010	BIF	4.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
SC006	MNO	MNO-0574	SURFACE	SURFACE	BIF	4.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-133	MNO	MNO-0574	UNIT D	110-120	DEB	4.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-08A	MONO	A4	SUR	SUR	DBTG	4.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
346D	FRESNO	FRE-1044		60-70	DBTG	4.50		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
390E	FRESNO	FRE-1044		30-40	DBTG	4.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1273	FRESNO	FRE-1360		70-80	DBTG	4.50	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1332	FRESNO	FRE-1360		170-180	DBTG	4.50	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1333	FRESNO	FRE-1360		180-190	DBTG	4.50	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
1335	FRESNO	FRE-1360		180-190	DBTG	4.50	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
1336	FRESNO	FRE-1360		180-190	DBTG	4.50	0.00	CD	VIS	337217	4173913	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
18-1	FRESNO	FRE-1362		0-10	DBTG	4.50	3.50	CD	XRF	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
4-3	FRESNO	FRE-1365		30-40	DBTG	4.50	0.00	CD	XRF	336957	4172892	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
7-1	FRESNO	FRE-1365		20-30	DBTG	4.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
9-3	FRESNO	FRE-1365		30-40	DBTG	4.50	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
56-1	FRESNO	FRE-1365		0-10	DBTG	4.50	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
D	FRESNO	FRE-1440	59N/4E	70-80	DBTG	4.50	0.00	CD	VIS	336565	4174674	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
E	FRESNO	FRE-1447	109S/99E	30-40	DBTG	4.50	0.00	CD	VIS	336565	4174674	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
A	FRESNO	FRE-1480	0N/0E	20-30	DBTG	4.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
968-4	FRESNO	FRE-1671	UNIT C	10-20	DBTG	4.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00285	FRESNO	FRE-1964		10	PRJPT	4.50	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00285	FRESNO	FRE-1964		10	PRJPT	4.50	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00420	FRESNO	FRE-1964		80	BIF	4.50	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00420	FRESNO	FRE-1964		80	BIF	4.50	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
442B	FRESNO	FRE-1964		10-20	DBTG	4.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
442B	FRESNO	FRE-1964		10-20	DBTG	4.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
433A	FRESNO	FRE-1964		110-120	DBTG	4.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
433A	FRESNO	FRE-1964		110-120	DBTG	4.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
433B	FRESNO	FRE-1964		110-120	DBTG	4.50	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
433B	FRESNO	FRE-1964		110-120	DBTG	4.50	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
437D	FRESNO	FRE-1964		150-160	DBTG	4.50	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
437D	FRESNO	FRE-1964		150-160	DBTG	4.50	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2A	FRESNO	FRE-1964		SURFACE	PRJPT	4.50	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2A	FRESNO	FRE-1964		SURFACE	PRJPT	4.50	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
13-1	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
13-1	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
15-3	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
15-3	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
30-1	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
30-1	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
39-3	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
39-3	FRESNO	FRE-1964		0-10	DBTG	4.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
14-1	FRESNO	FRE-1971		0-10	DBTG	4.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
46-2	FRESNO	FRE-1975		0-10	DBTG	4.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
58-2	FRESNO	FRE-1975		0-10	DBTG	4.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7A	FRESNO	FRE-1976		SURFACE	BIF	4.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1047	FRESNO	FRE-0064	#2/30-40	30-40	PRJPT	4.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
73E	FRESNO	FRE-0815		0-10	DBTG	4.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2-3-9	MADERA	MAD-1222		10	DBTG	4.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-4-1	MADERA	MAD-1222		15	DBTG	4.50	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-26-2	MADERA	MAD-1222		30-40	DBTG	4.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1531-1157	MADERA	MAD-1531	--	--	PRJPT	4.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2-13-5	MADERA	MAD-0223		70-80	DBTG	4.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-24-5	MADERA	MAD-0397		50-60	DBTG	4.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
7-28-4	MADERA	MAD-0397		70-80	DBTG	4.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
7-30-3	MADERA	MAD-0397		90-100	DBTG	4.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2440-003-b	MONO	MNO-2440	CU-6	23-25	DBTG	4.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2440-007-c	MONO	MNO-2440	CU-6	40-45	DBTG	4.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
5262-04	TULARE	TUL-1253			DBTG	4.50	0.00	CD	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1547-24-702	TULARE	TUL-0024		16"	PRJPT	4.50	0.00	CD	VIS	337376	4183925	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1350-24-659A	TULARE	TUL-0024		12-18"	PRJPT	4.50		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-511C	MONO	F143	SUR	SUR	DBTG	4.60	0.00	CD	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
349-554	MONO	F147	SUR	LOCUS A	BIF	4.60	0.00	CD	VIS	335377	4174264	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-573	MONO	F149	SUR	SUR	PRJPT	4.60	0.00	CD	VIS	333911	4175359	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-611	MONO	F155	SUR	SUR	BIF	4.60	0.00	CD	VIS	335594	4174827	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-617	MONO	F156	SUR	SUR	BIF	4.60	0.00	CD	VIS	333292	4175497	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
574-13	MNO	MNO-0574	UNIT D	010-020	DEB	4.60	0.00	CD	VIS	332902	4175501	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
574-21	MNO	MNO-0574	UNIT D	010-020	DEB	4.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
574-32	MNO	MNO-0574	UNIT D	020-030	DEB	4.60	0.00	CD	XRF	337928	4186805	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Cryopsamments, 0 to 15 percent slopes.
574-33	MNO	MNO-0574	UNIT D	020-030	DEB	4.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-36	MNO	MNO-0574	UNIT D	020-030	DEB	4.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-38	MNO	MNO-0574	UNIT D	030-040	DEB	4.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-45	MNO	MNO-0574	UNIT D	030-040	DEB	4.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-23	MNO	MNO-0574	UNIT D	010-020	DEB	4.60	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
574-82	MNO	MNO-0574	UNIT D	060-070	DEB	4.60	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
574-117	MNO	MNO-0574	UNIT D	100-110	DEB	4.60	0.00	CD-SR	XRF	333482	4167240			Holocene	latest-Holo	Conway-Aquents-Watterson complex, 0 to 2 percent slopes
574-132	MNO	MNO-0574	UNIT D	110-120	DEB	4.60	0.00	CD	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
574-SC002	MNO	MNO-0574	SURFACE	SURFACE	PPT	4.60	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
UF008	MNO	MNO-0574	UNIT F	55	BIF	4.60	0.00	CD	XRF	337979	4181145	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
UG015	MNO	MNO-0574	UNIT G	67	BIF	4.60	5.80	CD	VIS	337243	4174655	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
UH010	MNO	MNO-0574	UNIT H	48	BIF	4.60	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-59D	MONO	A16	SUR	SUR	DBTG	4.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-265D	MONO	A57	SUR	SUR	DBTG	4.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00111	FRESNO	FRE-1044		SURFACE	PRJPT	4.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00407	FRESNO	FRE-1044		SURFACE	PRJPT	4.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
306B	FRESNO	FRE-1044		20-30	DBTG	4.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
212-1	FRESNO	FRE-1044		10-20	DBTG	4.60	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
212-3	FRESNO	FRE-1044		10-20	DBTG	4.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
218-5	FRESNO	FRE-1044		10-20	DBTG	4.60	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1300	FRESNO	FRE-1360		90-100	DBTG	4.60	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1324	FRESNO	FRE-1360		10-20	DBTG	4.60	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
1325	FRESNO	FRE-1360		10-20	DBTG	4.60	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1334	FRESNO	FRE-1360		180-190	DBTG	4.60	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
239A	FRESNO	FRE-1360		0-10	DBTG	4.60	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
246A	FRESNO	FRE-1360		0-10	DBTG	4.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
246C	FRESNO	FRE-1360		0-10	DBTG	4.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
328E	FRESNO	FRE-1360		0-10	DBTG	4.60	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
3-3	FRESNO	FRE-1362		20-30	FLKTL	4.60	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
6-1	FRESNO	FRE-1363		20-30	DBTG	4.60	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
59-2	FRESNO	FRE-1365		10-75	DBTG	4.60	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
83-2	FRESNO	FRE-1365		0-10	DBTG	4.60	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
C	FRESNO	FRE-1440	59N/4E	60-70	DBTG	4.60	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
D	FRESNO	FRE-1440	59N/4E	60-70	DBTG	4.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00260	FRESNO	FRE-1964		10	PRJPT	4.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00260	FRESNO	FRE-1964		10	PRJPT	4.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
413F	FRESNO	FRE-1964		40-50	DBTG	4.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
413F	FRESNO	FRE-1964		40-50	DBTG	4.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
433E	FRESNO	FRE-1964		110-120	DBTG	4.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
433E	FRESNO	FRE-1964		110-120	DBTG	4.60	0.00	CD	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
48-1	FRESNO	FRE-1964		0-10	DBTG	4.60	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
48-1	FRESNO	FRE-1964		0-10	DBTG	4.60	0.00	CD	XRF	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
33-1	FRESNO	FRE-1967		0-10	DBTG	4.60		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
39-3	FRESNO	FRE-1973		0-10	DBTG	4.70	0.00	CD	VIS	337015	4174010	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
57-1	FRESNO	FRE-1975		10-95	DBTG	4.70	0.00	CD	VIS	335091	4172864	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
13-1	FRESNO	FRE-1978		0-10	DBTG	4.70	0.00	CD	VIS	333624	4173847	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
14-3	FRESNO	FRE-1979		0-10	DBTG	4.70	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1645	FRESNO	FRE-0064	Unit 5	40-50	FLKTL	4.70	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
122C	FRESNO	FRE-0815		0-10	DBTG	4.70	0.00	CD	VIS	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
0-1	MADERA	MAD-1222		SURFACE	BIF	4.70	0.00	CD	XRF	341074	4181389	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
2-23-2	MADERA	MAD-1222		20-30	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-20-5	MADERA	MAD-1222		10-20	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-10	MADERA	MAD-1223		20-30	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1531-102	MADERA	MAD-1531	--	--	BIF	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-24-3	MADERA	MAD-0397		50-60	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-28-5	MADERA	MAD-0397		70-80	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-s	MONO	MNO-2439	SC	SUR	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-005-g	MONO	MNO-2440	CU-6	30-35	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-010-g	MONO	MNO-2440	CU-7	5-22	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-010-i	MONO	MNO-2440	CU-7	5-22	DBTG	4.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-010-f	MONO	MNO-2440	CU-7	5-22	DBTG	4.70		Casa Diablo		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
EU1	TULARE	TUL-1227		60-70	DBTG	4.70	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-511D	MONO	F143	SUR	SUR	DBTG	4.70	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-518	MONO	F144	SUR	SUR	PRJPT	4.70	0.00	CD	XRF	338005	4181370	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
349-534B	MONO	F144	SUR	LOCUS D	DBTG	4.70	0.00	CD-SR	XRF	365910	4133810		11	Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
349-588	MONO	F149	SUR	LOCUS A	BIF	4.70	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-629	MONO	F156	SUR	SUR	BIF	4.70	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
349-630	MONO	F156	SUR	SUR	BIF	4.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-9	MNO	MNO-0574	UNIT D	000-010	DEB	4.70	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-35	MNO	MNO-0574	UNIT D	020-030	DEB	4.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-39	MNO	MNO-0574	UNIT D	030-040	DEB	4.70	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-48	MNO	MNO-0574	UNIT D	030-040	DEB	4.70	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-68	MNO	MNO-0574	UNIT D	050-060	DEB	4.70	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-10	MNO	MNO-0574	UNIT D	000-010	DEB	4.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-15	MNO	MNO-0574	UNIT D	010-020	DEB	4.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-60	MNO	MNO-0574	UNIT D	040-050	DEB	4.70	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-70	MNO	MNO-0574	UNIT D	050-060	DEB	4.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
574-74	MNO	MNO-0574	UNIT D	050-060	DEB	4.70	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
574-127	MNO	MNO-0574	UNIT D	110-120	DEB	4.70	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
574-130	MNO	MNO-0574	UNIT D	110-120	DEB	4.70	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-131	MNO	MNO-0574	UNIT D	110-120	DEB	4.70	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
UG020	MNO	MNO-0574	UNIT G	64	BIF	4.70	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
UB021	MNO	MNO-0577	UNIT B	61	CORE	4.70	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
349-52A	MONO	A14	SUR	SUR	DBTG	4.70	0.00	CD	VIS	309200	4103600		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
390G	FRESNO	FRE-1044		30-40	DBTG	4.70	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1275	FRESNO	FRE-1360		70-80	DBTG	4.70	0.00	CD	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1314	FRESNO	FRE-1360		50-60	DBTG	4.70	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
58E	FRESNO	FRE-1363		0-10	DBTG	4.70	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
125C	FRESNO	FRE-1363		0-10	DBTG	4.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-1	FRESNO	FRE-1363		30-40	DBTG	4.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
10-3	FRESNO	FRE-1365		40-50	DBTG	4.70	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
73-1	FRESNO	FRE-1365		10-90	DBTG	4.70	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
E	FRESNO	FRE-1440	59N/4E	40-50	DBTG	4.70	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
C	FRESNO	FRE-1440	59N/4E	50-60	DBTG	4.70	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
964-1	FRESNO	FRE-1671	UNIT C	0-10	DBTG	4.70	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00348	FRESNO	FRE-1964		100	BIF	4.70	0.00	CD	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00348	FRESNO	FRE-1964		100	BIF	4.70	0.00	CD	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
379D	FRESNO	FRE-1964		40-50	DBTG	4.80	0.00	CD-LM	XRF	314520	4193150		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes
379D	FRESNO	FRE-1964		40-50	DBTG	4.80	0.00	CD	VIS	335363	4172257	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
371B	FRESNO	FRE-1964		10-20	DBTG	4.80	0.00	CD	VIS	334127	4172057	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
371B	FRESNO	FRE-1964		10-20	DBTG	4.80	0.00	CD	VIS	333911	4175359	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
408B	FRESNO	FRE-1964		10-20	DBTG	4.80	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
408B	FRESNO	FRE-1964		10-20	DBTG	4.80	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
424F	FRESNO	FRE-1964		80-90	DBTG	4.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
424F	FRESNO	FRE-1964		80-90	DBTG	4.80	1.70	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1B	FRESNO	FRE-1964		SURFACE	BIF	4.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1B	FRESNO	FRE-1964		SURFACE	BIF	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
13-3	FRESNO	FRE-1964		0-10	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
13-3	FRESNO	FRE-1964		0-10	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
64-2	FRESNO	FRE-1967		0-10	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1282	FRESNO	FRE-0064	#3/40-50	40-50	PRJPT	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1669	FRESNO	FRE-0064	Unit 5	60-70	FLKTL	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1689	FRESNO	FRE-0064	Unit 5	70-80	FLKTL	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1439	FRESNO	FRE-0064	#7/0-10	0-10	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
80D	FRESNO	FRE-0815		20-30	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2-21	MADERA	MAD-1222		10-20	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-23-3	MADERA	MAD-1222		20-30	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-4-4	MADERA	MAD-1222		15	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-22	MADERA	MAD-1222		20-30	DBTG	4.80		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
1531-1216	MADERA	MAD-1531	--	--	PRJPT	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1531-1157	MADERA	MAD-1531	--	--	PRJPT	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-30-4	MADERA	MAD-0397		90-100	DBTG	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5103	TULARE	TUL-1240			BIF	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5103	TULARE	TUL-1240			BIF	4.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5103	TULARE	TUL-1240			BIF	4.80	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
5103	TULARE	TUL-1240			BIF	4.80	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
5312-04	TULARE	TUL-1265			DBTG	4.80	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
349-511B	MONO	F143	SUR	SUR	DBTG	4.80	0.00	CD	VIS	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
349-579	MONO	F149	SUR	SUR	BIF	4.80	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
349-599A	MONO	F152	SUR	SUR	DBTG	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-609	MONO	F155	SUR	SUR	PRJPT	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-716	MONO	F165	SUR	SUR	DBTG	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-1	MNO	MNO-0574	UNIT D	000-010	DEB	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-4	MNO	MNO-0574	UNIT D	000-010	DEB	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-16	MNO	MNO-0574	UNIT D	010-020	DEB	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-17	MNO	MNO-0574	UNIT D	010-020	DEB	4.80	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
574-41	MNO	MNO-0574	UNIT D	030-040	DEB	4.80	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-83	MNO	MNO-0574	UNIT D	060-070	DEB	4.80	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-109	MNO	MNO-0574	UNIT D	090-100	DEB	4.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
574-11	MNO	MNO-0574	UNIT D	000-010	DEB	4.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
UG009	MNO	MNO-0574	UNIT G	59	BIF	4.80	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UH002	MNO	MNO-0574	UNIT H	8	BIF	4.80	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
UH008	MNO	MNO-0574	UNIT H	40	BIF	4.80	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UA004	MNO	MNO-0574	UNIT A	010-020	BIF	4.80	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UD013	MNO	MNO-0577	UNIT D	090-100	CORE	4.80	0.00	CD	XRF	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-58E	MONO	A16	SUR	SUR	DBTG	4.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
349-59E	MONO	A16	SUR	SUR	DBTG	4.80	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
00115	FRESNO	FRE-1044		SURFACE	BIF	4.80	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
00494	FRESNO	FRE-1044		30	BIF	4.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
330C	FRESNO	FRE-1044		30-40	DBTG	4.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
212-2	FRESNO	FRE-1044		10-20	DBTG	4.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
1312	FRESNO	FRE-1360		50-60	DBTG	4.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00339	FRESNO	FRE-1360		10	BIF	4.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00692	FRESNO	FRE-1360		70	BIF	4.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
1232	FRESNO	FRE-1360		50-60	DBTG	4.80	0.00	CD	VIS	337913	4182811	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1237	FRESNO	FRE-1360		90-105	DBTG	4.80	0.00	CD	VIS	337376	4183925	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
275B	FRESNO	FRE-1360		0-10	DBTG	4.80	0.00	CD	XRF	337376	4183925	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1-3	FRESNO	FRE-1362		0-10	DBTG	4.80	0.00	CD	XRF	338647	4180281	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
60B	FRESNO	FRE-1363		0-10	DBTG	4.90	0.00	CD	VIS	337926	4180777	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
11-1	FRESNO	FRE-1363		20-30	DBTG	4.90	0.00	CD	XRF	338132	4180930	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
74-1	FRESNO	FRE-1365		0-10	DBTG	4.90	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
83-3	FRESNO	FRE-1365		0-10	DBTG	4.90	0.00	CD	VIS	335091	4172864	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
84-3	FRESNO	FRE-1365		0-10	DBTG	4.90	0.00	CD	VIS	334660	4173861	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
A	FRESNO	FRE-1440	59N/4E	60-70	DBTG	4.90	0.00	CD	VIS	334729	4174822	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
4-2	FRESNO	FRE-1963		0-10	DBTG	4.90	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
00207	FRESNO	FRE-1964		10	PRJPT	4.90	0.00	CD	VIS	333015	4175771	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
00207	FRESNO	FRE-1964		10	PRJPT	4.90	0.00	CD	XRF	337928	4186805	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Cryopsamments, 0 to 15 percent slopes.
00488	FRESNO	FRE-1964		30	PRJPT	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00488	FRESNO	FRE-1964		30	PRJPT	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00463	FRESNO	FRE-1964		SURFACE	BIF	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00463	FRESNO	FRE-1964		SURFACE	BIF	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
15-2	FRESNO	FRE-1964		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
15-2	FRESNO	FRE-1964		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
21-1	FRESNO	FRE-1964		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
21-1	FRESNO	FRE-1964		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
41	FRESNO	FRE-1964		0-10	BIF	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
41	FRESNO	FRE-1964		0-10	BIF	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
41-1	FRESNO	FRE-1965		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
13-1	FRESNO	FRE-1971		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
21-3	FRESNO	FRE-1974		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
22-1	FRESNO	FRE-1974		0-10	DBTG	4.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
51-2	FRESNO	FRE-1975		0-10	DBTG	4.90	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
60-1	FRESNO	FRE-1975		0-10	DBTG	4.90	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
76-1	FRESNO	FRE-1976		0-10	DBTG	4.90	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
5344-03	FRESNO	FRE-2164			DBTG	4.90	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
33E	FRESNO	FRE-0814		0-10	DBTG	4.90	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
41A	FRESNO	FRE-0814		20-30	DBTG	4.90	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
19	FRESNO	FRE-0815		0-10	BIF	4.90	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
50-3	FRESNO	FRE-0982		0-10	DBTG	4.90	0.00	CD	VIS	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
2-15-2	MADERA	MAD-1222		0-10	DBTG	4.90	0.00	CD	XRF	338005	4181370	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
2-15-7	MADERA	MAD-1222		0-10	DBTG	4.90	0.00	CD	VIS	334867	4175056	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
2-29-7	MADERA	MAD-1222		30-40	DBTG	4.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
7-11-2	MADERA	MAD-1222		0-10	DBTG	4.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
7-11-4	MADERA	MAD-1222		0-10	DBTG	4.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
7-11-5	MADERA	MAD-1222		0-10	DBTG	4.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
7-26-1	MADERA	MAD-1222		30-40	DBTG	4.90	0.00	CD	XRF	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-4-4	MADERA	MAD-0223		10-20	DBTG	4.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-6-6	MADERA	MAD-0397		10-20	DBTG	4.90	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-027-d	MONO	MNO-2439	98-1	20-30	DBTG	4.90	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2440-001-f	MONO	MNO-2440	CU-6	0-5	DBTG	4.90	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2440-005-f	MONO	MNO-2440	CU-6	30-35	DBTG	4.90	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1519-24-1233	TULARE	TUL-0024		20"	PRJPT	4.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-577	MONO	F149	SUR	SUR	BIF	4.90	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
349-586	MONO	F149	SUR	SUR	BIF	4.90	0.00	CD	VIS	309000	4102320		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-20	MNO	MNO-0574	UNIT D	010-020	DEB	4.90	0.00	CD	VIS	308900	4105000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
574-25	MNO	MNO-0574	UNIT D	020-030	DEB	4.90	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
574-43	MNO	MNO-0574	UNIT D	030-040	DEB	4.90	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
574-111	MNO	MNO-0574	UNIT D	090-100	DEB	4.90	0.00	CD	XRF	348700	4117450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
UF003	MNO	MNO-0574	UNIT F	020-030	BIF	4.90	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UE026	MNO	MNO-0574	UNIT E	050-060	BIF	4.90	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
SC003	MNO	MNO-0574	SURFACE	SURFACE	BIF	4.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-64A	MONO	A18	SUR	SUR	DBTG	4.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
00506	FRESNO	FRE-1044		130	PRJPT	4.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
218-4	FRESNO	FRE-1044		10-20	DBTG	4.90	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
1319	FRESNO	FRE-1360		80-90	DBTG	4.90	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00638	FRESNO	FRE-1360		80	BIF	4.90	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
259C	FRESNO	FRE-1360		0-10	DBTG	4.90	0.00	CD	VIS	337376	4183925	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
275E	FRESNO	FRE-1360		0-10	DBTG	4.90	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
3-2	FRESNO	FRE-1362		20-30	DBTG	4.90		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
58A	FRESNO	FRE-1363		0-10	DBTG	5.00	0.00	CD-SR	XRF	334540	4166800		11	Holocene	late-Holo	Watterson family-Torriorthentic Haploxerolls complex, 5 to 15 percent slopes.
79-2	FRESNO	FRE-1365		0-10	DBTG	5.00	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1890	FRESNO	FRE-1671	35N/11E	15	PRJPT	5.00	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
328	FRESNO	FRE-1671	UNIT J	40	BIF	5.00	7.10	CD	VIS	334604	4172997	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
388B	FRESNO	FRE-1964		80-90	DBTG	5.00	0.00	CD	VIS	333292	4175497	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
388B	FRESNO	FRE-1964		80-90	DBTG	5.00	0.00	CD	VIS	332902	4175501	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
21-3	FRESNO	FRE-1964		0-10	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
21-3	FRESNO	FRE-1964		0-10	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
13-2	FRESNO	FRE-1970		0-10	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
26-1	FRESNO	FRE-1980		10-20	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5355-04	FRESNO	FRE-2169			DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
35	FRESNO	FRE-0814		0-10	BIF	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
157	FRESNO	FRE-0814		0-10	BIF	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
8-1	FRESNO	FRE-0982		10-20	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-21-5	MADERA	MAD-1222		10-20	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2-21-6	MADERA	MAD-1222		10-20	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-23-7	MADERA	MAD-1222		20-30	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-29-4	MADERA	MAD-1222		30-40	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-1-1	MADERA	MAD-0223		50-60	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-6-3	MADERA	MAD-0397		10-20	DBTG	5.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-30-1	MADERA	MAD-0397		90-100	DBTG	5.00	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
EU1	TULARE	TUL-1227		40-50	DBTG	5.00	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1350-24-659B	TULARE	TUL-0024		12-18"	PRJPT	5.00	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-528	MONO	F144	SUR	LOCUS C	BIF	5.00	0.00	CD	VIS	337753	4173666	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-623	MONO	F156	SUR	SUR	BIF	5.00	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-14	MNO	MNO-0574	UNIT D	010-020	DEB	5.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
UF011	MNO	MNO-0574	UNIT F	61	BIF	5.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-58C	MONO	A16	SUR	SUR	DBTG	5.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-58D	MONO	A16	SUR	SUR	DBTG	5.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
15-2	FRESNO	FRE-1362		0-10	DBTG	5.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
11-3	FRESNO	FRE-1365		50-60	DBTG	5.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
61-1	FRESNO	FRE-1365		0-10	DBTG	5.00	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
77-3	FRESNO	FRE-1365		0-10	DBTG	5.00	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1440	59N/4E	70-80	DBTG	5.00	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2045	FRESNO	FRE-1671	38N/10E	15	PRJPT	5.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
00523	FRESNO	FRE-1964		50	BIF	5.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
00523	FRESNO	FRE-1964		50	BIF	5.00	0.00	CD	VIS	308900	4105000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
388C	FRESNO	FRE-1964		80-90	DBTG	5.00	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
388C	FRESNO	FRE-1964		80-90	DBTG	5.00	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
388F	FRESNO	FRE-1964		80-90	DBTG	5.00	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
388F	FRESNO	FRE-1964		80-90	DBTG	5.00	0.00	CD	VIS	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
408A	FRESNO	FRE-1964		10-20	DBTG	5.00	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
408A	FRESNO	FRE-1964		10-20	DBTG	5.00	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
413E	FRESNO	FRE-1964		40-50	DBTG	5.00	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
413E	FRESNO	FRE-1964		40-50	DBTG	5.00	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
437A	FRESNO	FRE-1964		150-160	DBTG	5.00	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
437A	FRESNO	FRE-1964		150-160	DBTG	5.00	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
36-2	FRESNO	FRE-1964		SURFACE	DBTG	5.00	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
36-2	FRESNO	FRE-1964		SURFACE	DBTG	5.00	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
59-1	FRESNO	FRE-1967		0-10	DBTG	5.00	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
11-1	FRESNO	FRE-1978		0-10	DBTG	5.00	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
28-1	FRESNO	FRE-1978		0-10	DBTG	5.00	0.00	CD	VIS	337376	4183925	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
28-2	FRESNO	FRE-1978		0-10	DBTG	5.00	0.00	CD	XRF	339137	4184373	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
116C	FRESNO	FRE-0815		0-10	DBTG	5.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
6-2	FRESNO	FRE-0982		20-30	DBTG	5.10	2.50	CD	VIS	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-21-4	MADERA	MAD-1222		10-20	DBTG	5.10	0.00	CD	VIS	334751	4172992	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
2-29-6	MADERA	MAD-1222		30-40	DBTG	5.10	0.00	CD	VIS	333590	4175444	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
7-22-5	MADERA	MAD-1222		20-30	DBTG	5.10	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
7-22-7	MADERA	MAD-1222		20-30	DBTG	5.10	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
7-22-8	MADERA	MAD-1222		20-30	DBTG	5.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
7-26-7	MADERA	MAD-1222		30-40	DBTG	5.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
5-7-9	MADERA	MAD-1223		30-40	DBTG	5.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2-16-1	MADERA	MAD-0223		90-100	DBTG	5.10	5.20	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2-18-1	MADERA	MAD-0223		110-120	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-18-3	MADERA	MAD-0223		110-120	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-6-1	MADERA	MAD-0397		10-20	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-28-9	MADERA	MAD-0397		70-80	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
3-6-7	MADERA	MAD-0397		10-20	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-026-g	MONO	MNO-2439	98-1	10-20	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-028-b	MONO	MNO-2439	98-1	30-40	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-030-c	MONO	MNO-2439	98-2	36-47	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5178	TULARE	TUL-1248			FLKTL	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5311-05	TULARE	TUL-1264			DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-515B	MONO	F144	SUR	LOCUS A	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-578	MONO	F149	SUR	SUR	BIF	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-710	MONO	F163	SUR	SUR	BIF	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-5	MNO	MNO-0574	UNIT D	000-010	DEB	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-265A	MONO	A57	SUR	SUR	DBTG	5.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00420	FRESNO	FRE-1044		80	BIF	5.10	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
00464	FRESNO	FRE-1044		68	PREFORM	5.10	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
411F	FRESNO	FRE-1044		60-70	DBTG	5.10	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1266	FRESNO	FRE-1360		10-20	DBTG	5.10	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
1301	FRESNO	FRE-1360		120-130	DBTG	5.10	0.00	CD	VIS	337217	4173913	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
242A	FRESNO	FRE-1360		0-10	DBTG	5.10	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
246B	FRESNO	FRE-1360		0-10	DBTG	5.10	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
275A	FRESNO	FRE-1360		0-10	DBTG	5.10	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
8-1	FRESNO	FRE-1363		40-50	DBTG	5.10	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
9-2	FRESNO	FRE-1363		50-60	DBTG	5.10	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
76-1	FRESNO	FRE-1365		0-10	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
D	FRESNO	FRE-1440	59N/4E	50-60	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
B	FRESNO	FRE-1447	109S/99E	0-10	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1180-28	FRESNO	FRE-1671	UNIT J	100-110	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00533	FRESNO	FRE-1964		18	BIF	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00533	FRESNO	FRE-1964		18	BIF	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
424B	FRESNO	FRE-1964		80-90	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
424B	FRESNO	FRE-1964		80-90	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
14-2	FRESNO	FRE-1970		10-56	DBTG	5.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
15-1	FRESNO	FRE-1978		10-35	DBTG	5.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
17-1	FRESNO	FRE-1979		0-10	DBTG	5.10	0.00	CD	VIS	308900	4105220		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5354-08	FRESNO	FRE-2168			DBTG	5.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-3-2	MADERA	MAD-1222		10	DBTG	5.10	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-15-6	MADERA	MAD-1222		0-10	DBTG	5.10	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2-21-2	MADERA	MAD-1222		10-20	DBTG	5.10	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-23	MADERA	MAD-1222		20-30	DBTG	5.10	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-23-1	MADERA	MAD-1222		20-30	DBTG	5.10	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-23-8	MADERA	MAD-1222		20-30	DBTG	5.10	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
2-4-1	MADERA	MAD-0223		76	PRJPT	5.10		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2-8-3	MADERA	MAD-0223		30-40	DBTG	5.20	0.00	CD-SR	XRF	334540	4166800		11	Holocene	late-Holo	Watterson family-Torriorthentic Haploxerolls complex, 5 to 15 percent slopes.
2-8-6	MADERA	MAD-0223		30-40	DBTG	5.20	0.00	CD	VIS	337188	4173525	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
7-18-6	MADERA	MAD-0397		30-40	DBTG	5.20	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
7-28-3	MADERA	MAD-0397		70-80	DBTG	5.20	0.00	CD	XRF	334110	4172229	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
3-17-8	MADERA	MAD-0397		50-60	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-008-a	MONO	MNO-2439	SS-A5	SUR	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-l	MONO	MNO-2439	SC	SUR	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-g	MONO	MNO-2439	SC	SUR	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-009-a	MONO	MNO-2439	SS-A6	SUR	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-024-c	MONO	MNO-2439	SS-J2	SUR	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-028-a	MONO	MNO-2439	98-1	30-40	DBTG	5.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2440-005-i	MONO	MNO-2440	CU-6	30-35	DBTG	5.20	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5032	TULARE	TUL-1198			DBTG	5.20	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
1353-24-1163A	TULARE	TUL-0024		12-18"	PRJPT	5.20	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
1353-24-1163B	TULARE	TUL-0024		12-18"	PRJPT	5.20	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
UD008	MNO	MNO-0574	UNIT D	58	BIF	5.20	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
UA003	MNO	MNO-0577	UNIT A	010-020	CORE	5.20	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
00507	FRESNO	FRE-1044		140	BIF	5.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
346G	FRESNO	FRE-1044		60-70	DBTG	5.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1288	FRESNO	FRE-1360		10-20	DBTG	5.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
205C	FRESNO	FRE-1360		0-10	DBTG	5.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
259E	FRESNO	FRE-1360		0-10	DBTG	5.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
263E	FRESNO	FRE-1360		0-10	DBTG	5.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
118E	FRESNO	FRE-1363		0-10	DBTG	5.20	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
6-2	FRESNO	FRE-1363		20-30	DBTG	5.20	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
15-1	FRESNO	FRE-1363		60-70	DBTG	5.20	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
52-1	FRESNO	FRE-1365		0-10	FLKTL	5.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
D	FRESNO	FRE-1440	59N/4E	40-50	DBTG	5.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
D	FRESNO	FRE-1480	0N/0E	10-20	DBTG	5.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1281-34	FRESNO	FRE-1671	36N/12E	0-10	DBTG	5.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00380	FRESNO	FRE-1964		60	PRJPT	5.20	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00380	FRESNO	FRE-1964		60	PRJPT	5.20	0.00	CD	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
36-1	FRESNO	FRE-1964		SURFACE	DBTG	5.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
36-1	FRESNO	FRE-1964		SURFACE	DBTG	5.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
36-3	FRESNO	FRE-1964		SURFACE	DBTG	5.20	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
36-3	FRESNO	FRE-1964		SURFACE	DBTG	5.20	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
37	FRESNO	FRE-1964		0-10	FLKTL	5.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
37	FRESNO	FRE-1964		0-10	FLKTL	5.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
57-2	FRESNO	FRE-1964		0-10	DBTG	5.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
57-2	FRESNO	FRE-1964		0-10	DBTG	5.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
6-1	FRESNO	FRE-1965		0-15	DBTG	5.20	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
12-1	FRESNO	FRE-1965		0-10	DBTG	5.20	0.00	CD	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
18-1	FRESNO	FRE-1965		0-10	DBTG	5.20	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
53-1	FRESNO	FRE-1967		0-10	DBTG	5.20	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
70-1	FRESNO	FRE-1967		0-10	DBTG	5.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
10-1	FRESNO	FRE-1971		0-10	DBTG	5.30	0.00	CD	XRF	338132	4180930	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
3A	FRESNO	FRE-1976		SURFACE	BIF	5.30	0.00	CD	VIS	339269	4173705	83		Volcanics	Latest Holocene Ash/Pumice	Cashbaugh-Buscones-Calpine family complex, 0 to 4 percent slopes
64-2	FRESNO	FRE-1976		0-10	DBTG	5.30	0.00	CD	VIS	334604	4172997	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
95-1	FRESNO	FRE-1976		10-46	DBTG	5.30	0.00	CD	VIS	334604	4172997	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
12-1	FRESNO	FRE-1979		0-10	DBTG	5.30	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
31-1A	FRESNO	FRE-1980		0-10	DRILL	5.30	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
5343	FRESNO	FRE-2164			BIF	5.30	0.00	CD	VIS	339664	4180190	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
814	FRESNO	FRE-0064	#6/30-40	30-40	FLKTL	5.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
815	FRESNO	FRE-0064	#6/30-40	30-40	FLKTL	5.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
113	FRESNO	FRE-0815		0-10	FLKTL	5.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
56-3	FRESNO	FRE-0982		10-51	DBTG	5.30	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
65-1	FRESNO	FRE-0982		10-50	DBTG	5.30	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
77-3	FRESNO	FRE-0982		0-10	DBTG	5.30	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
2-3-5	MADERA	MAD-1222		10	DBTG	5.30	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2-3-7	MADERA	MAD-1222		10	DBTG	5.30	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
2-21-8	MADERA	MAD-1222		10-20	DBTG	5.30	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
7-26-9	MADERA	MAD-1222		30-40	DBTG	5.30	0.00	CD-SR	XRF	365910	4133810		11	Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
20-?	MADERA	MAD-0223		?	PRJPT	5.30	0.00	CD	XRF	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
2-13-2	MADERA	MAD-0223		70-80	DBTG	5.30	0.00	CD	VIS	334245	4174630	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
2-18-2	MADERA	MAD-0223		110-120	DBTG	5.30	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
3-13-2	MADERA	MAD-0397		30-40	DBTG	5.30	0.00	CD	VIS	309350	4101900		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-005-a	MONO	MNO-2439	SS-A3	SUR	DBTG	5.30	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-008-c	MONO	MNO-2439	SS-A5	SUR	DBTG	5.30	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-013-a	MONO	MNO-2439	SS-B5	SUR	DBTG	5.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2439-024-a	MONO	MNO-2439	SS-J2	SUR	DBTG	5.30	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2440-009-g	MONO	MNO-2440	CU-7	0-5	DBTG	5.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5069	TULARE	TUL-1231			DBTG	5.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-599B	MONO	F152	SUR	SUR	DBTG	5.30	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-608C	MONO	F155	SUR	SUR	DBTG	5.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-724	MONO	F165	SUR	SUR	DBTG	5.30	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
574-19	MNO	MNO-0574	UNIT D	010-020	DEB	5.30	0.00	CD	VIS	308900	4105000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
574-129	MNO	MNO-0574	UNIT D	110-120	DEB	5.30	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
SC001	MNO	MNO-0574	SURFACE	SURFACE	BIF	5.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
00339	FRESNO	FRE-1044		60	BIF	5.30	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00699	FRESNO	FRE-1360		50	BIF	5.30	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
205D	FRESNO	FRE-1360		0-10	DBTG	5.30	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
222B	FRESNO	FRE-1360		0-10	DBTG	5.30	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
228C	FRESNO	FRE-1360		0-10	DBTG	5.30	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
259A	FRESNO	FRE-1360		0-10	DBTG	5.30		CD	(V)	329644	4170180			pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
273C	FRESNO	FRE-1360		0-10	DBTG	5.40	0.00	CD	VIS	338683	4181012	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
278B	FRESNO	FRE-1360		0-10	DBTG	5.40	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
5-1	FRESNO	FRE-1365		0-10	DBTG	5.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
E	FRESNO	FRE-1440	59N/4E	60-70	DBTG	5.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
A	FRESNO	FRE-1480	0N/0E	50-60	DBTG	5.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
B	FRESNO	FRE-1480	0N/0E	50-60	DBTG	5.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2005-90	FRESNO	FRE-1671	62N/21E	140-150	DBTG	5.40	0.00	CD	VIS	340283	4180894	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
981-9	FRESNO	FRE-1671	UNIT C	40-50	DBTG	5.40	0.00	CD	VIS	340283	4180894	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
2016-46	FRESNO	FRE-1671	34N/10E	40-50	DBTG	5.40	5.00	CD	XRF	338843	4186902	83		Volcanics	Latest Holocene Ash/Pumice	Fez family-Vitrandic Xeropsamments complex, 30 to 60 percent slopes.
2228-67	FRESNO	FRE-1671	40N/10E	70-80	DBTG	5.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00406	FRESNO	FRE-1964		20	PRJPT	5.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00406	FRESNO	FRE-1964		20	PRJPT	5.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00113	FRESNO	FRE-1964		10	BIF	5.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00113	FRESNO	FRE-1964		10	BIF	5.40	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
00345	FRESNO	FRE-1964		90	BIF	5.40	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
00345	FRESNO	FRE-1964		90	BIF	5.40	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
379A	FRESNO	FRE-1964		40-50	DBTG	5.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
379A	FRESNO	FRE-1964		40-50	DBTG	5.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
340D	FRESNO	FRE-1964		60-70	DBTG	5.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
340D	FRESNO	FRE-1964		60-70	DBTG	5.40	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
474C	FRESNO	FRE-1964		40-50	DBTG	5.40	0.00	CD	VIS	338434	4174068	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
474C	FRESNO	FRE-1964		40-50	DBTG	5.40	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
437F	FRESNO	FRE-1964		150-160	DBTG	5.40	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
437F	FRESNO	FRE-1964		150-160	DBTG	5.40	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
36-2	FRESNO	FRE-1967		0-10	DBTG	5.40	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
53-1	FRESNO	FRE-1975		0-10	DBTG	5.40	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
101A	FRESNO	FRE-1976		SURFACE	-NOTCHED PIECE	5.40	0.00	CD	XRF	338005	4181370	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
10-2	FRESNO	FRE-1979		0-10	DBTG	5.40	0.00	CD	VIS	337169	4174848	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
13-1	FRESNO	FRE-1979		0-10	DBTG	5.40	0.00	CD	VIS	336694	4174774	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
15-1	FRESNO	FRE-1979		0-10	DBTG	5.40	0.00	CD	VIS	337243	4174655	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
14-1	FRESNO	FRE-1980		10-47	DBTG	5.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5342	FRESNO	FRE-2164			BIF	5.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5344-01	FRESNO	FRE-2164			DBTG	5.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5344-06	FRESNO	FRE-2164			DBTG	5.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5354-06	FRESNO	FRE-2168			DBTG	5.40	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5358	FRESNO	FRE-2169			BIF	5.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
6-1	FRESNO	FRE-0982		20-30	DBTG	5.40	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2-23-5	MADERA	MAD-1222		20-30	DBTG	5.40	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-4-6	MADERA	MAD-1222		15	DBTG	5.40	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-11-3	MADERA	MAD-1222		0-10	DBTG	5.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-11-9	MADERA	MAD-1222		0-10	DBTG	5.40	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-20-6	MADERA	MAD-1222		10-20	DBTG	5.40	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-22-2	MADERA	MAD-1222		20-30	DBTG	5.40	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7-26-3	MADERA	MAD-1222		30-40	DBTG	5.40	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5-21-4	MADERA	MAD-1223		130-140	DBTG	5.40	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-4-2	MADERA	MAD-0223		10-20	DBTG	5.40	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-8-8	MADERA	MAD-0223		30-40	DBTG	5.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
7-6	MADERA	MAD-0397		10-20	DBTG	5.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
7-30-2	MADERA	MAD-0397		90-100	DBTG	5.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
3-6-2	MADERA	MAD-0397		10-20	DBTG	5.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2439-029	MONO	MNO-2439	98-1	30-40	DBTG	5.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2439-028-e	MONO	MNO-2439	98-1	30-40	DBTG	5.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2439-024-d	MONO	MNO-2439	J2	SUR	DBTG	5.40	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2439-002-l	MONO	MNO-2439	SC	SUR	DBTG	5.40	0.00	CD	XRF	338555	4181647	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
2439-013-b	MONO	MNO-2439	SS-B5	SUR	DBTG	5.50	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
2439-024-b	MONO	MNO-2439	SS-J2	SUR	DBTG	5.50	0.00	CD	XRF	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2439-002-l	MONO	MNO-2439	SC	SUR	DBTG	5.50	0.00	CD	VIS	332902	4175501	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
5030	TULARE	TUL-1198			DBTG	5.50	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-511E	MONO	F143	SUR	SUR	DBTG	5.50	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-516	MONO	F144	SUR	LOCUS A	BIF	5.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-540	MONO	F144	SUR	LOCUS D	BIF	5.50		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-552	MONO	F147	SUR	LOCUS A	PRJPT	5.50	0.00	CD-LM	XRF	316430	4182250		11	Volcanics	Latest Holocene Ash/Pumice	Nanamkin family-Vitrandic Haploxerolls complex, 15 to 30 percent slopes..
349-553	MONO	F147	SUR	LOCUS A	BIF	5.50	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
SC008	MNO	MNO-0574	SURFACE	SURFACE	BIF	5.50	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-64C	MONO	A18	SUR	SUR	DBTG	5.50	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
349-64E	MONO	A18	SUR	SUR	DBTG	5.50	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1293	FRESNO	FRE-1360		40-50	DBTG	5.50	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
214C	FRESNO	FRE-1360		0-10	DBTG	5.50	0.00	CD	VIS	337753	4173666	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
120A	FRESNO	FRE-1363		0-10	DBTG	5.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
120C	FRESNO	FRE-1363		0-10	DBTG	5.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
3-2	FRESNO	FRE-1363		0-10	DBTG	5.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
7-2	FRESNO	FRE-1363		30-40	DBTG	5.50	0.00	CD	VIS	336565	4174674	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1953-36	FRESNO	FRE-1671	62N/21E	50-60	DBTG	5.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
972-7	FRESNO	FRE-1671	UNIT C	20-30	DBTG	5.50	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1088-22	FRESNO	FRE-1671	UNIT H	50-60	DBTG	5.50	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1657-40	FRESNO	FRE-1671	23N/10E	60-70	DBTG	5.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
50-1	FRESNO	FRE-1965		0-10	DBTG	5.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
20-1	FRESNO	FRE-1974		0-10	DBTG	5.50	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
42-2	FRESNO	FRE-1975		0-10	DBTG	5.50	0.00	CD	VIS	307600	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
55-1	FRESNO	FRE-1975		0-10	DBTG	5.50	0.00	CD	VIS	308400	4103400		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
31-1B	FRESNO	FRE-1980		0-10	DRILL	5.50	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
5339	FRESNO	FRE-2164			BIF	5.50	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5340	FRESNO	FRE-2164			BIF	5.50	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1442	FRESNO	FRE-0064			FLKTL	5.50	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
55-1	FRESNO	FRE-0982		0-10	DBTG	5.50	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
75-3	FRESNO	FRE-0982		0-10	DBTG	5.50	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2-29-1	MADERA	MAD-1222		30-40	DBTG	5.50	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
7-4	MADERA	MAD-1222		15	DBTG	5.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
7-26-8	MADERA	MAD-1222		30-40	DBTG	5.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-004	MADERA	MAD-0223		10-20	DBTG	5.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-4-1	MADERA	MAD-0223		10-20	DBTG	5.50	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-11-2	MADERA	MAD-0223		50-60	DBTG	5.50	0.00	CD	XRF	380400	4039550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
2-11-3	MADERA	MAD-0223		50-60	DBTG	5.50	0.00	CD	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
2-11-4	MADERA	MAD-0223		50-60	DBTG	5.50	0.00	CD	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
2-13	MADERA	MAD-0223		70-80	DBTG	5.50	0.00	CD	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7-18-9	MADERA	MAD-0397		30-40	DBTG	5.50	0.00	CD	XRF	339137	4184373	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
7-24-2	MADERA	MAD-0397		50-60	DBTG	5.55		CD-SR		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
3-6-4	MADERA	MAD-0397		10-20	DBTG	5.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
3-13-8	MADERA	MAD-0397		30-40	DBTG	5.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
3-17-3	MADERA	MAD-0397		50-60	DBTG	5.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
3-17-6	MADERA	MAD-0397		50-60	DBTG	5.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2439-002-z	MONO	MNO-2439	SC	SUR	DBTG	5.60	6.10	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2439-002-d	MONO	MNO-2439	SC	SUR	DBTG	5.60	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2439-002-m	MONO	MNO-2439	SC	SUR	DBTG	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-g	MONO	MNO-2439	SC	SUR	DBTG	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-d	MONO	MNO-2439	SC	SUR	DBTG	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-557	MONO	F147	SUR	LOCUS A	BIF	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-595	MONO	F150	SUR	SUR	BIF	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
574-120	MNO	MNO-0574	UNIT D	110-120	DEB	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-84B	MONO	A23	SUR	SUR	DBTG	5.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
00542	FRESNO	FRE-1044		109	PRJPT	5.60	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1302	FRESNO	FRE-1360		120-130	DBTG	5.60	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1305	FRESNO	FRE-1360		120-130	DBTG	5.60	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
00570	FRESNO	FRE-1360		220	PREFORM	5.60	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
214B	FRESNO	FRE-1360		0-10	DBTG	5.60	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
263D	FRESNO	FRE-1360		0-10	DBTG	5.60	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
1-2	FRESNO	FRE-1362		0-10	DBTG	5.60	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1951-30	FRESNO	FRE-1671	62N/21E	46-60	DBTG	5.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
35-1	FRESNO	FRE-1965		0-10	DBTG	5.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
10-2	FRESNO	FRE-1972		0-10	DBTG	5.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
39-1	FRESNO	FRE-1980		0-10	DBTG	5.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5344-09	FRESNO	FRE-2164			DBTG	5.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
73D	FRESNO	FRE-0815		0-10	DBTG	5.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
77-2	FRESNO	FRE-0982		0-10	DBTG	5.60	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-15-4	MADERA	MAD-1222		0-10	DBTG	5.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2-15-9	MADERA	MAD-1222		0-10	DBTG	5.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
7-20	MADERA	MAD-1222		10-20	DBTG	5.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2-11-8	MADERA	MAD-0223		50-60	DBTG	5.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2-11-9	MADERA	MAD-0223		50-60	DBTG	5.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2-16	MADERA	MAD-0223		90-100	DBTG	5.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
7-6-4	MADERA	MAD-0397		10-20	DBTG	5.60	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
7-24-6	MADERA	MAD-0397		50-60	DBTG	5.60	0.00	CD	VIS	309000	4103000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2439-026-c	MONO	MNO-2439	98-1	10-20	DBTG	5.60	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
2439-002-ee	MONO	MNO-2439	SC	SUR	DBTG	5.60	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
2439-024-b	MONO	MNO-2439	J2	SUR	DBTG	5.60	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2439-002-f	MONO	MNO-2439	SC	SUR	DBTG	5.60	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2439-002-h	MONO	MNO-2439	SC	SUR	DBTG	5.60	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2439-024-d	MONO	MNO-2439	SS-J2	SUR	DBTG	5.60	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
5236-16	TULARE	TUL-1249			DBTG	5.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-523	MONO	F144	SUR	LOCUS B	BIF	5.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-563	MONO	F149	SUR	LOCUS A	BIF	5.60	0.00	CD	VIS	336655	4180819	83		pre-Quat	pre-Quat	Haar family-Rock outcrop association, 15 to 50 percent slopes
574-3	MNO	MNO-0574	UNIT D	000-010	DEB	5.70	0.00	CD	XRF	337926	4180777	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
349-59A	MONO	A16	SUR	SUR	DBTG	5.70	0.00	CD	VIS	339269	4173705	83		Volcanics	Latest Holocene Ash/Pumice	Cashbaugh-Buscones-Calpine family complex, 0 to 4 percent slopes
349-24	MONO	A07	SUR	SUR	BIF	5.70	0.00	CD	VIS	333858	4172758	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
00471	FRESNO	FRE-1044		90	PREFORM	5.70	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
346C	FRESNO	FRE-1044		60-70	DBTG	5.70	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1309	FRESNO	FRE-1360		20-30	DBTG	5.70	0.00	CD	VIS	339664	4180190	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
1234	FRESNO	FRE-1360		50-60	DBTG	5.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
58C	FRESNO	FRE-1363		0-10	DBTG	5.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
23A	FRESNO	FRE-1363		10-20	BIF	5.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
3-2	FRESNO	FRE-1365		20-30	DBTG	5.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
6-1	FRESNO	FRE-1365		10-20	DBTG	5.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
62-1	FRESNO	FRE-1365		0-10	DBTG	5.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1649-39	FRESNO	FRE-1671	23N/10E	40-50	DBTG	5.70	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
48-2	FRESNO	FRE-1967		0-10	DBTG	5.70	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
62-1	FRESNO	FRE-1967		0-10	DBTG	5.70	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
14-1	FRESNO	FRE-1972		0-10	DBTG	5.70	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
19-2	FRESNO	FRE-1974		0-10	DBTG	5.70	0.00	CD	VIS	341791	4180291	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 0 to 15 percent slopes.
73-1	FRESNO	FRE-1976		0-10	DBTG	5.70	0.00	CD-SR	XRF	365910	4133810		11	Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
30-1	FRESNO	FRE-1980		0-10	DBTG	5.70	0.00	CD	VIS	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
35-1	FRESNO	FRE-1980		0-10	DBTG	5.70	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
5354-07	FRESNO	FRE-2168			DBTG	5.70	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5355-02	FRESNO	FRE-2169			DBTG	5.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1165	FRESNO	FRE-0064	#2/30-40	30-40	PRJPT	5.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
7-11-7	MADERA	MAD-1222		0-10	DBTG	5.70	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-8-5	MADERA	MAD-0223		30-40	DBTG	5.70	0.00	CD	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
2-16-5	MADERA	MAD-0223		90-100	DBTG	5.70	0.00	CD	VIS	307200	4101400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES
2439-027-c	MONO	MNO-2439	98-1	20-30	DBTG	5.70	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
2439-009-b	MONO	MNO-2439	SS-A6	SUR	DBTG	5.70	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
5111	TULARE	TUL-1240			DBTG	5.70	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5111	TULARE	TUL-1240			DBTG	5.70	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5111	TULARE	TUL-1240			DBTG	5.70	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5111	TULARE	TUL-1240			DBTG	5.70	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
10550B	TULARE	TUL-0072		70-80	DBTG	5.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
349-60	MONO	A16	SUR	SUR	BIF	5.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1290	FRESNO	FRE-1360		10-20	DBTG	5.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1303	FRESNO	FRE-1360		120-130	DBTG	5.70	0.00	CD	XRF	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1315	FRESNO	FRE-1360		50-60	DBTG	5.70	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00430	FRESNO	FRE-1360		30	PRJPT	5.70	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
00621	FRESNO	FRE-1360		117	PRJPT	5.70	0.00	CD	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
00087	FRESNO	FRE-1360		SURFACE	PREFORM	5.70	0.00	CD	XRF	339137	4184373	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
1229	FRESNO	FRE-1360		20-30	DBTG	5.80	0.00	CD	VIS	335091	4172864	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
25-2	FRESNO	FRE-1363		30-40	DBTG	5.80	0.00	CD	VIS	335310	4174076	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1-1	FRESNO	FRE-1365		0-10	DBTG	5.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1953-35	FRESNO	FRE-1671	62N/21E	50-60	DBTG	5.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1975-83	FRESNO	FRE-1671	62N/21E	130-140	DBTG	5.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
44-2	FRESNO	FRE-1967		0-10	DBTG	5.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
76	FRESNO	FRE-1967		0-10	FLKTL	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
47-2	FRESNO	FRE-1975		0-10	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
14-2	FRESNO	FRE-1979		0-10	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-11-8	MADERA	MAD-1222		0-10	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1531-1033-1G	MADERA	MAD-1531	173N/6W	0-10	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-11-7	MADERA	MAD-0223		50-60	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
3-6-3	MADERA	MAD-0397		10-20	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-ff	MONO	MNO-2439	SC	SUR	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-027-b	MONO	MNO-2439	98-1	20-30	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-026-e	MONO	MNO-2439	98-1	10-20	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-bb	MONO	MNO-2439	SC	SUR	DBTG	5.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-012-a	MONO	MNO-2439	B4	SUR	DBTG	5.80	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
2439-002-r	MONO	MNO-2439	SC	SUR	DBTG	5.80	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
349-568	MONO	F149	SUR	SUR	BIF	5.80	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
349-592B	MONO	F150	SUR	SUR	DBTG	5.80	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
349-594	MONO	F150	SUR	SUR	BIF	5.80	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
349-698	MONO	F164	SUR	SUR	PRJPT	5.80	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
349-306A	MONO	A75	SUR	SUR	DBTG	5.80	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1231	FRESNO	FRE-1360		20-30	DBTG	5.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
214A	FRESNO	FRE-1360		0-10	DBTG	5.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
228D	FRESNO	FRE-1360		0-10	DBTG	5.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
242D	FRESNO	FRE-1360		0-10	DBTG	5.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00131	FRESNO	FRE-1363		20	BIF	5.80	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
71-1	FRESNO	FRE-1365		0-10	DBTG	5.80	0.00	CD	VIS	308800	4104000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
86-2	FRESNO	FRE-1365		10-60	DBTG	5.80	0.00	CD	XRF	349670	4117000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1960-43	FRESNO	FRE-1671	62N/21E	70-80	DBTG	5.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
00320	FRESNO	FRE-1964		20	BIF	5.80	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
00320	FRESNO	FRE-1964		20	BIF	5.80	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
330B	FRESNO	FRE-1964		30-40	DBTG	5.80	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
330B	FRESNO	FRE-1964		30-40	DBTG	5.80	0.00	CD	VIS	277000	4125000		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
11-1	FRESNO	FRE-1972		0-10	DBTG	5.80	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
39-1	FRESNO	FRE-1973		0-10	DBTG	5.80	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
3A	FRESNO	FRE-1974		SURFACE	BIF	5.80	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
25-1	FRESNO	FRE-1978		0-10	DBTG	5.80	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5341	FRESNO	FRE-2164			BIF	5.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
4-1	FRESNO	FRE-0982		30-40	DBTG	5.80	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2-3-4	MADERA	MAD-1222		10	DBTG	5.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
5-7-5	MADERA	MAD-1223		30-40	DBTG	5.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
3-17-5	MADERA	MAD-0397		50-60	DBTG	5.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
3-21	MADERA	MAD-0397		90-100	DBTG	5.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2439-018-c	MONO	MNO-2439	C6	SUR	DBTG	5.80	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2439-002-n	MONO	MNO-2439	SC	SUR	DBTG	5.80	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
2439-008-d	MONO	MNO-2439	SS-A5	SUR	DBTG	5.80	0.00	CD	VIS	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
349-592A	MONO	F150	SUR	SUR	DBTG	5.80	7.30	CD	XRF	338899	4182293	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
349-626	MONO	F156	SUR	SUR	BIF	5.90	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
UE042	MNO	MNO-0574	UNIT E	150-160	BIF	5.90	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
00573	FRESNO	FRE-1044		100	BIF	5.90	0.00	CD	VIS	335091	4172864	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1306	FRESNO	FRE-1360		20-30	DBTG	5.90	0.00	CD	VIS	334604	4172997	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1320	FRESNO	FRE-1360		80-90	DBTG	5.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
214D	FRESNO	FRE-1360		0-10	DBTG	5.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
228A	FRESNO	FRE-1360		0-10	DBTG	5.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
228B	FRESNO	FRE-1360		0-10	DBTG	5.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
263C	FRESNO	FRE-1360		0-10	DBTG	5.90	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
125A	FRESNO	FRE-1363		0-10	DBTG	5.90	5.90	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
10-2	FRESNO	FRE-1363		10-20	DBTG	5.90	0.00	CD	VIS	339501	4180278	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
1955-38	FRESNO	FRE-1671	62N/21E	60-70	DBTG	5.90	0.00	CD	VIS	340283	4180894	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
1804-10	FRESNO	FRE-1671	62N/21E	20-30	DBTG	5.90	0.00	CD	XRF	340728	4182676	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
2210-64	FRESNO	FRE-1671	38N/10E	80-90	DBTG	5.90	8.50	CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
33-1	FRESNO	FRE-1973		0-10	DBTG	5.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
23-1	FRESNO	FRE-1978		10-53	DBTG	5.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5350	FRESNO	FRE-2168			CORE	5.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
839	FRESNO	FRE-0064	#6/50-60	50-60	BIF	5.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
106C	FRESNO	FRE-0815		0-10	DBTG	5.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5-14-8	MADERA	MAD-1223		70-80	DBTG	5.90	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1531-1080-1E	MADERA	MAD-1531	173N/6W	50-60	DBTG	5.90	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
2-8-9	MADERA	MAD-0223		30-40	DBTG	5.90	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
2-11-5	MADERA	MAD-0223		50-60	DBTG	5.90	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
2-16-3	MADERA	MAD-0223		90-100	DBTG	5.90	0.00	CD	XRF	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-24-7	MADERA	MAD-0397		50-60	DBTG	5.90	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
7-28-10	MADERA	MAD-0397		70-80	DBTG	5.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2439-012-b	MONO	MNO-2439	B4	SUR	DBTG	5.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2439-024-a	MONO	MNO-2439	J2	SUR	DBTG	5.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-515D	MONO	F144	SUR	LOCUS A	DBTG	5.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-593	MONO	F150	SUR	SUR	BIF	5.90	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
349-435D	MONO	W130	SUR	SUR	DBTG	5.90	0.00	CD	XRF	300100	4112300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
SC005	MNO	MNO-0574	SURFACE	SURFACE	BIF	5.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
00472	FRESNO	FRE-1044		80	BIF	5.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1272	FRESNO	FRE-1360		70-80	DBTG	5.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1286	FRESNO	FRE-1360		10-20	DBTG	5.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1298	FRESNO	FRE-1360		90-100	DBTG	5.90	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1304	FRESNO	FRE-1360		120-130	DBTG	5.90	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
1240	FRESNO	FRE-1360		90-105	DBTG	5.90	0.00	CD	XRF	338158	4184492	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
205B	FRESNO	FRE-1360		0-10	DBTG	6.00	0.00	CD	VIS	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
222C	FRESNO	FRE-1360		0-10	DBTG	6.00	0.00	CD	VIS	334604	4172997	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
263B	FRESNO	FRE-1360		0-10	DBTG	6.00	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
273B	FRESNO	FRE-1360		0-10	DBTG	6.00	0.00	CD	XRF	339664	4180190	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
2337-74	FRESNO	FRE-1671	42N/10E	60-70	DBTG	6.00	0.00	CD	XRF	335095	4173273	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
10-1	FRESNO	FRE-1979		0-10	DBTG	6.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-4-3	MADERA	MAD-1222		15	DBTG	6.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
7-20-4	MADERA	MAD-1222		10-20	DBTG	6.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2-11	MADERA	MAD-0223		50-60	DBTG	6.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
2439-002-dd	MONO	MNO-2439	SC	SUR	DBTG	6.00		Casa Diablo?		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
2439-002-w	MONO	MNO-2439	SC	SUR	DBTG	6.00	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
2439-002-o	MONO	MNO-2439	SC	SUR	DBTG	6.00	0.00	CD	XRF	337291	4173194	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-534D	MONO	F144	SUR	LOCUS D	DBTG	6.00	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
SC003	MNO	MNO-0574	SURFACE	SURFACE	BIF	6.00	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
349-58B	MONO	A16	SUR	SUR	DBTG	6.00	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
349-59C	MONO	A16	SUR	SUR	DBTG	6.00	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
1271	FRESNO	FRE-1360		70-80	DBTG	6.00	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1296	FRESNO	FRE-1360		90-100	DBTG	6.00	0.00	CD	VIS	337243	4174655	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1297	FRESNO	FRE-1360		90-100	DBTG	6.00	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00443	FRESNO	FRE-1360		60	BIF	6.00	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
205A	FRESNO	FRE-1360		0-10	DBTG	6.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
205E	FRESNO	FRE-1360		0-10	DBTG	6.00	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
118C	FRESNO	FRE-1363		0-10	DBTG	6.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
60-1	FRESNO	FRE-1365		0-10	DBTG	6.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
75-2	FRESNO	FRE-1365		0-10	DBTG	6.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1801-4	FRESNO	FRE-1671	62N/21E	10-20	DBTG	6.00	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1804-12	FRESNO	FRE-1671	62N/21E	20-30	DBTG	6.00	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
999-13	FRESNO	FRE-1671	UNIT C	80-90	DBTG	6.00	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
371C	FRESNO	FRE-1964		10-20	DBTG	6.00	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
371C	FRESNO	FRE-1964		10-20	DBTG	6.00	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5363	FRESNO	FRE-2169			CORE	6.00	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5-4-5	MADERA	MAD-1223		10-20	DBTG	6.00	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1070-1D	MADERA	MAD-1531	173N/6W	40-50	DBTG	6.00	0.00	CD?	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2-11-6	MADERA	MAD-0223		50-60	DBTG	6.10	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
7-18-4	MADERA	MAD-0397		30-40	DBTG	6.10	0.00	CD	XRF	334161	4172696	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2439-028-f	MONO	MNO-2439	98-1	30-40	DBTG	6.10	0.00	CD	VIS	333015	4175771	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
2439-002-e	MONO	MNO-2439	SC	SUR	DBTG	6.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2439-002-y	MONO	MNO-2439	SC	SUR	DBTG	6.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2439-030-b	MONO	MNO-2439	98-2	36-47	DBTG	6.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2439-002-p	MONO	MNO-2439	SC	SUR	DBTG	6.10	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
EU1	TULARE	TUL-1227		60-70	FLKTL	6.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1353-24-605	TULARE	TUL-0024		22"	PRJPT	6.10		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1580-24-1798	TULARE	TUL-0024		6-12"	PRJPT	6.10	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
574-88	MNO	MNO-0574	UNIT D	060-070	DEB	6.10	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-12	MONO	A5	SUR	SUR	DBTG	6.10	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
349-268A	MONO	A59	SUR	SUR	DBTG	6.10	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
1274	FRESNO	FRE-1360		70-80	DBTG	6.10	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
3-1	FRESNO	FRE-1362		20-30	DBTG	6.10	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
58B	FRESNO	FRE-1363		0-10	DBTG	6.10	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
55-1B	FRESNO	FRE-1365		0-10	-NOTCHED PIECE	6.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1950-22	FRESNO	FRE-1671	62N/21E	40-50	DBTG	6.10	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1968-62	FRESNO	FRE-1671	62N/21E	100-110	DBTG	6.10	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1968-65	FRESNO	FRE-1671	62N/21E	100-110	DBTG	6.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1801-1	FRESNO	FRE-1671	62N/21E	10-20	DBTG	6.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1975-80	FRESNO	FRE-1671	62N/21E	130-140	DBTG	6.10	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2315-72	FRESNO	FRE-1671	42N/10E	10-20	DBTG	6.10	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
23-1	FRESNO	FRE-1965		0-10	DBTG	6.10	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
50-1	FRESNO	FRE-1973		0-10	DBTG	6.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
15-2	FRESNO	FRE-1978		10-35	DBTG	6.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
61-1A	FRESNO	FRE-0982		10-20	DBTG	6.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
74-1	FRESNO	FRE-0982		0-10	DBTG	6.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
5-12-4	MADERA	MAD-1223		50-60	DBTG	6.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
5-14-7	MADERA	MAD-1223		70-80	DBTG	6.10	0.00	CD	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2-4-6	MADERA	MAD-0223		10-20	DBTG	6.20	0.00	CD	VIS	332227	4176120	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Rock outcrop-Railcity complex, 15 to 30 percent slopes.
2439-001	MONO	MNO-2439	SC	SUR	PRJPT	6.20	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
UB031	MNO	MNO-0577	UNIT B	080-090	RETOUCH	6.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
349-54	MONO	A14	SUR	SUR	BIF	6.20	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-59A	MONO	A16	SUR	SUR	DBTG	6.20	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
349-84A	MONO	A23	SUR	SUR	BIF	6.20	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
1299	FRESNO	FRE-1360		90-100	DBTG	6.20	0.00	CD	VIS	337169	4174848	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1313	FRESNO	FRE-1360		50-60	DBTG	6.20	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1338	FRESNO	FRE-1360		180-190	DBTG	6.20	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1226	FRESNO	FRE-1360		10-20	DBTG	6.20	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
55-1A	FRESNO	FRE-1365		0-10	-NOTCHED PIECE	6.20	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1968-64	FRESNO	FRE-1671	62N/21E	100-110	DBTG	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2005-85	FRESNO	FRE-1671	62N/21E	140-150	DBTG	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
00505	FRESNO	FRE-1964		89	BIF	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
00505	FRESNO	FRE-1964		89	BIF	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
366A	FRESNO	FRE-1964		160-170	DBTG	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
366A	FRESNO	FRE-1964		160-170	DBTG	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
47-1	FRESNO	FRE-1965		0-10	DBTG	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5352	FRESNO	FRE-2168			BIF	6.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
61-1B	FRESNO	FRE-0982		10-20	DBTG	6.20	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
2-3-6	MADERA	MAD-1222		10	DBTG	6.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5-19-5	MADERA	MAD-1223		110-120	DBTG	6.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1531-1102-G	MADERA	MAD-1531	173N/6W	80-90	DBTG	6.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2439-028-d	MONO	MNO-2439	98-1	30-40	DBTG	6.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2439-026-a	MONO	MNO-2439	98-1	10-20	DBTG	6.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2439-002-t	MONO	MNO-2439	SC	SUR	DBTG	6.20	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2439-026-b	MONO	MNO-2439	98-1	10-20	DBTG	6.20	0.00	CD	XRF	338555	4181647	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
2439-002-b	MONO	MNO-2439	SC	SUR	DBTG	6.20	0.00	CD	VIS	338555	4181647	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
2439-002-k	MONO	MNO-2439	SC	SUR	DBTG	6.30	0.00	CD-LM	XRF	389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
349-687	MONO	F163	SUR	SUR	BIF	6.30	0.00	CD	VIS	335363	4172257	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-64D	MONO	A18	SUR	SUR	DBTG	6.30	0.00	CD	VIS	335377	4174264	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
00036	FRESNO	FRE-1360		70	PREFORM	6.30	0.00	CD	VIS	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
222A	FRESNO	FRE-1360		0-10	DBTG	6.30	0.00	CD	XRF	333976	4172626	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
72-1	FRESNO	FRE-1365		0-10	FLKTL	6.30	0.00	CD	XRF	334161	4172696	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2123-52	FRESNO	FRE-1671	35N/12E	20-30	DBTG	6.30	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
408F	FRESNO	FRE-1964		10-20	DBTG	6.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
408F	FRESNO	FRE-1964		10-20	DBTG	6.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
38-1	FRESNO	FRE-1965		0-10	DBTG	6.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
21-1	FRESNO	FRE-1978		0-10	DBTG	6.30	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1475	FRESNO	FRE-0064	#7/30-40	30-40	DBTG	6.30	0.00	CD-SR	XRF	364140	4129150	83		LtP	latest-Pleist	Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes.
69-1A	FRESNO	FRE-0982		0-10	DBTG	6.30	0.00	CD	VIS	338453	4174231	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5-17-7	MADERA	MAD-1223		90-100	DBTG	6.30	0.00	CD	VIS	337753	4173666	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-1042-1C	MADERA	MAD-1531	173N/6W	10-20	DBTG	6.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1531-1042-1D	MADERA	MAD-1531	173N/6W	10-20	DBTG	6.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-1096-1G	MADERA	MAD-1531	173N/6W	70-80	DBTG	6.30	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
7-24-4	MADERA	MAD-0397		50-60	DBTG	6.30	0.00	CD	XRF	275000	4094300		11	pre-Quat	pre-Quat	Auberry coarse sandy loam, 9 to 15 percent slopes
2439-027-a	MONO	MNO-2439	98-1	20-30	DBTG	6.30	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2439-002-a	MONO	MNO-2439	SC	SUR	DBTG	6.30	0.00	CD	VIS	338555	4181647	83		pre-Quat	pre-Quat	Powment-Nanamkin families-Rock outcrop association, 30 to 60 percent slopes
2439-002-q	MONO	MNO-2439	SC	SUR	DBTG	6.30		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
2439-018-b	MONO	MNO-2439	C6	SUR	DBTG	6.40	0.00	CD	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
5135	TULARE	TUL-0103			DBTG	6.40	0.00	CD	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
5311-01	TULARE	TUL-1264			DBTG	6.40	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
5311-12	TULARE	TUL-1264			DBTG	6.40	0.00	CD	VIS	334751	4172992	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
5311-13	TULARE	TUL-1264			DBTG	6.40	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-436	MONO	W130	SUR	SUR	PRJPT	6.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-22E	MONO	A07	SUR	SUR	DBTG	6.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1269	FRESNO	FRE-1360		40-50	DBTG	6.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1292	FRESNO	FRE-1360		40-50	DBTG	6.40	0.00	CD	VIS	337243	4174655	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1295	FRESNO	FRE-1360		40-50	DBTG	6.40	0.00	CD	VIS	334245	4174630	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1316	FRESNO	FRE-1360		80-90	DBTG	6.40	0.00	CD	VIS	334867	4175056	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1337	FRESNO	FRE-1360		180-190	DBTG	6.40	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
00698	FRESNO	FRE-1360		50	BIF	6.40	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
58D	FRESNO	FRE-1363		0-10	DBTG	6.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
66-1	FRESNO	FRE-1365		0-10	DBTG	6.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1951-27	FRESNO	FRE-1671	62N/21E	46-60	DBTG	6.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1801-2	FRESNO	FRE-1671	62N/21E	10-20	DBTG	6.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1971-67	FRESNO	FRE-1671	62N/21E	110-120	DBTG	6.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1032-17	FRESNO	FRE-1671	UNIT D	70-80	DBTG	6.40	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1159-26	FRESNO	FRE-1671	UNIT J	50-60	DBTG	6.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
37-1	FRESNO	FRE-1967		0-10	DBTG	6.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
99-1	FRESNO	FRE-1976		0-10	DBTG	6.40	0.00	CD	XRF	339137	4184373	83		pre-Quat	pre-Quat	Sumine family-Rock outcrop complex, 2 to 30 percent slopes.
1534	FRESNO	FRE-0064	#7/60-70	60-70	FLKTL	6.50		CD-SR		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
834	FRESNO	FRE-0064	#6/40-50	40-50	FLKTL	6.50	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
68-1	FRESNO	FRE-0982		0-10	DBTG	6.50	0.00	CD	VIS	337037	4173640	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
5-12-8	MADERA	MAD-1223		50-60	DBTG	6.50	0.00	CD	XRF	334161	4172696	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
5-14-6	MADERA	MAD-1223		70-80	DBTG	6.50	0.00	CD	XRF	334161	4172696	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-13-8	MADERA	MAD-0223		70-80	DBTG	6.50	0.00	CD	VIS	339501	4180278	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
2439-030-a	MONO	MNO-2439	98-2	36-47	DBTG	6.50	0.00	CD	XRF	337928	4186805	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Cryopsamments, 0 to 15 percent slopes.
2439-002-h	MONO	MNO-2439	SC	SUR	DBTG	6.50	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-631	MONO	F156	SUR	SUR	BIF	6.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
349-10J	MONO	A5	SUR	SUR	DBTG	6.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
349-23D	MONO	A07	SUR	SUR	DBTG	6.50	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
1965-55	FRESNO	FRE-1671	62N/21E	90-100	DBTG	6.50	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
1003-14	FRESNO	FRE-1671	UNIT C	90-100	DBTG	6.50	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1032-17	FRESNO	FRE-1671	UNIT D	70-80	DBTG	6.50	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
00336	FRESNO	FRE-1964		60	PRJPT	6.50	0.00	CD	VIS	334867	4175056	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
00336	FRESNO	FRE-1964		60	PRJPT	6.50	0.00	CD	VIS	325560	4091940		11	pre-Quat	pre-Quat	ULTIC HAPLOXERALFS, DEEP, 15 TO 50 PERCENT SLOPES
15-1	FRESNO	FRE-1967		10-50	DBTG	6.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
16-3	FRESNO	FRE-1974		0-10	DBTG	6.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
56-2	FRESNO	FRE-0982		10-51	DBTG	6.50	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
69-1B	FRESNO	FRE-0982		0-10	DBTG	6.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-7-2	MADERA	MAD-1223		30-40	DBTG	6.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-17-9	MADERA	MAD-1223		90-100	DBTG	6.50	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-19	MADERA	MAD-1223		110-120	DBTG	6.50	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-13-7	MADERA	MAD-0223		70-80	DBTG	6.50	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-16-4	MADERA	MAD-0223		90-100	DBTG	6.50	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2-16-6	MADERA	MAD-0223		90-100	DBTG	6.50	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
7-28-7	MADERA	MAD-0397		70-80	DBTG	6.50	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2439-008-e	MONO	MNO-2439	SS-A5	SUR	DBTG	6.60	0.00	CD-LM	XRF	314520	4193150		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes
2439-005-c	MONO	MNO-2439	SS-A3	SUR	DBTG	6.60	0.00	CD-SR	XRF	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
1549-24-1307	TULARE	TUL-0024		20"	BIF	6.60	0.00	CD	VIS	336700	4173457	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-435E	MONO	W130	SUR	SUR	DBTG	6.60	0.00	CD	VIS	335310	4174076	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
362A	FRESNO	FRE-1044		80-90	DBTG	6.60	0.00	CD	VIS	333858	4172758	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1958-46	FRESNO	FRE-1671	62N/21E	70-80	DBTG	6.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1971-70	FRESNO	FRE-1671	62N/21E	110-120	DBTG	6.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1643-37	FRESNO	FRE-1671	23N/10E	10-20	DBTG	6.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
408E	FRESNO	FRE-1964		10-20	DBTG	6.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
408E	FRESNO	FRE-1964		10-20	DBTG	6.60	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
14-1	FRESNO	FRE-1974		0-10	DBTG	6.60		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5336-02	FRESNO	FRE-2162			DBTG	6.60	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1003	FRESNO	FRE-0064	#2/0-10	0-10	BIF	6.60	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
881	FRESNO	FRE-0064	#6/70-80	70-80	FLKTL	6.60	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
59	FRESNO	FRE-0815		0-10	FLKTL	6.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
75-1	FRESNO	FRE-0982		0-10	DBTG	6.60	0.00	CD	VIS	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
7-4-2	MADERA	MAD-1222		15	DBTG	6.60	0.00	CD	VIS	309000	4102300		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5-7-6	MADERA	MAD-1223		30-40	DBTG	6.60	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-12-1	MADERA	MAD-1223		50-60	DBTG	6.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-17	MADERA	MAD-1223		90-100	DBTG	6.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-19-9	MADERA	MAD-1223		110-120	DBTG	6.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-1070-1A	MADERA	MAD-1531	173N/6W	40-50	DBTG	6.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2-8-4	MADERA	MAD-0223		30-40	DBTG	6.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2439-018-a	MONO	MNO-2439	C6	SUR	DBTG	6.60	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2439-002-f	MONO	MNO-2439	SC	SUR	DBTG	6.60	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2439-005-b	MONO	MNO-2439	SS-A3	SUR	DBTG	6.60	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
2439-002-j	MONO	MNO-2439	SC	SUR	DBTG	6.60	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2439-008-b	MONO	MNO-2439	SS-A5	SUR	DBTG	6.60	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
349-521C	MONO	F144	SUR	LOCUS B	DBTG	6.60	0.00	CD?	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-521D	MONO	F144	SUR	LOCUS B	DBTG	6.70	0.00	CD	VIS	335310	4174076	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-904	MONO	IF44	SUR	SUR	-FRAG	6.70	0.00	CD	XRF	334161	4172696	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1230	FRESNO	FRE-1360		20-30	DBTG	6.70	0.00	CD	XRF	339664	4180190	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
00132	FRESNO	FRE-1363		30	BIF	6.70		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1953-32	FRESNO	FRE-1671	62N/21E	50-60	DBTG	6.70	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1963-51	FRESNO	FRE-1671	62N/21E	80-90	DBTG	6.70	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
1093-23	FRESNO	FRE-1671	UNIT H	60-70	DBTG	6.70	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
1106-24	FRESNO	FRE-1671	UNIT H	70-80	DBTG	6.70	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
2178-55	FRESNO	FRE-1671	37N/10E	50-60	DBTG	6.70	0.00	CD	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
868	FRESNO	FRE-0064	#6/60-70	60-70	FLKTL	6.70	0.00	CD	VIS	337169	4174848	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
86	FRESNO	FRE-0815		0-10	BIF	6.70	8.80	CD	VIS	334867	4175056	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
5-7-3	MADERA	MAD-1223		30-40	DBTG	6.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-12-4	MADERA	MAD-1223		50-60	DBTG	6.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-21-2	MADERA	MAD-1223		130-140	DBTG	6.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-1052-1A	MADERA	MAD-1531	173N/6W	20-30	DBTG	6.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
3-20	MADERA	MAD-0397		80-90	DBTG	6.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2439-002-b	MONO	MNO-2439	SC	SUR	DBTG	6.70	0.00	CD	VIS	308900	4105200		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-542	MONO	F144	SUR	LOCUS A-B	PRJPT	6.70	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
349-84C	MONO	A23	SUR	SUR	DBTG	6.70	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
230D	FRESNO	FRE-1360		0-10	DBTG	6.70	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2-2	FRESNO	FRE-1365		10-20	DBTG	6.80	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1951-26	FRESNO	FRE-1671	62N/21E	46-60	DBTG	6.80	0.00	CD	VIS	334725	4172188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1971-71	FRESNO	FRE-1671	62N/21E	110-120	DBTG	6.80	0.00	CD	VIS	333858	4172758	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1973-75	FRESNO	FRE-1671	62N/21E	120-130	DBTG	6.80	0.00	CD	VIS	334780	4173546	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
989-10	FRESNO	FRE-1671	UNIT C	60-70	DBTG	6.80	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
2212-65	FRESNO	FRE-1671	40N/10E	0-10	DBTG	6.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5354-05	FRESNO	FRE-2168			DBTG	6.80		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1543	FRESNO	FRE-0064	#7/70-80	70-80	FLKTL	6.80		Casa Diablo		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
842	FRESNO	FRE-0064	#6/50-60	50-60	FLKTL	6.80	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
52-1	FRESNO	FRE-0982		0-10	DBTG	6.80	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-4-1	MADERA	MAD-1223		10-20	DBTG	6.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-21-3	MADERA	MAD-1223		130-140	DBTG	6.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-1033-1C	MADERA	MAD-1531	173N/6W	0-10	DBTG	6.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1805-17	FRESNO	FRE-1671	62N/21E	30-40	DBTG	6.80	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-23E	MONO	A07	SUR	SUR	DBTG	6.80	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
4-2	FRESNO	FRE-1363		10-20	DBTG	6.80	8.10	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
54-2	FRESNO	FRE-1365		0-10	DBTG	6.80	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1950-21	FRESNO	FRE-1671	62N/21E	40-50	DBTG	6.80	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1950-23	FRESNO	FRE-1671	62N/21E	40-50	DBTG	6.90	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1973-73	FRESNO	FRE-1671	62N/21E	120-130	DBTG	6.90	0.00	CD	VIS	335900	4176812	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
999-12	FRESNO	FRE-1671	UNIT C	80-90	DBTG	6.90	0.00	CD	VIS	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1649-38	FRESNO	FRE-1671	23N/10E	40-50	DBTG	6.90	0.00	CD	VIS	334867	4175056	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
5-7-8	MADERA	MAD-1223		30-40	DBTG	6.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-14-4	MADERA	MAD-1223		70-80	DBTG	6.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-21-6	MADERA	MAD-1223		130-140	DBTG	6.90	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-817	MADERA	MAD-1531	--	--	CORE	6.90	0.00	CD	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1531-1052-1B	MADERA	MAD-1531	173N/6W	20-30	DBTG	6.90	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1531-1052-1F	MADERA	MAD-1531	173N/6W	20-30	DBTG	6.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1531-1080-1C	MADERA	MAD-1531	173N/6W	50-60	DBTG	6.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1531-1102-B	MADERA	MAD-1531	173N/6W	80-90	DBTG	6.90	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
10546D	TULARE	TUL-0072		30-40	DBTG	6.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
349-52C	MONO	A14	SUR	SUR	DBTG	6.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
349-25	MONO	A07	SUR	SUR	CORE	6.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1289	FRESNO	FRE-1360		10-20	DBTG	7.00	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
00145	FRESNO	FRE-1363		80	BIF	7.00	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
24-1	FRESNO	FRE-1363		20-30	DBTG	7.00	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1951-25	FRESNO	FRE-1671	62N/21E	46-60	DBTG	7.00	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1965-59	FRESNO	FRE-1671	62N/21E	90-100	DBTG	7.00	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
1971-69	FRESNO	FRE-1671	62N/21E	110-120	DBTG	7.00	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
1973-77	FRESNO	FRE-1671	62N/21E	120-130	DBTG	7.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1076-20	FRESNO	FRE-1671	UNIT H	20-30	DBTG	7.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1080-21	FRESNO	FRE-1671	UNIT H	30-40	DBTG	7.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1180-29	FRESNO	FRE-1671	UNIT J	100-110	DBTG	7.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2009-45	FRESNO	FRE-1671	34N/10E	10-20	DBTG	7.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1615	FRESNO	FRE-0064	Unit 5	10-20	FLKTL	7.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5-12-6	MADERA	MAD-1223		50-60	DBTG	7.00	0.00	CD	VIS	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5-17-8	MADERA	MAD-1223		90-100	DBTG	7.00	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5-21-1	MADERA	MAD-1223		130-140	DBTG	7.00	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1531-887	MADERA	MAD-1531	--	--	-MISC?	7.00	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1102-I	MADERA	MAD-1531	173N/6W	80-90	DBTG	7.00	0.00	CD	VIS	307875	4180227	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, volcanic, 10 to 45 percent slopes
2-16-2	MADERA	MAD-0223		90-100	DBTG	7.10	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
349-691	MONO	F163	SUR	SUR	BIF	7.10	0.00	CD	VIS	333858	4172758	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-688	MONO	F163	SUR	SUR	BIF	7.10	0.00	CD	VIS	333292	4175497	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1805-15	FRESNO	FRE-1671	62N/21E	30-40	DBTG	7.10	0.00	CD-SR	XRF	361680	4127440		11	LtP	latest-Pleist	Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes.
978-8	FRESNO	FRE-1671	UNIT C	30-40	DBTG	7.10	0.00	CD-SR	XRF	365910	4133810		11	Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
2132-53	FRESNO	FRE-1671	36N/9E	10-20	DBTG	7.10	0.00	CD	VIS	333843	4177378	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1511	FRESNO	FRE-0064	#7/50-60	50-60	BIF	7.10	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
1531-1033-1F	MADERA	MAD-1531	173N/6W	0-10	DBTG	7.10	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-692	MONO	F163	SUR	SUR	BIF	7.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
UA007	MNO	MNO-0574	UNIT A	020-030	BIF	7.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-84E	MONO	A23	SUR	SUR	DBTG	7.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-268B	MONO	A59	SUR	SUR	DBTG	7.10	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-306E	MONO	A75	SUR	SUR	DBTG	7.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1227	FRESNO	FRE-1360		20-30	DBTG	7.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
31-2	FRESNO	FRE-1363		80-90	DBTG	7.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1963-53	FRESNO	FRE-1671	62N/21E	80-90	DBTG	7.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2029-48	FRESNO	FRE-1671	34N/10E	10-20	DBTG	7.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2181-56	FRESNO	FRE-1671	37N/10E	60-70	DBTG	7.10	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2267-68	FRESNO	FRE-1671	41N/10E	20-30	DBTG	7.10	0.00	CD?	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2342-75	FRESNO	FRE-1671	43N/19E	0-10	DBTG	7.20	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
5-17-2	MADERA	MAD-1223		90-100	DBTG	7.20	0.00	CD	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1531-1027	MADERA	MAD-1531	--	--	FLKTL	7.20		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1531-1080-1A	MADERA	MAD-1531	173N/6W	50-60	DBTG	7.20	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-435B	MONO	W130	SUR	SUR	DBTG	7.20		CD-SR		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes

Appendix D. Casa Diablo Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-02C	MONO	A1	SUR	SUR	DBTG	7.20	0.00	CD	VIS	338434	4174068	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
349-02D	MONO	A1	SUR	SUR	DBTG	7.20	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
349-306D	MONO	A75	SUR	SUR	DBTG	7.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
B	FRESNO	FRE-1440	59N/4E	50-60	DBTG	7.20	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1958-47	FRESNO	FRE-1671	62N/21E	70-80	DBTG	7.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1965-58	FRESNO	FRE-1671	62N/21E	90-100	DBTG	7.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1801-6	FRESNO	FRE-1671	62N/21E	10-20	DBTG	7.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1968-66	FRESNO	FRE-1671	62N/21E	100-110	DBTG	7.30		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1325-36	FRESNO	FRE-1671	77N/39E	20-30	DBTG	7.30		Casa Diablo?		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
2144-54	FRESNO	FRE-1671	37N/10E	30-40	DBTG	7.30	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
5-7-1	MADERA	MAD-1223		30-40	DBTG	7.30		CD-LM		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5-19-1	MADERA	MAD-1223		110-120	DBTG	7.30	0.00	CD	VIS	338453	4174231	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5-19-7	MADERA	MAD-1223		110-120	DBTG	7.30	0.00	CD	VIS	338190	4173894	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-1042-1B	MADERA	MAD-1531	173N/6W	10-20	DBTG	7.30	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
1531-1104-D	MADERA	MAD-1531	173N/6W	90-100	DBTG	7.30	0.00	CD	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1239	FRESNO	FRE-1360		90-105	DBTG	7.30	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
56D	FRESNO	FRE-1363		0-10	DBTG	7.30	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
80-1	FRESNO	FRE-1365		0-10	FLKTL	7.30	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1951-29	FRESNO	FRE-1671	62N/21E	46-60	DBTG	7.30	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1065-19	FRESNO	FRE-1671	UNIT H	0-10	DBTG	7.30	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2191-58	FRESNO	FRE-1671	37N/10E	0-10	DBTG	7.30	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2202-61	FRESNO	FRE-1671	38N/10E	40-50	DBTG	7.30	0.00	CD	VIS	271200	4134900		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
2275-71	FRESNO	FRE-1671	41N/10E	50-60	DBTG	7.40	0.00	CD	VIS	340283	4180894	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes.
2405-79	FRESNO	FRE-1671	62N/12E	50-60	DBTG	7.40		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5-4-2	MADERA	MAD-1223		10-20	DBTG	7.40	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
5-19-4	MADERA	MAD-1223		110-120	DBTG	7.40	0.00	CD	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5-19-8	MADERA	MAD-1223		110-120	DBTG	7.40	0.00	CD	VIS	338190	4173894	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-1094	MADERA	MAD-1531	--	--	PRJPT	7.40	0.00	CD	XRF					Older Pleist.	Older Pleist	San Joaquin loam, 0 to 3 percent slopes
2439-025-a	MONO	MNO-2439	98-1	0-10	DBTG	7.40	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1965-57	FRESNO	FRE-1671	62N/21E	90-100	DBTG	7.40	0.00	CD	VIS	335900	4176812	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
349-52B	MONO	A14	SUR	SUR	DBTG	7.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-306B	MONO	A75	SUR	SUR	DBTG	7.40	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1955-39	FRESNO	FRE-1671	62N/21E	60-70	DBTG	7.40	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1804-9	FRESNO	FRE-1671	62N/21E	20-30	DBTG	7.40	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1971-68	FRESNO	FRE-1671	62N/21E	110-120	DBTG	7.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2275-70	FRESNO	FRE-1671	41N/10E	50-60	DBTG	7.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
2399-78	FRESNO	FRE-1671	62N/12E	30-40	DBTG	7.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
66-2	FRESNO	FRE-0982		0-10	DBTG	7.40	0.00	CD?	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-19-3	MADERA	MAD-1223		110-120	DBTG	7.50	0.00	CD-SR	XRF	314590	4193640		11	Holocene	late-Holo	Watterson gravelly loamy sand, 0 to 4 percent slopes
1531-1061-1H	MADERA	MAD-1531	173N/6W	30-40	DBTG	7.50	9.10	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1531-1080-1B	MADERA	MAD-1531	173N/6W	50-60	DBTG	7.50	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
1805-14	FRESNO	FRE-1671	62N/21E	30-40	DBTG	7.50	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1805-18	FRESNO	FRE-1671	62N/21E	30-40	DBTG	7.50	0.00	CD	VIS	333843	4177378	83		pre-Quat	pre-Quat	Corbett-Railcity families-Rock outcrop complex, 30 to 60 percent slopes.
1953-34	FRESNO	FRE-1671	62N/21E	50-60	DBTG	7.50	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1968-63	FRESNO	FRE-1671	62N/21E	100-110	DBTG	7.50	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1804-7	FRESNO	FRE-1671	62N/21E	20-30	DBTG	7.50	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-14-3	MADERA	MAD-1223		70-80	DBTG	7.50	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
1531-1170	MADERA	MAD-1531	--	--	CORE	7.60	0.00	CD	VIS	334780	4173546	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-4-8	MADERA	MAD-0223		10-20	DBTG	7.60	0.00	CD	XRF	338246	4172768	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2-4-9	MADERA	MAD-0223		10-20	DBTG	7.60	0.00	CD	VIS	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
349-04E	MONO	A2	SUR	SUR	DBTG	7.60	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-15	MONO	A5	SUR	SUR	BIF	7.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-306C	MONO	A75	SUR	SUR	DBTG	7.60	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1953-33	FRESNO	FRE-1671	62N/21E	50-60	DBTG	7.60	0.00	CD?	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
2074-49	FRESNO	FRE-1671	35N/10E	10-20	DBTG	7.70	0.00	CD	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
2202-60	FRESNO	FRE-1671	38N/10E	40-50	DBTG	7.70	0.00	CD	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
5354-09	FRESNO	FRE-2168			DBTG	7.70	0.00	CD	VIS	335363	4172257	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
5-14-10	MADERA	MAD-1223		70-80	DBTG	7.70	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5-17-5	MADERA	MAD-1223		90-100	DBTG	7.70	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
5-19-2	MADERA	MAD-1223		110-120	DBTG	7.80	0.00	CD	VIS	335363	4172257	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
5-21-5	MADERA	MAD-1223		130-140	DBTG	7.80	0.00	CD	VIS	335377	4174264	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1531-497	MADERA	MAD-1531	--	--	FLKTL	7.80	0.00	CD	VIS	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1531-1052-1C	MADERA	MAD-1531	173N/6W	20-30	DBTG	7.80	0.00	CD	XRF	333976	4172626	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1531-1070-1C	MADERA	MAD-1531	173N/6W	40-50	DBTG	7.80	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1971-72	FRESNO	FRE-1671	62N/21E	110-120	DBTG	7.80	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1208-31	FRESNO	FRE-1671	UNIT L	10-20	DBTG	7.80	0.00	CD	XRF	339089	4173449	83		Holocene	latest-Holo	Harrel sandy loam, 0 to 8 percent slopes
1660-41	FRESNO	FRE-1671	23N/10E	70-80	DBTG	7.80	5.70	CD	VIS	338434	4174068	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2321-73	FRESNO	FRE-1671	42N/10E	30-40	DBTG	7.80	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1885	FRESNO	FRE-1671	34N/12E	75	PRJPT	7.90	0.00	CD	XRF	337926	4180777	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
00403	FRESNO	FRE-1964		10	PRJPT	7.90	0.00	CD	VIS	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
00403	FRESNO	FRE-1964		10	PRJPT	7.90	0.00	CD	VIS	335594	4174827	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
5-12	MADERA	MAD-1223		50-60	DBTG	7.90		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
5-14-5	MADERA	MAD-1223		70-80	DBTG	7.90	0.00	CD	VIS	338453	4174231	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-1061-1F	MADERA	MAD-1531	173N/6W	30-40	DBTG	7.90	0.00	CD	VIS	334999	4178042	83		Older Pleist.	Older Pleist	Yellowhills-Brantel families complex, 2 to 5 percent slopes.
2439-002-c	MONO	MNO-2439	SC	SUR	DBTG	7.90	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
349-08D	MONO	A4	SUR	SUR	DBTG	7.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1294	FRESNO	FRE-1360		40-50	DBTG	7.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1804-8	FRESNO	FRE-1671	62N/21E	20-30	DBTG	8.00	0.00	CD	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
968-2	FRESNO	FRE-1671	UNIT C	10-20	DBTG	8.00	0.00	CD	VIS	339269	4173705	83		Volcanics	Latest Holocene Ash/Pumice	Cashbaugh-Buscones-Calpine family complex, 0 to 4 percent slopes
1269-32	FRESNO	FRE-1671	36N/11E	10-20	DBTG	8.00		CD	(V)	329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
1277-33	FRESNO	FRE-1671	36N/12E	+7-0	DBTG	8.00	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
2193-59	FRESNO	FRE-1671	38N/10E	10-20	DBTG	8.00	0.00	CD	XRF	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
1531-909	MADERA	MAD-1531	--	--	PRJPT	8.00	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-1042-1A	MADERA	MAD-1531	173N/6W	10-20	DBTG	8.00	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1080-1J	MADERA	MAD-1531	173N/6W	50-60	DBTG	8.10	0.00	CD	XRF	337926	4180777	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
1531-1102-A	MADERA	MAD-1531	173N/6W	80-90	DBTG	8.10	6.00	CD	XRF	340221	4186690	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, 15 to 30 percent slopes.
1531-1104-C	MADERA	MAD-1531	173N/6W	90-100	DBTG	8.10	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
3-17-4	MADERA	MAD-0397		50-60	DBTG	8.10	0.00	CD	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
1951-28	FRESNO	FRE-1671	62N/21E	46-60	DBTG	8.10	0.00	CD	XRF	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-23B	MONO	A07	SUR	SUR	DBTG	8.20	0.00	CD	XRF	337926	4180777	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
5-4-7	MADERA	MAD-1223		10-20	DBTG	8.20	0.00	CD	VIS	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5-12-7	MADERA	MAD-1223		50-60	DBTG	8.20	0.00	CD	VIS	338434	4174068	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-958	MADERA	MAD-1531	--	--	-MISC?	8.20	0.00	CD-LM	XRF	365910	4133810		11	Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
1531-1042-1H	MADERA	MAD-1531	173N/6W	10-20	DBTG	8.20	0.00	CD	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1531-1061-1C	MADERA	MAD-1531	173N/6W	30-40	DBTG	8.20	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
5363	FRESNO	FRE-2169			CORE	8.20	0.00	CD	VIS	308400	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5-4-9	MADERA	MAD-1223		10-20	DBTG	8.20		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
5-14-1	MADERA	MAD-1223		70-80	DBTG	8.30	0.00	CD	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
5-19-6	MADERA	MAD-1223		110-120	DBTG	8.30	0.00	CD	VIS	338453	4174231	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-1080-1D	MADERA	MAD-1531	173N/6W	50-60	DBTG	8.30	0.00	CD	VIS	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
1531-1096-1E	MADERA	MAD-1531	173N/6W	70-80	DBTG	8.30	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1102-H	MADERA	MAD-1531	173N/6W	80-90	DBTG	8.30	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
3-13-7	MADERA	MAD-0397		30-40	DBTG	8.40	0.00	CD	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
349-01B	MONO	A1	SUR	SUR	DBTG	8.40	0.00	CD	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
349-04D	MONO	A2	SUR	SUR	DBTG	8.40	10.20	CD	VIS	338190	4173894	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
2207-63	FRESNO	FRE-1671	38N/10E	60-70	DBTG	8.40	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
2405-80	FRESNO	FRE-1671	62N/12E	50-60	DBTG	8.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
5-7-7	MADERA	MAD-1223		30-40	DBTG	8.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
5-17-6	MADERA	MAD-1223		90-100	DBTG	8.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1033-1B	MADERA	MAD-1531	173N/6W	0-10	DBTG	8.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1061-1A	MADERA	MAD-1531	173N/6W	30-40	DBTG	8.50	0.00	CD	XRF	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1531-1104-B	MADERA	MAD-1531	173N/6W	90-100	DBTG	8.50	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1975-79	FRESNO	FRE-1671	62N/21E	130-140	DBTG	8.50	0.00	CD	XRF	339664	4180190	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
349-08E	MONO	A4	SUR	SUR	DBTG	8.50	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-23C	MONO	A07	SUR	SUR	DBTG	8.50	0.00	CD	VIS	335900	4176812	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1953-31	FRESNO	FRE-1671	62N/21E	50-60	DBTG	8.60	0.00	CD	VIS	335377	4174264	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1955-37	FRESNO	FRE-1671	62N/21E	60-70	DBTG	8.60	0.00	CD	XRF	333976	4172626	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
2-4-3	MADERA	MAD-0223		10-20	DBTG	8.60	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1310	FRESNO	FRE-1360		20-30	DBTG	8.60	0.00	CD	VIS	336552	4176094	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1950-24	FRESNO	FRE-1671	62N/21E	40-50	DBTG	8.70	0.00	CD	VIS	336710	4172876	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
1968-61	FRESNO	FRE-1671	62N/21E	100-110	DBTG	8.70	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1531-1091-1G	MADERA	MAD-1531	173N/6W	60-70	DBTG	8.70	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
1960-44	FRESNO	FRE-1671	62N/21E	70-80	DBTG	8.70	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
2347-76	FRESNO	FRE-1671	43N/19E	30-40	DBTG	8.70	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1052-1E	MADERA	MAD-1531	173N/6W	20-30	DBTG	8.70	0.00	CD	VIS	271600	4134800		11	pre-Quat	pre-Quat	HOLLAND FAMILY, 5 TO 35 PERCENT SLOPES
5-17-3	MADERA	MAD-1223		90-100	DBTG	8.80	0.00	CD	VIS	335594	4174827	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-02B	MONO	A1	SUR	SUR	DBTG	8.80	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1531-883	MADERA	MAD-1531	--	--	PRJPT	8.80	0.00	CD	VIS	337936	4173072	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
1531-1061-1G	MADERA	MAD-1531	173N/6W	30-40	DBTG	8.80	0.00	CD	VIS	308400	4103440		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
1531-1070-1F	MADERA	MAD-1531	173N/6W	40-50	DBTG	8.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1973-74	FRESNO	FRE-1671	62N/21E	120-130	DBTG	8.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
00329	FRESNO	FRE-1044		40	BIF	8.90	6.40	CD	VIS	335377	4174264	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
368	FRESNO	FRE-1671	UNIT C	63	PRJPT	8.90	0.00	CD	VIS	335153	4173488	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
61-1	FRESNO	FRE-1975		0-10	DBTG	8.90	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
574-115	MNO	MNO-0574	UNIT D	090-100	DEB	8.90	0.00	CD	VIS	338190	4173894	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
5-17-1	MADERA	MAD-1223		90-100	DBTG	8.90	0.00	CD	VIS	335900	4176812	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1531-1033-1J	MADERA	MAD-1531	173N/6W	0-10	DBTG	8.90	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1531-720	MADERA	MAD-1531	--	--	-MISC?	8.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes

Appendix D. Casa Diablo Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group Source	UTM E	UTM N	NAD	Zone	age1	age2	muname
349-02E	MONO	A1	SUR	SUR	DBTG	8.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1033-1A	MADERA	MAD-1531	173N/6W	0-10	DBTG	8.90	0.00	CD	VIS	338529	4181901	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes
1531-1061-1E	MADERA	MAD-1531	173N/6W	30-40	DBTG	9.00	0.00	CD	XRF	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
1531-1080-1I	MADERA	MAD-1531	173N/6W	50-60	DBTG	9.00	0.00	CD	VIS	333015	4175771	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
1531-1096-1F	MADERA	MAD-1531	173N/6W	70-80	DBTG	9.00	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
349-04C	MONO	A2	SUR	SUR	DBTG	9.10	0.00	CD	VIS	333015	4175771	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
349-01D	MONO	A1	SUR	SUR	DBTG	9.10	0.00	CD	XRF	275870	4079100	83		Holocene	latest-Holo	Foster loam, moderately deep, saline-alkali
349-14	MONO	A5	SUR	SUR	BIF	9.10	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
349-23A	MONO	A07	SUR	SUR	DBTG	9.20	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1531-1091-1C	MADERA	MAD-1531	173N/6W	60-70	DBTG	9.20	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
2-13-6	MADERA	MAD-0223		70-80	DBTG	9.20	7.80	CD	VIS	338434	4174068	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
21-1	FRESNO	FRE-1969		10-20	DBTG	9.20	0.00	CD	VIS	337522	4176511	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1531-1061-1J	MADERA	MAD-1531	173N/6W	30-40	DBTG	9.20	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1070-1E	MADERA	MAD-1531	173N/6W	40-50	DBTG	9.40	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
349-04B	MONO	A2	SUR	SUR	DBTG	9.50	0.00	CD	XRF	333976	4172626	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
349-22B	MONO	A07	SUR	SUR	DBTG	9.50	0.00	CD	XRF	274669	4078433	83		Holocene	latest-Holo	Foster loam, saline-alkali
1531-1052-1D	MADERA	MAD-1531	173N/6W	20-30	DBTG	9.50	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1102-F	MADERA	MAD-1531	173N/6W	80-90	DBTG	9.60	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-608A	MONO	F155	SUR	SUR	DBTG	9.60	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
349-22A	MONO	A07	SUR	SUR	DBTG	9.70	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
1531-634	MADERA	MAD-1531	--	--	-MISC?	9.70	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-02A	MONO	A1	SUR	SUR	DBTG	10.00	0.00	CD	XRF	337943	4174459	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1531-11	MADERA	MAD-1531	--	--	-TOOL FRAG	10.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-1070-1J	MADERA	MAD-1531	173N/6W	40-50	DBTG	10.00	0.00	CD	VIS	275478	4088221		11	pre-Quat	pre-Quat	Fallbrook sandy loam, 3 to 9 percent slopes
1531-1091-1B	MADERA	MAD-1531	173N/6W	60-70	DBTG	10.20	0.00	CD	XRF	337962	4175175	83		Older Pleist.	Older Pleist	Kiona family-Rock outcrop complex, 5 to 30 percent slopes.
1281-35	FRESNO	FRE-1671	36N/12E	0-10	DBTG	10.40	0.00	CD	VIS	334999	4178042	83		Older Pleist.	Older Pleist	Yellowhills-Brantel families complex, 2 to 5 percent slopes.
1956-42	FRESNO	FRE-1671	62N/21E	60-70	DBTG	10.70	0.00	CD	VIS	337111	4176203	83		pre-Quat	pre-Quat	Torriorthentic Haploxerolls-Rock outcrop complex, 2 to 15 percent slopes.
1801-3	FRESNO	FRE-1671	62N/21E	10-20	DBTG	11.60	0.00	CD	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
349-22D	MONO	A07	SUR	SUR	DBTG	11.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1052-1G	MADERA	MAD-1531	173N/6W	20-30	DBTG	12.00	0.00	CD	VIS	307609	4180226	83	11	pre-Quat	pre-Quat	Rock outcrop-Typic Cryorthents complex, 0 to 45 percent slopes
Non-cultural	MONO	MNO-2440	CU-6	Strat 2	GEO	12.80	0.00	CD	XRF	277000	4125800		11	pre-Quat	pre-Quat	HOLLAND-CHAIX FAMILIES COMPLEX, 5 TO 35 PERCENT SLOPES
5-14-2	MADERA	MAD-1223		70-80	DBTG	12.80	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-720	MADERA	MAD-1531	--	--	-MISC?	12.90	0.00	CD	XRF	252959	4102796		11	pre-Quat	pre-Quat	Ahwahnee and Vista rocky coarse sandy loams, 8 to 30 percent slopes
1531-1052-1G	MADERA	MAD-1531	173N/6W	20-30	DBTG	13.50	0.00	CD	VIS	308900	4105000		11	pre-Quat	pre-Quat	UMPA FAMILY, 5 TO 35 PERCENT SLOPES
54-1	FRESNO	FRE-1973		0-10	DBTG	31.00		CD	(V)	328094	4174326	83	11	Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Vitrandic Xerorthents, ashy, warm complex, 0 to 15
574-100	MNO	MNO-0574	UNIT D	080-090	DEB	34.00		CD	(V)	327942	4174781	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
4974	TULARE	TUL-1198			BIF	1.00	0.00	COSO	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5165	TULARE	TUL-1247			DBTG	1.00	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
41-551	TULARE	TUL-0621		0-10	PRJPT	1.00	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
5172-16	TULARE	TUL-1248			DBTG	1.10	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5263	TULARE	TUL-1253			DBTG	1.10	0.00	COSO	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-797	TULARE	TUL-0024		6-12"	PRJPT	1.10	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
365	TULARE	05-13-56-36		SURFACE	PRJPT	1.20	0.00	COSO	XRF	394868	3978067		11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
5163-01	TULARE	TUL-1247			DBTG	1.20	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5163-02	TULARE	TUL-1247			DBTG	1.20	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5163-06	TULARE	TUL-1247			DBTG	1.20	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-06	TULARE	TUL-1248			DBTG	1.20	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5177	TULARE	TUL-1248			DBTG	1.20	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
41-681	TULARE	TUL-0621		10-20	PRJPT	1.20	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
5167	TULARE	TUL-1247			DBTG	1.30	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-05	TULARE	TUL-1248			DBTG	1.30	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-09	TULARE	TUL-1248			DBTG	1.30	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
1513-24-1260	TULARE	TUL-0024		0-6"	PRJPT	1.30	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
987-105.0262	INYO	INY-1906	N28/W151	0-10	PRJPT	1.30	999.00	COSO-JR	XRF	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-31.0111	INYO	INY-1816	S135/E30	TRAN. F	CORE	1.40	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0263	INYO	INY-1906	N28/W151	0-10	FLAKE BLANK	1.40	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
1351-24-883A	TULARE	TUL-0024		30-36"	BIF	1.40	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
41-102	TULARE	TUL-0621		0-10	PRJPT	1.40	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
082	TULARE	PCT-15		20-30	PRJPT	1.40	0.00	COSO	XRF	408122	3964010		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
987-105.0257	INYO	INY-1906	N15/W156	0-10	DBTG	1.50	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1311.0001	INYO	INY-1923	TU 1	0-10	DBTG	1.50	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
9999	TULARE	TUL-1237			PRJPT	1.50	0.00	COSO	XRF	386535	4037050		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5172-10	TULARE	TUL-1248			DBTG	1.50	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-11	TULARE	TUL-1248			DBTG	1.50	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-13	TULARE	TUL-1248			DBTG	1.50	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5249-01	TULARE	TUL-1250			DBTG	1.50	0.00	COSO	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-1326	TULARE	TUL-0024		24-30"	PRJPT	1.50	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1350-24-2826A	TULARE	TUL-0024		0-12"	PRJPT	1.50	5.20	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5275	TULARE	TUL-0304			PRJPT	1.50	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-105.0249	INYO	INY-1906	N15/W156	0-10	PRJPT	1.50	999.00	COSO-SLM	XRF	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
45	INYO	INY-4663	SCU; N10/W25		PRJPT	1.60	0.00	COSO-WSL	XRF	398880	4063260		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
987-105.0257	INYO	INY-1906	N15/W156	0-10	DBTG	1.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0268	INYO	INY-1906	N28/W152	0-10	DBTG	1.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5172-02	TULARE	TUL-1248			DBTG	1.60	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-03	TULARE	TUL-1248			DBTG	1.60	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-08	TULARE	TUL-1248			DBTG	1.60	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-15	TULARE	TUL-1248			DBTG	1.60	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-01	TULARE	TUL-1248			DBTG	1.60	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5255-01	TULARE	TUL-1252			DBTG	1.60	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5266	TULARE	TUL-1253			DBTG	1.60	0.00	COSO	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
41-549	TULARE	TUL-0621		0-10	PRJPT	1.60	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
5172-12	TULARE	TUL-1248			DBTG	1.70	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-14	TULARE	TUL-1248			DBTG	1.70	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-17	TULARE	TUL-1248			DBTG	1.70	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
1348-24-1551	TULARE	TUL-0024		6"	PRJPT	1.70	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5271	TULARE	TUL-0304			DBTG	1.70	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
41-550	TULARE	TUL-0621		0-10	PRJPT	1.70	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
41-682	TULARE	TUL-0621		10-20	PRJPT	1.70	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
12B28	TULARE	RB-12		0-10	PRJPT	1.70	0.00	COSO	XRF	396743	3984777	83	11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
5212	TULARE	TUL-1258			BIF	1.80	0.00	COSO	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
41052-02	KER	KER-5373/H	RRU 27, 40-80		debitage	1.80	13.00	Coso'		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
5172-06	TULARE	TUL-1248			DBTG	1.80	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5179	TULARE	TUL-1248			FLKTL	1.80	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
1353-24-1389	TULARE	TUL-0024		12-18"	PRJPT	1.80	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
39-008	TULARE	TUL-0629		0-10	PRJPT	1.80	0.00	COSO	XRF	403950	3968485		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
083	TULARE	PCT-15		20-30	PRJPT	1.80	0.00	COSO	XRF	408122	3964010		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
987-105.0268	INYO	INY-1906	N28/W152	0-10	DBTG	1.90	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
1353-24-2447	TULARE	TUL-0024		0-12"	PRJPT	1.90	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
069	TULARE	PCT-15		0-10	PRJPT	1.90	0.00	COSO	XRF	408122	3964010		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
41005-05	KER	KER-5373/H	RRU 23, 0-40		debitage	2.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
5143	TULARE	TUL-0103			DBTG	2.00	0.00	COSO	XRF	380400	4039550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
EU4	TULARE	TUL-1227		20-30	DBTG	2.00	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
1353-24-1184	TULARE	TUL-0024		18-24"	PRJPT	2.00	7.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1350-24-2509B	TULARE	TUL-0024		12-24"	PRJPT	2.00	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5274	TULARE	TUL-0304			DBTG	2.00	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
41-680	TULARE	TUL-0621		10-20	PRJPT	2.00	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
5329-10	FRESNO	87A-31			DBTG	2.10	0.00	COSO	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-634	TULARE	TUL-0024		0-6"	PRJPT	2.10	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
32020-04	KER	KER-3080	EU 8, 20-40		debitage	2.20		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
5172-05	TULARE	TUL-1248			DBTG	2.20	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5172-07	TULARE	TUL-1248			DBTG	2.20	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5174	TULARE	TUL-1248			DBTG	2.20	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
41-334	TULARE	TUL-0621		40-50	PRJPT	2.20	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
12A27	TULARE	RB-12		10-20	PRJPT	2.20	0.00	COSO	XRF	396743	3984777	83	11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
987-108.0003	INYO	INY-1965	SURF	SURF	DBTG	2.30	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5074	TULARE	TUL-1232			BIF	2.30	0.00	COSO	XRF	353800	4053750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5116	TULARE	TUL-1241			BIF	2.30	0.00	COSO	XRF	384950	4036300		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-1019	TULARE	TUL-0024		0-6"	PRJPT	2.30	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
50	INYO	INY-5298	3C		PRJPT	2.40	0.00	COSO-WSL	XRF	409960	4047970		11	Holocene	latest-Holo	Torrifluvents, 0 to 2 percent slopes
987-26.0651	INYO	INY-1824	N132/E117	0-10	BIF	2.40	7.70	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5163-04	TULARE	TUL-1247			DBTG	2.40	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
7318	TULARE	TUL-0024		20-30	PRJPT	2.40	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-1491	TULARE	TUL-0024		6-12"	PRJPT	2.40	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
41-097	TULARE	TUL-0621		0-10	PRJPT	2.40	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
41-683	TULARE	TUL-0621		10-20	PRJPT	2.40	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
39-203	TULARE	TUL-0629		20-30	PRJPT	2.40	0.00	COSO	XRF	403950	3968485		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
5163-09	TULARE	TUL-1247			DBTG	2.50	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5251	TULARE	TUL-1250			DBTG	2.50	0.00	COSO	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5255-02	TULARE	TUL-1252			DBTG	2.50	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1101	TULARE	RB-11		SURFACE	PRJPT	2.50	0.00	COSO	XRF	396321	3983406	83	11	pre-Quat	pre-Quat	Rock outcrop-Tollhouse complex, 15 to 30 percent slopes
98-1309.0057	INYO	INY-1923	TU 1	SURF	DBTG	2.60	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
5085	TULARE	TUL-1237			BIF	2.60	0.00	COSO	XRF	386535	4037050		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5086	TULARE	TUL-1237			BIF	2.60	0.00	COSO	XRF	386535	4037050		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5087	TULARE	TUL-1237			PRJPT	2.60	0.00	COSO	XRF	386535	4037050		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1525-24-794	TULARE	TUL-0024		0-6"	PRJPT	2.60	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-2823	TULARE	TUL-0024		0-12"	PRJPT	2.60	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
8100	TULARE	TUL-0024		40-50	PRJPT	2.60	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1523-24-847	TULARE	TUL-0024		0-6"	PRJPT	2.60	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5269-03	TULARE	TUL-0304			DBTG	2.60	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5120	TULARE	TUL-1241			BIF	2.70	0.00	COSO	XRF	384950	4036300		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
060-001	KERN	KER-5582	SCA 21	Surface	DEB	2.80		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
060-001	KERN	KER-5582	SCA-21	SUR	DEB	2.80		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-93	INYO	INY-0372	UNIT-X1	40-50	DBTG	2.80	1.70	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
5090	TULARE	TUL-1238			BIF	2.80	0.00	COSO	XRF	385825	4036600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5252	TULARE	TUL-1250			DBTG	2.80	0.00	COSO	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-1434	TULARE	TUL-0024		20"	PRJPT	2.80	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
W-2-2735	KER	KER-0116	T4, Level C		biface	2.90		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
48	INYO	INY-5298	3C		PRJPT	2.90	0.00	COSO-WSL	XRF	409960	4047970		11	Holocene	latest-Holo	Torrifluvents, 0 to 2 percent slopes
5192-02	TULARE	TUL-1257			DBTG	2.90	0.00	COSO	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5172-07	TULARE	TUL-1248			DBTG	2.90	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5250	TULARE	TUL-1250			DBTG	2.90	0.00	COSO	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
10543A	TULARE	TUL-0072		0-10	DBTG	2.90	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
002-001	KERN	KER-5582	CU 1	10-20 cm	BIF	3.00		COSO-WS		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
002-001	KERN	KER-5582	CU-1	10-20 cm	BIF	3.00		COSO-WS		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
EU1	TULARE	TUL-1227		50-60	DBTG	3.00	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
1353-24-2537	TULARE	TUL-0024		24-36"	PRJPT	3.00	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
39-528	TULARE	TUL-0629		10-20	PRJPT	3.00	0.00	COSO	XRF	403950	3968485		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
5104	TULARE	TUL-1240			BIF	3.10	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5104	TULARE	TUL-1240			BIF	3.10	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5104	TULARE	TUL-1240			BIF	3.10	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5104	TULARE	TUL-1240			BIF	3.10	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5117	TULARE	TUL-1241			BIF	3.10	0.00	COSO	XRF	384950	4036300		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1524-24-776	TULARE	TUL-0024		6-12"	PRJPT	3.10	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1527-24-2538	TULARE	TUL-0024		24-36"	PRJPT	3.10	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
41	INYO	INY-3782/H	SCU; N45/W40		PRJPT	3.20	0.00	COSO-WSL	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
W-2-2266	KER	KER-0116	EU 35, 30-40		PPT	3.20		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
5329-05	FRESNO	87A-31			DBTG	3.20	0.00	COSO	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1520-24-1891	TULARE	TUL-0024		24-30"	PRJPT	3.20	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
12B3	TULARE	RB-12		SURFACE	PRJPT	3.20	0.00	COSO	XRF	396743	3984777	83	11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
037-001	KERN	KER-5582	CU 4	60-70 cm	DEB	3.30		COSO-SM		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
037-001	KERN	KER-5582	CU-4	60-70 cm	DEB	3.30		COSO-SM		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
5193	TULARE	TUL-1257			DBTG	3.30	0.00	COSO	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
EU1	TULARE	TUL-1227		40-50	DBTG	3.30	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5236-06	TULARE	TUL-1249			DBTG	3.30	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
212	INYO	INY-3802/H	SCU; S5/E55		PRJPT	3.40	0.00	COSO-WSL	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
51	INYO	INY-5298	3C	A	DBTG	3.40	0.00	COSO-WSL	XRF	409960	4047970		11	Holocene	latest-Holo	Torrifluvents, 0 to 2 percent slopes
5119	TULARE	TUL-1241			BIF	3.40	0.00	COSO	XRF	384950	4036300		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5236-12	TULARE	TUL-1249			BIF	3.40	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5264	TULARE	TUL-1253			DBTG	3.40	0.00	COSO	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5269-04	TULARE	TUL-0304			DBTG	3.40	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5270	TULARE	TUL-0304			DBTG	3.40	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
161-003-	Kern	KER-5373/H	SS 1	0-20	Debitage	3.41		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
161-003-	Kern	KER-5373/H	SS 1	0-20	Debitage	3.41		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
W-2-0096	KER	KER-0116	EU 15, 40-50		PPT	3.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
5115	TULARE	TUL-1240			FLKTL	3.60	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5115	TULARE	TUL-1240			FLKTL	3.60	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
5115	TULARE	TUL-1240			FLKTL	3.60	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5115	TULARE	TUL-1240			FLKTL	3.60	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5236-07	TULARE	TUL-1249			DBTG	3.60	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5256	TULARE	TUL-1252			DBTG	3.60	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
144-002	Kern	KER-5404	CU2	0-10	Projectile Point	3.61		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
144-002	Kern	KER-5404	CU-2	0-10	Projectile Point	3.65		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
108	KER	KER-3377	1	030-040	DEB	3.70		COSO		428255	3863608	83	11	Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
EU4	TULARE	TUL-1227		60-70	DBTG	3.70	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5129	TULARE	TUL-1242			FLKTL	3.70	0.00	COSO	XRF	385650	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5312-03	TULARE	TUL-1265			DBTG	3.70	0.00	COSO	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-168	TULARE	TUL-0024		12"	PRJPT	3.70	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
78	INYO	INY-4934	3C		PRJPT	3.80	0.00	COSO-WSL	XRF	421000	3964800		11	Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-26.0588	INYO	INY-1824	N104/E113	0-10	BIF	3.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5113	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5113	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5113	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5113	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5114	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5114	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5114	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5114	TULARE	TUL-1240			DBTG	3.80	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5164	TULARE	TUL-1247			DBTG	3.80	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5173	TULARE	TUL-1248			DBTG	3.80	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
5236-13	TULARE	TUL-1249			DBTG	3.80	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-166	TULARE	TUL-0024		11"	PRJPT	3.80	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5269-01	TULARE	TUL-0304			DBTG	3.80	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-85.0006	INYO	INY-1969	L. 3	SURF	PRJPT	3.80	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-2365	KER	KER-0116	T2,50-60		core	3.90		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-2182	KER	KER-0116	EU 39, 70-80		debitage	3.90		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
984-241.0024	INYO	INY-1829C			CORE	3.90	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
5255-02	TULARE	TUL-1252			DBTG	3.90	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5259	TULARE	TUL-1252			DBTG	3.90	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5262-05	TULARE	TUL-1253			DBTG	3.90	0.00	COSO	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
W-2-1999	KER	KER-0116	EU 2, 50-60		debitage	4.00		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
32021-06	KER	KER-3080	EU 8, 40-60		debitage	4.00		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
5017	TULARE	TUL-1198			DBTG	4.00	0.00	COSO	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		60-70	DBTG	4.00	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5091	TULARE	TUL-1239			BIF	4.00	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5118	TULARE	TUL-1241			CORE	4.00	0.00	COSO	XRF	384950	4036300		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5311-07	TULARE	TUL-1264			DBTG	4.00	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-99B	TULARE	TUL-0024		9"	PRJPT	4.00	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
016-001	KERN	KER-2107	SCA 1	Surface	DEB	4.00		COSO		264674	3944528	83	11	LtP	term Pleist	Garces silt loam
016-001	KERN	KER-2107	SCA-1	SUR	DEB	4.00		COSO		264674	3944528	83	11	LtP	term Pleist	Garces silt loam
W-2-2259	KER	KER-0116	T1, Level B		PPT	4.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-135	INYO	INY-0372	UNIT-X1	70-80	DBTG	4.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
5092	TULARE	TUL-1239			BIF	4.10	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-2825	TULARE	TUL-0024		0-12"	PRJPT	4.10	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
987-142.0007	INYO	INY-1935	D-PRIME	0-10	DBTG	4.10	999.00	COSO-WSL	XRF	430826	3988894	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-2307	KER	KER-0116	EU 11, 40-50		biface	4.20		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-0226	KER	KER-0116	EU 78,10-20		PPT	4.20		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
103-001	KERN	KER-5582	SP 32	40-60 cm	DEB	4.20		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
103-001	KERN	KER-5582	SP-32	40-60 cm	DEB	4.20		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
5071	TULARE	TUL-1231			BIF	4.20	0.00	COSO	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5236-01	TULARE	TUL-1249			DBTG	4.20	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1348-24-908	TULARE	TUL-0024		0-6"	PRJPT	4.20	1.80	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-99A	TULARE	TUL-0024		9"	PRJPT	4.20	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
987-157.0011	INYO	INY-1928	L. 3, D.3	SURF	PRJPT	4.20	999.00	COSO-SLM	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-142.0007	INYO	INY-1935	D-PRIME	0-10	DBTG	4.20	999.00	COSO-WSL	XRF	430826	3988894	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-0313	KER	KER-0116	surface		PPT	4.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1600b	KER	KER-0116	EU 38, 30-40		debitage	4.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
81-233-009-004	INYO	INY-5282	N0/E0	-	PRJPT	4.30		CS-WCP		390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
41083-02	KER	KER-5373/H	CU 1, 10-20		debitage	4.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
EU4	TULARE	TUL-1227		70-80	DBTG	4.30	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5273	TULARE	TUL-0304			DBTG	4.30	0.00	COSO	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
6A01	TULARE	RB-6		SURFACE	PRJPT	4.30	0.00	COSO	XRF	395315	3979581	83	11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
987-157.0012	INYO	INY-1928	L. 3, D.3	SURF	PRJPT	4.30	999.00	COSO-WSL	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
428	INYO	INY-3782/H	SCU; S60/W165		PRJPT	4.40	0.00	COSO-SLM	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
131-X1-33	INYO	INY-0372	UNIT-X1	0-10	DBTG	4.40	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-93	INYO	INY-0372	UNIT-X1	40-50	DBTG	4.40	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-85.0023	INYO	INY-1969	TU L4	0-10	DBTG	4.40	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0023	INYO	INY-1969	TU L4	0-10	DBTG	4.40	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5242	TULARE	TUL-1249			DBTG	4.40	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5253	TULARE	TUL-1250			DBTG	4.40	0.00	COSO	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
182-002	Kern	KER-5392	SS 4	0-10	Projectile Point	4.41		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
651	INYO	INY-3782/H	SURFACE		PRJPT	4.50	0.00	COSO-WSL	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
43013-02	KER	KER-5392	RRU 46, 0-40		debitage	4.50		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
059-001	KERN	KER-5582	SCA 20	Surface	DEB	4.50		COSO-WS		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
059-001	KERN	KER-5582	SCA-20	SUR	DEB	4.50		COSO-WS		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-170	INYO	INY-0372	UNIT-X1	90-100	DBTG	4.50	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-93	INYO	INY-0372	UNIT-X1	40-50	DBTG	4.50	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
98-803.0002	INYO	INY-1923			BIF	4.50	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0013	INYO	INY-1969	TU	10-20	DBTG	4.50	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
10545C	TULARE	TUL-0072		20-30	DBTG	4.50	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
987-157.0010	INYO	INY-1928	L. 3, D.3	SURF	PRJPT	4.50	999.00	COSO-WSL	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
984-156.0010	INYO	INY-1829	UNIT 224		DBTG	4.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0162	INYO	INY-1906	N16.1/W155.4		FLAKE BLANK	4.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5126	TULARE	TUL-1242			DBTG	4.60	0.00	COSO	XRF	385650	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5260	TULARE	TUL-1252			DBTG	4.60	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5312-06	TULARE	TUL-1265			DBTG	4.60	0.00	COSO	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
39-347	TULARE	TUL-0629		10-20	PRJPT	4.60	0.00	COSO	XRF	403950	3968485		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes
2002	TULARE	RB-20		SURFACE	PRJPT	4.60	0.00	COSO	XRF	394686	3977985	83	11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
987-142.0007	INYO	INY-1935	D-PRIME	0-10	DBTG	4.60	999.00	COSO-WSL	XRF	430826	3988894	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
69	INYO	INY-5292	3C	C	DBTG	4.70	0.00	COSO-WSL	XRF	411530	4047480		11	Holocene	late-Holo	Seaman-Yellowrock-Cajon complex, 0 to 2 percent slopes
80	INYO	INY-2758	3C		PRJPT	4.70	0.00	COSO-WSL	XRF	419750	3970380		11	Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
13129-01	KER	KER-5373/H	SP 29, 0-50		debitage	4.70	17.20	Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
195-001	Kern	KER-3168	SCA 1	Surface	Projectile Point	4.70		Coso						Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-85.0012	INYO	INY-1969	TU L1	0-10	DBTG	4.70	999.00	COSO	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5096	TULARE	TUL-1239			DBTG	4.70	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5163-03	TULARE	TUL-1247			DBTG	4.70	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
41-103	TULARE	TUL-0621		0-10	PRJPT	4.70	0.00	COSO	XRF	404083	3968502		11	pre-Quat	pre-Quat	Scodie-Canebrake-Deadfoot complex, 30 to 60 percent slopes

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-106.0002	INYO	INY-1923	88M 0o	SURF	BIF	4.70	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0013	INYO	INY-1969	TU	10-20	DBTG	4.70	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0023	INYO	INY-1969	TU L4	0-10	DBTG	4.70	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-1734	KER	KER-0116	EU55, 40-50		biface	4.80		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
10545D	TULARE	TUL-0072		20-30	DBTG	4.80	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
81-248-1-1	INYO	INY-5267	N69.5/W7.2	-	DRILL	4.81		CS-WS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
195-001	Kern	KER-3168	SCA 1	Surface	Projectile Point	4.87		Coso						Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
0127 -01-a	KER	KER-4732	CU 5, 40-50		core	4.90		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
W-2-1418	KER	KER-0116	EU 17, 110-120		debitage	4.90		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1909	KER	KER-0116	EU 78, 90-100		uniface	4.90		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
79	INYO	INY-4934	3C		PRJPT	4.90	0.00	COSO-WSL	XRF	421000	3964800		11	Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-26.0701	INYO	INY-1824	N174/E107	90-100	DBTG	4.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5097	TULARE	TUL-1239			DBTG	4.90	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5128	TULARE	TUL-1242			DBTG	4.90	0.00	COSO	XRF	385650	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5236-18	TULARE	TUL-1249			DBTG	4.90	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5237	TULARE	TUL-1249			DBTG	4.90	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5243	TULARE	TUL-1249			DBTG	4.90	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5244	TULARE	TUL-1249			DBTG	4.90	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5255-03	TULARE	TUL-1252			DBTG	4.90	0.00	COSO	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-142.0007	INYO	INY-1935	D-PRIME	0-10	DBTG	4.90	999.00	COSO-WSL	XRF	430826	3988894	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0026	INYO	INY-1969	TU L4	30-40	DBTG	4.90	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0026	INYO	INY-1969	TU L4	30-40	DBTG	4.90	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0071	INYO	INY-1824	LZ	40-50	DBTG	5.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0700	INYO	INY-1824	N174/E107	80-90	DBTG	5.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0700	INYO	INY-1824	N174/E107	80-90	DBTG	5.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0701	INYO	INY-1824	N174/E107	90-100	DBTG	5.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0701	INYO	INY-1824	N174/E107	90-100	DBTG	5.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0003	INYO	INY-1906	CSC,3X3, L2		DBTG	5.00	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5099	TULARE	TUL-1239			DBTG	5.00	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-2605	TULARE	TUL-0024		12-24"	PRJPT	5.00	2.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-126A	TULARE	TUL-0024		18-24"	PRJPT	5.00	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10542B	TULARE	TUL-0072		SURFACE	DBTG	5.00	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
98-934.0001	INYO	INY-1829	TS 2027	SURF	PRJPT	5.00	0.00	COSO-WSL	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
192-001	KERN	KER-3079		0-10 cm		5.06		COSO		285848	3908377	83		Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
192-001	Kern	KER-3079	SS S2.40W 1.40	0-10	Projectile Point	5.06		Coso		285848	3908377	83		Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
43010-09	KER	KER-5392	RRU 44, 40-80		biface	5.10		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
31033-02	KER	KER-3080	RRU 24,0-10		debitage	5.10		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
005-001	KERN	KER-5582	CU 1	40-50 cm	BIF	5.10		COSO-SM		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
005-002	KERN	KER-5582	CU-1	40-50 cm	BIF	5.10		COSO-SM		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
987-26.0700	INYO	INY-1824	N174/E107	80-90	DBTG	5.10	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5311-10	TULARE	TUL-1264			DBTG	5.10	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1353-24-126B	TULARE	TUL-0024		18-24"	PRJPT	5.10	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
W-2-0350	KER	KER-0116	surface		biface	5.20		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
5236-10	TULARE	TUL-1249			DBTG	5.20	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5238	TULARE	TUL-1249			DBTG	5.20	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5249-01	TULARE	TUL-1250			DBTG	5.20	0.00	COSO	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5311-03	TULARE	TUL-1264			DBTG	5.20	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5311-08	TULARE	TUL-1264			DBTG	5.20	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1350-24-2826B	TULARE	TUL-0024		0-12"	PRJPT	5.20	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
987-105.0003	INYO	INY-1906	CSC,3X3, L2		DBTG	5.20	999.00	COSO-SLM	XRF	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
W-2-1391	KER	KER-0116	EU 14, 180-190		debitage	5.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1892	KER	KER-0116	EU 76, 20-30		debitage	5.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
058-001	KERN	KER-5582	SCA 19	Surface	DEB	5.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
058-001	KERN	KER-5582	SCA-19	SUR	DEB	5.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-66	INYO	INY-0372	UNIT-X1	20-30	DBTG	5.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-82	INYO	INY-0372	UNIT-X1	30-40	DBTG	5.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
73	INYO	INY-3820	3C	J	DBTG	5.30	0.00	COSO-WSL	XRF	415550	3985640		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
41001-02	KER	KER-5373/H	RRU 21, 0-40		debitage	5.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0071	INYO	INY-1824	LZ	40-50	DBTG	5.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-152.0022	INYO	INY-1829	UNIT 131		DBTG	5.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0390	INYO	INY-1906	N81/E337	0-10	DBTG	5.30	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0116	INYO	INY-1907	N18/E37	20-30	BIF	5.30	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-803.0001	INYO	INY-1923			BIF	5.30	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0013	INYO	INY-1969	TU	10-20	DBTG	5.30	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5041	TULARE	TUL-1198			BIF	5.30	0.00	COSO	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5095	TULARE	TUL-1239			DBTG	5.30	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5245	TULARE	TUL-1249			DBTG	5.30	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5246	TULARE	TUL-1249			DBTG	5.30	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5311-02	TULARE	TUL-1264			DBTG	5.30	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0071	INYO	INY-1824	LZ	40-50	DBTG	5.30	999.00	COSO-JR	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0012	INYO	INY-1969	TU	0-10	DBTG	5.30	7.80	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
408-002	Kern	KER-3080	SS 102.03	0-20	Projectile Point	5.35		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-0395	KER	KER-0116	surface		biface	5.40		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1722	KER	KER-0116	EU 54, 60-70		debitage	5.40		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
0036-01-a	KER	KER-4732	SSU 1, 0-10		debitage	5.40		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
131-X1-153	INYO	INY-0372	UNIT-X1	80-90	DBTG	5.40	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
41070-02	KER	KER-5373/H	EU 3, 60-80		debitage	5.40		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
5349	FRESNO	FRE-2168			BIF	5.40	0.00	COSO	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
984-164.0010	INYO	INY-1829	UNIT 50		DBTG	5.40	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0382	INYO	INY-1906	N74/E276	0-10	BIF	5.40	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0026	INYO	INY-1969	TU L4	30-40	DBTG	5.40	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5240	TULARE	TUL-1249			DBTG	5.40	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5262-01	TULARE	TUL-1253			DBTG	5.40	0.00	COSO	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5262-02	TULARE	TUL-1253			DBTG	5.40	0.00	COSO	XRF	352050	4023250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0083	INYO	INY-1824	L.Y	SURF	DBTG	5.40	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-263.0013	INYO	INY-1860	TU	20-30	DBTG	5.50	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
408-002	Kern	KER-3080	SS 102.03	0-20	Projectile Point	5.50		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-263.0009	INYO	INY-1860	TU	0-10	DBTG	5.50	999.00	COSO-JR	XRF	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
052-001	KERN	KER-5582	SCA 13	Surface	DEB	5.50		COSO-SM		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
052-001	KERN	KER-5582	SCA-13	SUR	DEB	5.50		COSO-SM		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
987-105.0059	INYO	INY-1906	N72.5/E276.7	SURF	BIF	5.50	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0317	INYO	INY-1906	N60/E31	30-40	BIF	5.50	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0118	INYO	INY-1907	N18/E37	20-30	BIF	5.50	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0232	INYO	INY-1907	N18/E38	40-48	DBTG	5.50	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1411.0381	INYO	INY-1923	TU 1	60-70	DBTG	5.50	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0013	INYO	INY-1969	TU	10-20	DBTG	5.50	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5100	TULARE	TUL-1239			DBTG	5.50	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5163-03	TULARE	TUL-1247			DBTG	5.50	0.00	COSO	XRF	350330	4036540		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
987-107.0002	INYO	INY-1924	TU 1	0-10	DBTG	5.50	999.00	COSO-WSL	XRF	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0023	INYO	INY-1969	TU L4	0-10	DBTG	5.50	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
31 0-004	Kern	KER-5373/H	SS 108	0-20	Debitage	5.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
31 0-004	Kern	KER-5373/H	SS 108	0-20	Debitage	5.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
313-002	Kern	KER-3080	SS 9828E1640N	0-20	Projectile Point	5.53		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-263.0013	INYO	INY-1860	TU	20-30	DBTG	5.60	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
43041-04	KER	KER-5392	EU 4, 20-40		biface	5.60		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
43050-02	KER	KER-5392	EU 4,80-100		debitage	5.60	7.20	Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-26.0064	INYO	INY-1824	LZ	0-10	DBTG	5.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0595	INYO	INY-1824	N104/E113	10-20	BIF	5.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0676	INYO	INY-1824	N174/E107	10-20	BIF	5.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0701	INYO	INY-1824	N174/E107	90-100	DBTG	5.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-164.0010	INYO	INY-1829	UNIT 50		DBTG	5.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-164.0010	INYO	INY-1829	UNIT 50		DBTG	5.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0295	INYO	INY-1906	N39.5/W2	20-30	BIF	5.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0380	INYO	INY-1906	N74/E275	0-10	FLKTL	5.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0390	INYO	INY-1906	N81/E337	0-10	DBTG	5.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0009	INYO	INY-1906	TU 1	50-60	DBTG	5.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0155	INYO	INY-1907	N18/E38	20-30	BIF	5.60	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0183	INYO	INY-1907	N27/E42	10-20	BIF	5.60	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-107.0002	INYO	INY-1924	TU 1	0-10	DBTG	5.60	999.00	COSO	VIS	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5236-09	TULARE	TUL-1249			DBTG	5.60	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
986-1.0001	INYO	INY-1816		SURF	PRJPT	5.60	999.00	COSO-WSL	XRF	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-451.0001	INYO	INY-1923			BIF	5.60	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0026	INYO	INY-1969	TU L4	30-40	DBTG	5.60	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
581	INYO	INY-3782/H	CU; S53/W221	70-80	PRJPT	5.70	0.00	COSO-WSL	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
W-2-0204	KER	KER-0116	EU 61 a, 10-20		PPT	5.70		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1773	KER	KER-0116	EU 58,130-140		debitage	5.70		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
31013-02	KER	KER-3080	EU 2, 20-40		debitage	5.70		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
32030-02	KER	KER-3080	RRU 34, 0-40		debitage	5.70		Coso?		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-26.0064	INYO	INY-1824	LZ	0-10	DBTG	5.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0078	INYO	INY-1824	7M153 DB	SURF	BIF	5.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0419	INYO	INY-1824	N93/E114	0-10	BIF	5.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-164.0011	INYO	INY-1829	UNIT 50		DBTG	5.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0366	INYO	INY-1906	N68/E273	0-10	CORE	5.70	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0218	INYO	INY-1907	N26.5/E42	20-30	FLKTL	5.70	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-107.0002	INYO	INY-1924	TU 1	0-10	DBTG	5.70	999.00	COSO	VIS	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-107.0002	INYO	INY-1924	TU 1	0-10	DBTG	5.70	999.00	COSO	VIS	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-107.0007	INYO	INY-1924	TU 1	40-50	DBTG	5.70	999.00	COSO	VIS	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0012	INYO	INY-1969	TU	0-10	DBTG	5.70	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0022	INYO	INY-1969	TU L3	30-40	DBTG	5.70	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0022	INYO	INY-1969	TU L3	30-40	DBTG	5.70	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0023	INYO	INY-1969	TU L4	0-10	DBTG	5.70	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5098	TULARE	TUL-1239			DBTG	5.70	0.00	COSO	XRF	385400	4036900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5311-09	TULARE	TUL-1264			BIF	5.70	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0071	INYO	INY-1824	LZ	40-50	DBTG	5.70	999.00	COSO-JR	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0008	INYO	INY-1906	TU L1	40-50	DBTG	5.70	999.00	COSO-WSL	XRF	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-107.0007	INYO	INY-1924	TU 1	40-50	DBTG	5.70	999.00	COSO-WSL	XRF	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0022	INYO	INY-1969	TU L3	30-40	DBTG	5.70	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-263.0013	INYO	INY-1860	TU	20-30	DBTG	5.80	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-263.0013	INYO	INY-1860	TU	20-30	DBTG	5.80	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-263.0009	INYO	INY-1860	TU	0-10	DBTG	5.80	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
W-2-0308	KER	KER-0116	surface		biface	5.80		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
31035-02	KER	KER-3080	RRU 26, 0-10		debitage	5.80		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
43030-02	KER	KER-5392	EU 1,80-100		debitage	5.80		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-51	INYO	INY-0372	UNIT-X1	10-20	DBTG	5.80	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-252	INYO	INY-0372	UNIT-X1	150-160	DBTG	5.80	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-219	INYO	INY-0372	UNIT-X1	120-130	DBTG	5.80	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
984-164.0012	INYO	INY-1829	UNIT 50		DBTG	5.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0325	INYO	INY-1906	N61/E30	10-20	BIF	5.80	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0117	INYO	INY-1907	N18/E37	20-30	BIF	5.80	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-318.0001	INYO	INY-1923			BIF	5.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1309.0053	INYO	INY-1923	TU 1	SURF	DBTG	5.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1411.0381	INYO	INY-1923	TU 1	60-70	DBTG	5.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1411.0381	INYO	INY-1923	TU 1	60-70	DBTG	5.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0002	INYO	INY-1928	L. 1	0-10	DBTG	5.80	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0027	INYO	INY-1928	L. 3	40-50	DBTG	5.80	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0032	INYO	INY-1928	L. 4	20-30	DBTG	5.80	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-85.0012	INYO	INY-1969	TU	0-10	DBTG	5.80	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5236-04	TULARE	TUL-1249			DBTG	5.80	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0094	INYO	INY-1824	L.2	0-10	DBTG	5.80	999.00	COSO-SLM	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-107.0002	INYO	INY-1924	TU 1	0-10	DBTG	5.80	999.00	COSO-WSL	XRF	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0018	INYO	INY-1969	TU L3	0-10	DBTG	5.80	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
267-003-	Kern	KER-5373/H	SS 51	0-20	Debitage	5.87		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
267-003-	Kern	KER-5373/H	SS 51	0-20	Debitage	5.87		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
37008-02	KER	KER-5404	RRU 25, 0-40		biface	5.90		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-263.0009	INYO	INY-1860	TU	0-10	DBTG	5.90	999.00	COSO-JR	XRF	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
131-X1-296	INYO	INY-0372	UNIT-X1	200-210	DBTG	5.90	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-106	INYO	INY-0372	UNIT-X1	50-60	DBTG	5.90	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0434	INYO	INY-1824	N103/E115	0-10	BIF	5.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0576	INYO	INY-1824	N100/E113	0-10	BIF	5.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0700	INYO	INY-1824	N174/E107	80-90	DBTG	5.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1756.0039	INYO	INY-1829	CU 18	SURF	DBTG	5.90	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0063	INYO	INY-1906	N68.9/E279.1	SURF	BIF	5.90	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0352	INYO	INY-1906	S15/W11	30-40	FLKTL	5.90	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0390	INYO	INY-1906	N81/E337	0-10	DBTG	5.90	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0005	INYO	INY-1906	TU L1	10-20	DBTG	5.90	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0008	INYO	INY-1906	TU L1	40-50	DBTG	5.90	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0186	INYO	INY-1907	N27/E42	10-20	FLKTL	5.90	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0232	INYO	INY-1907	N18/E38	40-48	DBTG	5.90	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0232	INYO	INY-1907	N18/E38	40-48	DBTG	5.90	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-390.0001	INYO	INY-1923			BIF	5.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
5138	TULARE	TUL-0103			DBTG	5.90	0.00	COSO	XRF	380400	4039550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5102	TULARE	TUL-1240			PRJPT	5.90	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5102	TULARE	TUL-1240			PRJPT	5.90	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5102	TULARE	TUL-1240			PRJPT	5.90	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5102	TULARE	TUL-1240			PRJPT	5.90	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5236-20	TULARE	TUL-1249			DBTG	5.90	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5184	TULARE	TUL-1256			DBTG	5.90	0.00	COSO	XRF	353050	4067090		11	pre-Quat	pre-Quat	SIRRETTA-CHAIX VARIANT-ROCK OUTCROP (CA716)
10543B	TULARE	TUL-0072		0-10	DBTG	5.90	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
987-26.0064	INYO	INY-1824	LZ	0-10	DBTG	5.90	999.00	COSO-JR	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0016	INYO	INY-1928	L. 3, D.3	SURF	PRJPT	5.90	999.00	COSO-JR	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-107.0007	INYO	INY-1924	TU 1	40-50	DBTG	5.90	999.00	COSO-WSL	XRF	429727	3986629	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
657	MONO	MNO-0891	SCN43/W208	SURFACE	PRJPT	6.00	0.00	COSO	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
987-263.0013	INYO	INY-1860	TU	20-30	DBTG	6.00	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-263.0009	INYO	INY-1860	TU	0-10	DBTG	6.00	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
W-2-1687	KER	KER-0116	EU 51, 20-30		biface	6.00		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1681	KER	KER-0116	EU 50, 70-80		debitage	6.00		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
51	INYO	INY-5298	3C	B	DBTG	6.00	0.00	COSO-WSL	XRF	409960	4047970		11	Holocene	latest-Holo	Torrifluvents, 0 to 2 percent slopes
987-26.0094	INYO	INY-1824	L.2	0-10	DBTG	6.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0608	INYO	INY-1824	N104/E113	40-50	BIF	6.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0377	INYO	INY-1906	N70/E272	0-10	BIF	6.00	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0226	INYO	INY-1907	N26.5/E42	40-50	FLKTL	6.00	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0232	INYO	INY-1907	N18/E38	40-48	DBTG	6.00	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0232	INYO	INY-1907	N18/E38	40-48	DBTG	6.00	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0018	INYO	INY-1969	TU L3	0-10	DBTG	6.00	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0018	INYO	INY-1969	TU L3	0-10	DBTG	6.00	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5112	TULARE	TUL-1240			DBTG	6.00	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5112	TULARE	TUL-1240			DBTG	6.00	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5112	TULARE	TUL-1240			DBTG	6.00	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5112	TULARE	TUL-1240			DBTG	6.00	0.00	COSO	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5236-02	TULARE	TUL-1249			BIF	6.00	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0094	INYO	INY-1824	L.2	0-10	DBTG	6.00	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0433	INYO	INY-1824	N103/E115	0-10	PRJPT	6.00	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
35002-02	KER	KER-3077	RRU 21, 40-80		debitage	6.10		Coso		428225	3863611	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
W-2-1635	KER	KER-0116	EU 44, 80-90		biface	6.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-2740	KER	KER-0116	T4, Level E		biface	6.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1352b	KER	KER-0116	EU 12,60-70		debitage	6.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
35001-03	KER	KER-3077	RRU 21, 0-40		debitage	6.10		Coso		428225	3863611	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
35041-02	KER	KER-3077	EU 2, 40-60		debitage	6.10		Coso		428225	3863611	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
131-X1-280	INYO	INY-0372	UNIT-X1	190-200	DBTG	6.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-31.0196	INYO	INY-1816	N4/E40	0-10	BIF	6.10	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0891	INYO	INY-1824	L.B, S8/E14	0-10	BIF	6.10	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0021	INYO	INY-1906	N87/E42	SURF	BIF	6.10	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0328	INYO	INY-1906	N61/E30	20-30	FLKTL	6.10	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0390	INYO	INY-1906	N81/E337	0-10	DBTG	6.10	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0002	INYO	INY-1928	L. 1	0-10	DBTG	6.10	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0007	INYO	INY-1928	L. 1	50-60	DBTG	6.10	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-85.0022	INYO	INY-1969	TU L3	30-40	DBTG	6.10	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0006	INYO	INY-1907	TU L1	0-10	DBTG	6.10	18.20	COSO-SLM	XRF	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0099	INYO	INY-1824	L.3	0-10	DBTG	6.10	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-263.0009	INYO	INY-1860	TU	0-10	DBTG	6.20	999.00	COSO	VIS	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
0122-01	KER	KER-4732	CU 5, 30-40		biface	6.20		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
W-2-1548	KER	KER-0116	EU 29a, 10-20		debitage	6.20		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-170	INYO	INY-0372	UNIT-X1	90-100	DBTG	6.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-106	INYO	INY-0372	UNIT-X1	50-60	DBTG	6.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-66	INYO	INY-0372	UNIT-X1	20-30	DBTG	6.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-82	INYO	INY-0372	UNIT-X1	30-40	DBTG	6.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-31.0215	INYO	INY-1816	S2/E66	0-10	BIF	6.20	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0102	INYO	INY-1824	L.4	SURF	DBTG	6.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-26.0099	INYO	INY-1824	L.3	0-10	DBTG	6.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0649	INYO	INY-1824	N132/E117	0-10	BIF	6.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0890	INYO	INY-1824	L.B, S8/E14	0-10	DBTG	6.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0890	INYO	INY-1824	L.B, S8/E14	0-10	DBTG	6.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0922	INYO	INY-1824	L.X, N2/E1	10-20	DBTG	6.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0061	INYO	INY-1906	N72.9/E276.5	SURF	BIF	6.20	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0326	INYO	INY-1906	N61/E30	10-20	BIF	6.20	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0362	INYO	INY-1906	N68/E273	0-10	BIF	6.20	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0005	INYO	INY-1906	TU L1	10-20	DBTG	6.20	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0161	INYO	INY-1907	N18/E38	20-30	BIF	6.20	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0182	INYO	INY-1907	N27/E42	10-20	BIF	6.20	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1314.0244	INYO	INY-1923	TU 1	30-40	DBTG	6.20	22.10	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
1350-24-2509A	TULARE	TUL-0024		12-24"	PRJPT	6.20	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
987-31.0170	INYO	INY-1816	N32/W25	0-10	PRJPT	6.20	999.00	COSO-WCP	XRF	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0587	INYO	INY-1824	N104/E113	0-10	PRJPT	6.20	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0005	INYO	INY-1907	CSC, 5X5, L2	SURF	DBTG	6.20	999.00	COSO-WSL	XRF	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0018	INYO	INY-1969	TU L3	0-10	DBTG	6.20	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-1333	KER	KER-0116	EU 11, 50-60		debitage	6.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1566	KER	KER-0116	EU 30, 90-100		debitage	6.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1600a	KER	KER-0116	EU 38, 30-40		debitage	6.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-153	INYO	INY-0372	UNIT-X1	80-90	DBTG	6.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-153	INYO	INY-0372	UNIT-X1	80-90	DBTG	6.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0100	INYO	INY-1824	L.3	10-20	DBTG	6.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0094	INYO	INY-1824	L.2	0-10	DBTG	6.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0017	INYO	INY-1906	N57/E30	SURF	BIF	6.30	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0119	INYO	INY-1906	N24/W6	SURF	BIF	6.30	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0359	INYO	INY-1906	N53/E265	0-10	FLKTL	6.30	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0391	INYO	INY-1906	N81/E337	0-10	FLKTL	6.30	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0005	INYO	INY-1907	CSC, 5X5, L2	SURF	DBTG	6.30	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0005	INYO	INY-1907	CSC, 5X5, L2	SURF	DBTG	6.30	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0008	INYO	INY-1907	TU	20-30	DBTG	6.30	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1309.0066	INYO	INY-1923	TU 1	SURF	DBTG	6.30	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0002	INYO	INY-1928	L. 1	0-10	DBTG	6.30	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0002	INYO	INY-1928	L. 1	0-10	DBTG	6.30	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0007	INYO	INY-1928	L. 1	50-60	DBTG	6.30	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0030	INYO	INY-1928	L. 4	0-10	DBTG	6.30	999.00	COSO	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-85.0022	INYO	INY-1969	TU L3	30-40	DBTG	6.30	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
1351-24-883B	TULARE	TUL-0024		30-36"	BIF	6.30	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
98-1311.0002	INYO	INY-1923	TU 1	0-10	DBTG	6.30	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1314.0246	INYO	INY-1923	TU 1	30-40	DBTG	6.30	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
16004-01	KER	KER-3080	SCA 4, surface		biface	6.40		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
0098-01-b	KER	KER-4732	CU 4, 0-10		debitage	6.40		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
131-X1-241	INYO	INY-0372	UNIT-X1	140-150	DBTG	6.40	5.40	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-31.0151	INYO	INY-1816	S4/E67	10-20	BIF	6.40	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0189	INYO	INY-1816	N2/E60	20-30	BIF	6.40	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0099	INYO	INY-1824	L.3	0-10	DBTG	6.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0624	INYO	INY-1824	N110/E68	20-30	BIF	6.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0648	INYO	INY-1824	N132/E117	0-10	BIF	6.40	17.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0890	INYO	INY-1824	L.B, S8/E14	0-10	DBTG	6.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0890	INYO	INY-1824	L.B, S8/E14	0-10	DBTG	6.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-26.0922	INYO	INY-1824	L.X, N2/E1	10-20	DBTG	6.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0932	INYO	INY-1824	L.X, N2/E1	50-60	DBTG	6.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0012	INYO	INY-1906	N42/E6	SURF	BIF	6.40	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0005	INYO	INY-1907	CSC, 5X5, L2	SURF	DBTG	6.40	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1443.0004	INYO	INY-1923	TU 1	90-100	DBTG	6.40	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0018	INYO	INY-1969	TU L3	0-10	DBTG	6.40	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
1109	TULARE	RB-11		0-10	PRJPT	6.40	0.00	COSO	XRF	396321	3983406	83	11	pre-Quat	pre-Quat	Rock outcrop-Tollhouse complex, 15 to 30 percent slopes
987-26.0094	INYO	INY-1824	L.2	0-10	DBTG	6.40	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0099	INYO	INY-1824	L.3	0-10	DBTG	6.40	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0005	INYO	INY-1906	TU L1	10-20	DBTG	6.40	999.00	COSO-WSL	XRF	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0005	INYO	INY-1907	CSC, 5X5, L2	SURF	DBTG	6.40	999.00	COSO-WSL	XRF	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0021	INYO	INY-1928	L. 3	0-10	DBTG	6.40	999.00	COSO-WSL	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
245-002	Kern	KER-5373/H	SS 39	0-20	Debitage	6.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
245-002	Kern	KER-5373/H	SS 39	0-20	Debitage	6.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
31006-01	KER	KER-3080	SCA 26, surface		biface	6.50		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
08015-01	KER	KER-5404	STP 8, 0-20		biface	6.50		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-1379	KER	KER-0116	EU 14,40-50		debitage	6.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1604	KER	KER-0116	EU 38, 70-80		debitage	6.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-135	INYO	INY-0372	UNIT-X1	70-80	DBTG	6.50	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0102	INYO	INY-1824	L.4	SURF	DBTG	6.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0630	INYO	INY-1824	N115/E68	0-10	BIF	6.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-156.0020	INYO	INY-1829	UNIT 224		DBTG	6.50	5.50	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0121	INYO	INY-1906	N30/W6	SURF	BIF	6.50	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0003	INYO	INY-1906	CSC,3X3, L2		DBTG	6.50	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0007	INYO	INY-1928	L. 1	50-60	DBTG	6.50	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
1353-24-3220	TULARE	TUL-0024		12"	PRJPT	6.50	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10547A	TULARE	TUL-0072		40-50	DBTG	6.50	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
987-85.0013	INYO	INY-1969	TU	10-20	DBTG	6.50	999.00	COSO-SLM	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
75	INYO	INY-3822	3C	I	DBTG	6.50	0.00	COSO-WSL	XRF	415950	3983930		11	pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
16123-04	KER	KER-3080	SP 23, 0-50		debitage	6.60		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-0133	KER	KER-0116	EU 29, 10-20		PPT	6.60		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-262	INYO	INY-0372	UNIT-X1	160-170	DBTG	6.60	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0093	INYO	INY-1824	L.2	SURF	DBTG	6.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0922	INYO	INY-1824	L.X, N2/E1	10-20	DBTG	6.60	19.50	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0924	INYO	INY-1824	L.X, N2/E1	10-20	BIF	6.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-133.0024	INYO	INY-1829			BIF	6.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0123	INYO	INY-1906	N18/E24	SURF	BIF	6.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0008	INYO	INY-1907	TU	20-30	DBTG	6.60	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0008	INYO	INY-1907	TU	20-30	DBTG	6.60	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5127	TULARE	TUL-1242			DBTG	6.60	0.00	COSO	XRF	385650	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-157.0021	INYO	INY-1928	L. 3	0-10	DBTG	6.60	999.00	COSO-JR	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-26.0099	INYO	INY-1824	L.3	0-10	DBTG	6.60	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0008	INYO	INY-1907	TU	20-30	DBTG	6.60	999.00	COSO-WSL	XRF	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0021	INYO	INY-1928	L. 3	0-10	DBTG	6.60	999.00	COSO-WSL	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0030	INYO	INY-1928	L. 4	0-10	DBTG	6.60	999.00	COSO-WSL	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
078-002	Kern	KER-5392	RRU 25	0-40	Projectile Point	6.64		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
1037	INYO	INY-3782/H	SCU; S20/E5		PRJPT	6.70	0.00	COSO-WSL	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
987-31.0160	INYO	INY-1816	S6/E72	0-10	BIF	6.70	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0923	INYO	INY-1824	L.X, N2/E1	10-20	BIF	6.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0933	INYO	INY-1824	L.X, N2/E1	50-60	BIF	6.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-105.0255	INYO	INY-1906	N15/W156	0-10	BIF	6.70	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2252.0005	INYO	INY-1923	TU 4	10-20	DBTG	6.70	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0007	INYO	INY-1928	L. 1	50-60	DBTG	6.70	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
EU1	TULARE	TUL-1227		70-80	FLKTL	6.70	0.00	COSO	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5236-17	TULARE	TUL-1249			DBTG	6.70	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5312-09	TULARE	TUL-1265			DBTG	6.70	0.00	COSO	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0064	INYO	INY-1824	LZ	0-10	DBTG	6.70	999.00	COSO-JR	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0093	INYO	INY-1824	L.2	SURF	DBTG	6.70	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0003	INYO	INY-1906	CSC,3X3, L2		DBTG	6.70	999.00	COSO-WSL	XRF	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
16005-01	KER	KER-3080	SCA 5, surface		biface	6.80		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-2288	KER	KER-0116	EU 14, 160-170		PPT	6.80		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
254	INYO	INY-5273/H	3C		PRJPT	6.80	0.00	COSO-WSL	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
131-X1-296	INYO	INY-0372	UNIT-X1	200-210	DBTG	6.80	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0093	INYO	INY-1824	L.2	SURF	DBTG	6.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0437	INYO	INY-1824	N103/E115	10-20	BIF	6.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0601	INYO	INY-1824	N104/E113	20-30	BIF	6.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0622	INYO	INY-1824	N110/E68	10-20	BIF	6.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0932	INYO	INY-1824	L.X, N2/E1	50-60	DBTG	6.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.1019	INYO	INY-1824	S150/W30	SURF	BIF	6.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0003	INYO	INY-1906	CSC,3X3, L2		DBTG	6.80	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0027	INYO	INY-1928	L. 3	40-50	DBTG	6.80	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0030	INYO	INY-1928	L. 4	0-10	DBTG	6.80	999.00	COSO	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-108.0005	INYO	INY-1965	TU	10-20	DBTG	6.80	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0014	INYO	INY-1969	TU L2	0-10	DBTG	6.80	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-530.0001	INYO	INY-1923			BIF	6.80	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0030	INYO	INY-1928	L. 4	0-10	DBTG	6.80	999.00	COSO-WSL	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-85.0014	INYO	INY-1969	TU L2	0-10	DBTG	6.80	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
131-X1-122	INYO	INY-0372	UNIT-X1	60-70	DBTG	6.90	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
984-105.0024	INYO	INY-1829			BIF	6.90	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-87.0008	INYO	INY-1907	TU	20-30	DBTG	6.90	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-722.0001	INYO	INY-1923	TS 1121	SURF	DBTG	6.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-108.0001	INYO	INY-1965	SURF	SURF	DBTG	6.90	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0014	INYO	INY-1969	TU L2	0-10	DBTG	6.90	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
1353-24-940	TULARE	TUL-0024		6-12"	PRJPT	6.90	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-2445	TULARE	TUL-0024		0-12"	PRJPT	6.90	0.00	COSO	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
987-26.0093	INYO	INY-1824	L.2	SURF	DBTG	6.90	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0002	INYO	INY-1907	L. 1	SURF	PRJPT	6.90	999.00	COSO-WSL	XRF	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
314-002	Kern	KER-3080	SS 9830E1610N	0-20	Projectile Point	6.92	8.85	Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-122	INYO	INY-0372	UNIT-X1	60-70	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-122	INYO	INY-0372	UNIT-X1	60-70	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-205	INYO	INY-0372	UNIT-X1	110-120	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-205	INYO	INY-0372	UNIT-X1	110-120	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-205	INYO	INY-0372	UNIT-X1	110-120	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-290	INYO	INY-0372	UNIT-X1	180-190	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-290	INYO	INY-0372	UNIT-X1	180-190	DBTG	7.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
5123	TULARE	TUL-1242			DBTG	7.00	0.00	COSO	XRF	385650	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0100	INYO	INY-1824	L.3	10-20	DBTG	7.00	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-0192	KER	KER-0116	EU 61, 0-10		biface	7.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1382	KER	KER-0116	EU 14, 80-90		debitage	7.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
31019-03	KER	KER-3080	EU 2, 40-60		debitage	7.10		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
W-2-2252	KER	KER-0116	T2, Level B		PPT	7.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-252	INYO	INY-0372	UNIT-X1	100-110	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-33	INYO	INY-0372	UNIT-X1	0-10	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-82	INYO	INY-0372	UNIT-X1	30-40	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-262	INYO	INY-0372	UNIT-X1	160-170	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-252	INYO	INY-0372	UNIT-X1	150-160	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-231	INYO	INY-0372	UNIT-X1	130-140	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-219	INYO	INY-0372	UNIT-X1	120-130	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-280	INYO	INY-0372	UNIT-X1	190-200	DBTG	7.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
5361	FRESNO	FRE-2169			BIF	7.10	0.00	COSO	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
987-26.0668	INYO	INY-1824	N174/E107	0-10	BIF	7.10	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0679	INYO	INY-1824	N174/E107	20-30	BIF	7.10	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0932	INYO	INY-1824	L.X, N2/E1	50-60	DBTG	7.10	9.50	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-150.0022	INYO	INY-1829	UNIT 180		DBTG	7.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2351.0002	INYO	INY-1923	TU 0004	20-30	DBTG	7.10	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
5236-02	TULARE	TUL-1249			BIF	7.10	0.00	COSO	XRF	351950	4024500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
W-2-1539	KER	KER-0116	EU 29, 20-30		debitage	7.20	8.90	Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
43025-02	KER	KER-5392	EU 1, 0-20		debitage	7.20		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
056-001	KERN	KER-5582	SCA 17	Surface	DEB	7.20		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
056-001	KERN	KER-5582	SCA-17	SUR	DEB	7.20		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-135	INYO	INY-0372	UNIT-X1	70-80	DBTG	7.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-241	INYO	INY-0372	UNIT-X1	140-150	DBTG	7.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-252	INYO	INY-0372	UNIT-X1	100-110	DBTG	7.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-296	INYO	INY-0372	UNIT-X1	200-210	DBTG	7.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-231	INYO	INY-0372	UNIT-X1	130-140	DBTG	7.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-31.0166	INYO	INY-1816	S10/E55	20-30	BIF	7.20	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0225	INYO	INY-1816	S4/E66	0-10	BIF	7.20	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0167	INYO	INY-1824	N141/E42	SURF	BIF	7.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0545	INYO	INY-1824	N5/E43	0-10	BIF	7.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0665	INYO	INY-1824	N174/E107	0-10	BIF	7.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0667	INYO	INY-1824	N174/E107	0-10	BIF	7.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-40.0008	INYO	INY-1829A	UNIT 236		DBTG	7.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
078-002	Kern	KER-5392	RRU 25	0-40	Projectile Point	7.22		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-1959	KER	KER-0116	EU 6,160-170		debitage	7.30		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
31008-01	KER	KER-3080	SCA 28, surface		debitage	7.30		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
43046-02	KER	KER-5392	EU 3, 60-80		debitage	7.30		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
047-001	KERN	KER-5582	SCA 8	Surface	BIF	7.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
053-001	KERN	KER-5582	SCA 14	Surface	DEB	7.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
057-001	KERN	KER-5582	SCA 18	Surface	BIF	7.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
047-001	KERN	KER-5582	SCA-8	SUR	BIF	7.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
053-001	KERN	KER-5582	SCA-14	SUR	DEB	7.30		COSO		264346	3944499			Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
057-001	KERN	KER-5582	SCA-18	SUR	BIF	7.30		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-269	INYO	INY-0372	UNIT-X1	170-180	DBTG	7.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
227-1-206a	INYO	INY-5277			DBTG	7.30	0.00	COSO	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
987-31.0118	INYO	INY-1816	S120/W15	TRAN. I	DBTG	7.30	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0140	INYO	INY-1816	N3/E40	0-10	BIF	7.30	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0186	INYO	INY-1824	N144/E51	SURF	BIF	7.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0446	INYO	INY-1824	N109/E69	0-10	BIF	7.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0664	INYO	INY-1824	N174/E107	0-10	BIF	7.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0664	INYO	INY-1824	N174/E107	0-10	BIF	7.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-26.0666	INYO	INY-1824	N174/E107	0-10	BIF	7.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0006	INYO	INY-1907	TU L1	0-10	DBTG	7.30	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0016	INYO	INY-1969	TU L2	20-30	DBTG	7.30	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-1352a	KER	KER-0116	EU 12, 60-70		debitage	7.40		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1509	KER	KER-0116	EU 26, 10-20		debitage	7.40		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
43014-02	KER	KER-5392	RRU 46, 40-80		debitage	7.40		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-26.0177	INYO	INY-1824	N141/E48	SURF	BIF	7.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-108.0001	INYO	INY-1965	SURF	SURF	DBTG	7.40	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0107	INYO	INY-1824	L.5	SURF	DBTG	7.40	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0091	INYO	INY-1824	L.1	SURF	DBTG	7.40	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
	KER	KER-0526	10	010-020	DEB	7.50		COSO		425438	3855954	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
W-2-1953	KER	KER-0116	EU 6,100-110		debitage	7.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1354	KER	KER-0116	EU 12, 80-90		debitage	7.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1491	KER	KER-0116	EU 24, 60-70		debitage	7.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1927a	KER	KER-0116	EU 68, 40-50		debitage	7.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
43005-02	KER	KER-5392	RRU 41,120-150		debitage	7.50		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-231	INYO	INY-0372	UNIT-X1	130-140	DBTG	7.50	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-31.0123	INYO	INY-1816	N0/E55	0-10	BIF	7.50	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0217	INYO	INY-1816	S2/E66	10-20	BIF	7.50	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0226	INYO	INY-1816	S4/E66	0-10	BIF	7.50	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0227	INYO	INY-1816	S4/E66	0-10	BIF	7.50	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-164.0010	INYO	INY-1829	UNIT 50		DBTG	7.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0118	INYO	INY-1906	N18/W12	SURF	BIF	7.50	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2351.0002	INYO	INY-1923	TU 0004	20-30	DBTG	7.50	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1314.0245	INYO	INY-1923	TU 1	30-40	DBTG	7.50	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-108.0001	INYO	INY-1965	SURF	SURF	DBTG	7.50	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
10542C	TULARE	TUL-0072		SURFACE	DBTG	7.50	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
10547C	TULARE	TUL-0072		40-50	DBTG	7.50	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
642	KER	KER-0526	17	000-010	DEB	7.60		COSO		425438	3855954	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
W-2-1345	KER	KER-0116	EU 11, 170-180		debitage	7.60		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
81-230-076-002	INYO	INY-5277	N72/W118	0-10 cm	PRJPT	7.60		CS-WS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
984-21.0008	INYO	INY-1829A	UNIT 164		DBTG	7.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0379	INYO	INY-1906	N74/E275	0-10	BIF	7.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
5172-04	TULARE	TUL-1248			DBTG	7.60	0.00	COSO	XRF	350300	4036500		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
987-26.0096	INYO	INY-1824	L.3	SURF	PRJPT	7.60	999.00	COSO-SLM	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-87.0006	INYO	INY-1907	TU L1	0-10	DBTG	7.60	999.00	COSO-WSL	XRF	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-1290	KER	KER-0116	EU 8,150-160		debitage	7.70		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
987-263.0008	INYO	INY-1860	TU	20-30	PRJPT	7.70	999.00	COSO-WSL	XRF	431954	3985279	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
199-002	Kern	KER-5373/H	SS 20	20-40	Core	7.70		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
199-002	Kern	KER-5373/H	SS 20	20-40	Core	7.70		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0080	INYO	INY-1824	23M206 A	SURF	BIF	7.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0631	INYO	INY-1824	N115/E68	0-10	BIF	7.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-150.0022	INYO	INY-1829	UNIT 180		DBTG	7.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0005	INYO	INY-1906	TU L1	10-20	DBTG	7.70	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
0118-01-a	KER	KER-4732	CU 5,10-20.		debitage	7.80		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
987-26.0569	INYO	INY-1824	N9/E39	20-30	BIF	7.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2350.0008	INYO	INY-1923	TU 4	20-30	DBTG	7.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0032	INYO	INY-1928	L. 4	20-30	DBTG	7.80	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
5311-04	TULARE	TUL-1264			DBTG	7.80	0.00	COSO	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
98-1443.0005	INYO	INY-1923	TU 4		DBTG	7.80	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
2	INYO	INY-3782/H	SURFACE		PRJPT	7.90	0.00	COSO-SLM	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
987-26.0168	INYO	INY-1824	N147/E30	SURF	BIF	7.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1309.0056	INYO	INY-1923	TU 1	SURF	DBTG	7.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0032	INYO	INY-1928	L. 4	20-30	DBTG	7.90	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-157.0021	INYO	INY-1928	L. 3	0-10	DBTG	7.90	999.00	COSO-JR	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-26.0107	INYO	INY-1824	L.5	SURF	DBTG	7.90	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
W-2-2519	KER	KER-0116	EU 24, 60-70		biface	8.00	9.10	Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1842	KER	KER-0116	EU 65, 70-80		debitage	8.00		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-262	INYO	INY-0372	UNIT-X1	160-170	DBTG	8.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-252	INYO	INY-0372	UNIT-X1	150-160	DBTG	8.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-241	INYO	INY-0372	UNIT-X1	140-150	DBTG	8.00	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
364	TULARE	05-13-56-36		SURFACE	PRJPT	8.00	0.00	COSO	XRF	394868	3978067		11	pre-Quat	pre-Quat	Chaix-Wind River family-Tollhouse association, sloping
98-1309.0063	INYO	INY-1923	TU 1	SURF	DBTG	8.00	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-157.0027	INYO	INY-1928	L. 3	40-50	DBTG	8.00	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
987-108.0005	INYO	INY-1965	TU	10-20	DBTG	8.00	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
75	INYO	INY-3822	3C	F	DBTG	8.00	0.00	COSO-WSL	XRF	415950	3983930		11	pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
W-2-2354	KER	KER-0116	EU 3,130-140		biface	8.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
W-2-1289a	KER	KER-0116	EU 8,140-150		debitage	8.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
0038-01-b	KER	KER-4732	SSU 2, 0-10		debitage	8.10		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
131-X1-170	INYO	INY-0372	UNIT-X1	90-100	DBTG	8.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-252	INYO	INY-0372	UNIT-X1	100-110	DBTG	8.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
41004-04	KER	KER-5373/H	RRU 22, 40-80		debitage	8.10		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0083	INYO	INY-1824	L.Y	SURF	DBTG	8.10	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-150.0022	INYO	INY-1829	UNIT 180		DBTG	8.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0016	INYO	INY-1906	N9/E39	SURF	FLKTL	8.10	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-85.0012	INYO	INY-1969	TU L1	0-10	DBTG	8.10	999.00	COSO-SLM	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1311.0001	INYO	INY-1923	TU 1	0-10	DBTG	8.10	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
W-2-0176	KER	KER-0116	EU 50, 30-40		biface	8.20	9.60	Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
43010-03	KER	KER-5392	RRU 44, 40-80		biface	8.20		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-1927b	KER	KER-0116	EU 68, 40-50		debitage	8.20		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-66	INYO	INY-0372	UNIT-X1	20-30	DBTG	8.20	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
98-1756.0039	INYO	INY-1829	CU 18	SURF	DBTG	8.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-237.0024	INYO	INY-1829C	UNIT 311		BIF	8.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0014	INYO	INY-1969	TU L2	0-10	DBTG	8.20	999.00	COSO	VIS	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0107	INYO	INY-1824	L.5	SURF	DBTG	8.20	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0083	INYO	INY-1824	L.Y	SURF	DBTG	8.20	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
16009-01	KER	KER-3080	SCA 9, surface		biface	8.30		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
0042-01	KER	KER-4732	CU 1,10-20		core	8.30		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
43042-01	KER	KER-5392	SCA 10, surface		debitage	8.30		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
109-001B	KERN	KER-3079		Surface		8.35		COSO		285848	3908377	83		Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
109-001	Kern	KER-3079	SCA 1.03	Surface	Projectile Point	8.35		Coso		285848	3908377	83		Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
37017 -02	KER	KER-5404	RRU 27, 0-40		biface	8.40		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
16108-02	KER	KER-3080	SP 8, 0-50		debitage	8.40		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-26.0091	INYO	INY-1824	L.1	SURF	DBTG	8.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-144.0024	INYO	INY-1829			FRMFLKTL	8.40	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1343.0044	INYO	INY-1923	CU 16	SURF	DBTG	8.40	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
W-2-1927c	KER	KER-0116	EU 68, 40-50		debitage	8.50		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
0081-01	KER	KER-4732	CU 2, 50-60		debitage	8.50		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
131-X1-33	INYO	INY-0372	UNIT-X1	0-10	DBTG	8.50	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.1023	INYO	INY-1824	S150/W33	SURF	FRMFLKTL	8.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
987-85.0014	INYO	INY-1969	TU L2	0-10	DBTG	8.50	999.00	COSO-WSL	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
75	INYO	INY-3822	3C	E	DBTG	8.50	0.00	COSO-WSL	XRF	415950	3983930		11	pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
109-001A	KERN	KER-3079		Surface		8.51		COSO		285848	3908377	83		Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
109-001	Kern	KER-3079	SCA 1.03	Surface	Projectile Point	8.51		Coso		285848	3908377	83		Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-1317	KER	KER-0116	EU 10, 70-80		debitage	8.60		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
32035-01	KER	KER-3080	RRU 36, 0-40		debitage	8.60		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
32021-07	KER	KER-3080	EU 8, 40-60		debitage	8.60		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-219	INYO	INY-0372	UNIT-X1	120-130	DBTG	8.60	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.1024	INYO	INY-1824	S150/W33	SURF	CORE	8.60	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-105.0211	INYO	INY-1906	S21/E3	SURF	BIF	8.60	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2251.0007	INYO	INY-1923	TU 4	0-10	DBTG	8.60	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0091	INYO	INY-1824	L.1	SURF	DBTG	8.60	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
29	INYO	INY-5303	3C	C	DBTG	8.70	0.00	COSO-WSL	XRF	407890	4048260		11	Holocene	Early-Holo	Winnedumah silt loam, 0 to 2 percent slopes
39006-03	KER	KER-3077	RRU 46, 0-40		debitage	8.70		Coso		428225	3863611	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
042-001	KERN	KER-5582	SCA 3	Surface	DEB	8.70		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
049-001	KERN	KER-5582	SCA 10	Surface	DEB	8.70		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
050-001	KERN	KER-5582	SCA 11	Surface	DEB	8.70		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
042-001	KERN	KER-5582	SCA-3	SUR	DEB	8.70		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
049-001	KERN	KER-5582	SCA-10	SUR	DEB	8.70		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
050-001	KERN	KER-5582	SCA-11	SUR	DEB	8.70		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-51	INYO	INY-0372	UNIT-X1	10-20	DBTG	8.70	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-280	INYO	INY-0372	UNIT-X1	190-200	DBTG	8.70	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
41054-03	KER	KER-5373/H	EU 2, 60-80		biface	8.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0594	INYO	INY-1824	N104/E113	10-20	BIF	8.70	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2351.0001	INYO	INY-1923	TU 0004	20-30	DBTG	8.70	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
0044-01-a	KER	KER-4732	CU 1 , 20-30		debitage	8.80		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
W-2-0150	KER	KER-0116	EU 31, 90-100		PPT	8.80		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
131-X1-252	INYO	INY-0372	UNIT-X1	150-160	DBTG	8.80	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
70	INYO	INY-5351	3C	C	DBTG	8.80	0.00	COSO-WSL	XRF	412640	3997480		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
986-1.0008	INYO	INY-1816	L 1	SURF	DBTG	8.80	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0083	INYO	INY-1824	L.Y	SURF	DBTG	8.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0107	INYO	INY-1824	L.5	SURF	DBTG	8.80	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-963.0001	INYO	INY-1829	TS 1967	SURF	PRJPT	8.80	0.00	COSO-WSL	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0039	INYO	INY-1829	CU 18	SURF	DBTG	8.80	999.00	COSO-WSL	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
81-248-1-4	INYO	INY-5267	N14.1/E118.3	-	PRJPT	8.89		CS-WS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
29	INYO	INY-5303	3C	G	DBTG	8.90	0.00	COSO-WSL	XRF	407890	4048260		11	Holocene	Early-Holo	Winnedumah silt loam, 0 to 2 percent slopes
987-26.0091	INYO	INY-1824	L.1	SURF	DBTG	8.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.1031	INYO	INY-1824	S156/W33	SURF	FRMFLKTL	8.90	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-313.0001	INYO	INY-1923			BIF	8.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2350.0010	INYO	INY-1923	TU 4	20-30	DBTG	8.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2357.0010	INYO	INY-1923	TU 4	40-50	DBTG	8.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1343.0015	INYO	INY-1923	CU 16	SURF	DBTG	8.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
260	INYO	INY-5274/H	3C		PRJPT	9.00	0.00	COSO-WSL	XRF	390520	4096120	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
0091-01	KER	KER-4732	CU 3, 0-10		core	9.00		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
W-2-1673a	KER	KER-0116	EU 48, 90-100		debitage	9.00		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
040-001	KERN	KER-5582	SCA 1	Surface	DEB	9.00		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
100-001	KERN	KER-5582	SP 31	40-60 cm	DEB	9.00		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
040-001	KERN	KER-5582	SCA-1	SUR	DEB	9.00	22.20	COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
100-001	KERN	KER-5582	SP-31	40-60 cm	DEB	9.00		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
043-001	KERN	KER-5582	SCA 4	Surface	DEB	9.00		COSO-WS		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
043-001	KERN	KER-5582	SCA-4	SUR	DEB	9.00		COSO-WS		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
131-X1-269	INYO	INY-0372	UNIT-X1	170-180	DBTG	9.00	8.20	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0579	INYO	INY-1824	N100/E113	10-20	BIF	9.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0733	INYO	INY-1824	S228/W10	0-10	BIF	9.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-21.0009	INYO	INY-1829A	UNIT 164		DBTG	9.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0210	INYO	INY-1906	S18/E3	SURF	BIF	9.00	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0091	INYO	INY-1824	L.1	SURF	DBTG	9.00	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
81-244-1-51	INYO	INY-5276	S34.6/E42.3	-	PRJPT	9.01		CS-SM		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	9.04		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	9.04		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
W-2-1683	KER	KER-0116	EU 50, 90-100		debitage	9.10		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
16206-02	KER	KER-3080	TEU 1, 50-60		debitage	9.10		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-106	INYO	INY-0372	UNIT-X1	50-60	DBTG	9.10	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
72	INYO	INY-3819	3C	J	DBTG	9.10	0.00	COSO-WSL	XRF	415250	3986769		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
98-2360.0017	INYO	INY-1923	TU 4	50-60	DBTG	9.10	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0083	INYO	INY-1824	L.Y	SURF	DBTG	9.10	999.00	COSO-JR	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2350.0009	INYO	INY-1923	TU 4	20-30	DBTG	9.10	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0107	INYO	INY-1824	L.5	SURF	DBTG	9.10	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
70	INYO	INY-5351	3C	D	DBTG	9.20	0.00	COSO-WSL	XRF	412640	3997480		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
987-26.0566	INYO	INY-1824	N9/E39	10-20	BIF	9.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2357.0011	INYO	INY-1923	TU 4	40-50	DBTG	9.20	24.70	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2357.0009	INYO	INY-1923	TU 4	10-20	DBTG	9.20	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
29	INYO	INY-5303	3C	H	DBTG	9.30	0.00	COSO-WSL	XRF	407890	4048260		11	Holocene	Early-Holo	Winnedumah silt loam, 0 to 2 percent slopes
0098-01-a	KER	KER-4732	CU 4,0-10		core	9.30		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
16123-02	KER	KER-3080	SP 23, 0-50		debitage	9.30		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
43040-02	KER	KER-5392	EU 4, 0-20		debitage	9.30		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-51	INYO	INY-0372	UNIT-X1	10-20	DBTG	9.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
131-X1-290	INYO	INY-0372	UNIT-X1	180-190	DBTG	9.30	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
984-159.0010	INYO	INY-1829	UNIT 264		DBTG	9.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
10551A	TULARE	TUL-0072		80-90	DBTG	9.30	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
984-22.0027	INYO	INY-1829A	UNIT 81		CORE	9.40	36.90	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2360.0008	INYO	INY-1923	TU 4	50-60	DBTG	9.40	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2360.0013	INYO	INY-1923	TU 4	50-60	DBTG	9.40	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
31040-02	KER	KER-3080	RRU 29, 40-80		debitage	9.50		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-26.0564	INYO	INY-1824	N9/E39	0-10	CORE	9.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-26.0647	INYO	INY-1824	N132/E117	0-10	BIF	9.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-33.0031	INYO	INY-1829A	UNIT 114		CORE	9.50	58.40	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-87.0006	INYO	INY-1907	TU L1	0-10	DBTG	9.50	999.00	COSO	VIS	428934	3986963	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
0116-01-a	KER	KER-4732	CU 5, 0-10		debitage	9.60		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
70	INYO	INY-5351	3C	H	DBTG	9.60	0.00	COSO-WSL	XRF	412640	3997480		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
41045-01	KER	KER-5373/H	SCA 14, surface		debitage	9.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
75	INYO	INY-3822	3C	J	DBTG	9.60	0.00	COSO-WSL	XRF	415950	3983930		11	pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	9.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	9.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
313-002	Kern	KER-5373/H	SS 109W	40-60	Debitage	9.66		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
313-002	Kern	KER-5373/H	SS 109W	40-60	Debitage	9.66		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
281-002-	Kern	KER-5373/H	SS 58	0-20	Debitage	9.67		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
281-002-	Kern	KER-5373/H	SS 58	0-20	Debitage	9.67		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
31015-01	KER	KER-3080	SCA 29. surface		biface	9.70		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
W-2-1673b	KER	KER-0116	EU 48, 90-100		debitage	9.70		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
72	INYO	INY-3819	3C	C	DBTG	9.70	0.00	COSO-WSL	XRF	415250	3986769		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
70	INYO	INY-5351	3C	E	DBTG	9.70	0.00	COSO-WSL	XRF	412640	3997480		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
161-003-	Kern	KER-5373/H	SS 1	0-20	Debitage	9.70		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
161-003-	Kern	KER-5373/H	SS 1	0-20	Debitage	9.70		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-31.0007	INYO	INY-1816		SURF	DBTG	9.70	999.00	COSO-WSL	XRF	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0079	INYO	INY-1824	56M170 B	SURF	PRJPT	9.70	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
230-002	Kern	KER-5373/H	SS 33	20-40	Debitage	9.73		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
230-002	Kern	KER-5373/H	SS 33	20-40	Debitage	9.73		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
281-002-	Kern	KER-5373/H	SS 58	0-20	Debitage	9.77		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
304	INYO	INY-3782/H	SCU; S5/W195		PRJPT	9.80	0.00	COSO-WSL	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
W-2-1673c	KER	KER-0116	EU 48, 90-100		debitage	9.80		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
063-001	KERN	KER-5582	SCA 24	Surface	DEB	9.80		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
063-001	KERN	KER-5582	SCA-24	SUR	DEB	9.80		COSO		264346	3944499	83	11	Holocene	latest-Holo	Nahrub, partially drained-Lethent complex
74	INYO	INY-3821	3C	D	DBTG	9.80	0.00	COSO-WSL	XRF	415675	3985040		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
70	INYO	INY-5351	3C	A	DBTG	9.80	0.00	COSO-WSL	XRF	412640	3997480		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
984-156.0010	INYO	INY-1829	UNIT 224		DBTG	9.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-159.0010	INYO	INY-1829	UNIT 264		DBTG	9.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
37063-02	KER	KER-5404	EU 6, 40-60		PPT	9.90		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
72	INYO	INY-3819	3C	G	DBTG	9.90	0.00	COSO-WSL	XRF	415250	3986769		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
98-2357.0008	INYO	INY-1923	TU 4	40-50	DBTG	9.90	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
W-2-1289b	KER	KER-0116	EU 8,140-150		debitage	10.00		Coso		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
32032-02	KER	KER-3080	RRU 35, 0-40		debitage	10.00		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
72	INYO	INY-3819	3C	A	DBTG	10.00	0.00	COSO-WSL	XRF	415250	3986769		11	Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
41046-01	KER	KER-5373/H	SCA 15, surface		debitage	10.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0732	INYO	INY-1824	S228/W10	0-10	BIF	10.00	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1343.0034	INYO	INY-1923	CU 16	SURF	DBTG	10.00	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
624	INYO	INY-3782/H	CU; S90/W61	20-30	PRJPT	10.10	0.00	COSO-WCP	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
32027-02	KER	KER-3080	EU 6, 40-60		debitage	10.10		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
987-26.0546	INYO	INY-1824	N5/E43	0-10	BIF	10.10	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
75	INYO	INY-3822	3C	C	DBTG	10.10	0.00	COSO-WSL	XRF	415950	3983930		11	pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
29	INYO	INY-5303	3C	B	DBTG	10.20	0.00	COSO-WSL	XRF	407890	4048260		11	Holocene	Early-Holo	Winnedumah silt loam, 0 to 2 percent slopes
13008-01	KER	KER-5373/H	SCA 8, surface		PPT	10.20		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-31.0113	INYO	INY-1816	S120/E15	TRAN. G	DBTG	10.20	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0650	INYO	INY-1824	N132/E117	0-10	FRMFLKTL	10.20	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2357.0007	INYO	INY-1923	TU 4	40-50	DBTG	10.20	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2360.0006	INYO	INY-1923	TU 0004	50-60	DBTG	10.20	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-108.0004	INYO	INY-1965	TU	0-10	DBTG	10.20	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-131.0024	INYO	INY-1829			BIF	10.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0007	INYO	INY-1816		SURF	DBTG	10.30	999.00	COSO-WSL	XRF	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	10.32		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	10.32		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	10.35		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	10.35		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
219-002	Kern	KER-5373/H	SS 29	0-20	Debitage	10.38		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
219-002	Kern	KER-5373/H	SS 29	0-20	Debitage	10.38		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
29	INYO	INY-5303	3C	A	DBTG	10.40	0.00	COSO-WSL	XRF	407890	4048260		11	Holocene	Early-Holo	Winnedumah silt loam, 0 to 2 percent slopes
32027 -03	KER	KER-3080	RRU 32, 0-40		debitage	10.40		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
190-002-	Kern	KER-5373/H	SS 16	20-40	Debitage	10.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
190-002-	Kern	KER-5373/H	SS 16	20-40	Debitage	10.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0100	INYO	INY-1824	L.3	10-20	DBTG	10.40	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
250-004-1	Kern	KER-5373/H	SS 41	40-60	Debitage	10.42		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-1	Kern	KER-5373/H	SS 41	40-60	Debitage	10.42		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
13205-02	KER	KER-5373/H	TEU 1, 40-50		debitage	10.50		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
98-1756.0039	INYO	INY-1829	CU 18	SURF	DBTG	10.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	10.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	10.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
32006-02	KER	KER-3080	EU 6, 20-40		debitage	10.60		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
131-X1-269	INYO	INY-0372	UNIT-X1	170-180	DBTG	10.60	0.00	COSO	XRF					Holocene	mid-Holo	CARTAGO-YERMO-TINEMAHA (CA760)
984-152.0012	INYO	INY-1829	UNIT 131		DBTG	10.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1343.0048	INYO	INY-1923	CU 16	SURF	DBTG	10.60	30.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-277.0001	INYO	INY-1926	SURFACE	SURF	DBTG	10.70	999.00	COSO	VIS	430836	3985506	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-277.0001	INYO	INY-1926	SURFACE	SURF	DBTG	10.70	999.00	COSO-SLM	XRF	430836	3985506	83		Holocene	latest-Holo	CAJON-WASCO-ROSAMOND (CA635)
987-105.0147	INYO	INY-1906	N27.8/W153.7		FLAKE BLANK	10.70	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2342.0024	INYO	INY-1923	TU 2	70-80	DBTG	10.70	21.70	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	10.76		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	10.76		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
193-003	Kern	KER-5373/H	SS 17	20-40	Debitage	10.76		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
193-003	Kern	KER-5373/H	SS 17	20-40	Debitage	10.76		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	10.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	10.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-156.0007	INYO	INY-1829	UNIT 224		DBTG	10.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1443.0002	INYO	INY-1923	TU 1	90-100	DBTG	10.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2252.0006	INYO	INY-1923	TU 4	10-20	DBTG	10.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2360.0009	INYO	INY-1923	TU 4	50-60	DBTG	10.80	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
41041-01	KER	KER-5373/H	SCA 10, surface		debitage	10.90		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
573	INYO	INY-3782/H	CU; S53/W221	30-40	PRJPT	11.00	0.00	COSO-SLM	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
98-1443.0001	INYO	INY-1923	TU 1	90-100	DBTG	11.00	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0097	INYO	INY-1824	L.3	SURF	PRJPT	11.00	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
32036-07	KER	KER-3080	EU 9, 0-20		debitage	11.10		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
98-2251.0005	INYO	INY-1923	TU 4	0-10	DBTG	11.10	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
986-1.0047	INYO	INY-1816	AREA 700-2	SURF	PRJPT	11.10	999.00	COSO-WSL	XRF	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	11.16		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	11.16		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
98-2342.0013	INYO	INY-1923	TU 2	70-80	DBTG	11.20	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0071	INYO	INY-1824	LZ	40-50	DBTG	11.20	999.00	COSO-WSL	XRF	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
274-004	Kern	KER-5373/H	SS 54	20-40	Debitage	11.24		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
274-004	Kern	KER-5373/H	SS 54	20-40	Debitage	11.24		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-1	Kern	KER-5373/H	SS 48	40-60	Debitage	11.30		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-1	Kern	KER-5373/H	SS 48	40-60	Debitage	11.30		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-33.0033	INYO	INY-1829A	UNIT 114		DBTG	11.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2251.0007	INYO	INY-1923	TU 4	0-10	DBTG	11.30	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
261-003	Kern	KER-5373/H	SS 48	0-20	Debitage	11.32		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
261-003	Kern	KER-5373/H	SS 48	0-20	Debitage	11.32		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41005-02	KER	KER-5373/H	RRU 23, 0-40		debitage	11.40		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41076-02	KER	KER-5373/H	EU 5, 0-20		debitage	11.40		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	11.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	11.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-31.0152	INYO	INY-1816	S4/E67	10-20	BIF	11.40	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
214-001	Kern	KER-5373/H	SS 27	100-120	Debitage	11.43		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
214-001	Kern	KER-5373/H	SS 27	100-120	Debitage	11.43		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
235-001-	Kern	KER-5373/H	SS 35	20-40	Debitage	11.44		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
235-001-	Kern	KER-5373/H	SS 35	20-40	Debitage	11.44		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-114.0024	INYO	INY-1829			BIF	11.50	14.10	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-106.0001	INYO	INY-1923	61M 9o	SURF	PRJPT	11.50	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
260-003	Kern	KER-5373/H	SS 47	40-60	Debitage	11.51		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
260-003	Kern	KER-5373/H	SS 47	40-60	Debitage	11.51		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.56		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.56		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
156-003	Kern	KER-5373/H	SP 2	0-130	Debitage	11.57		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
156-003	Kern	KER-5373/H	SP 2	0-130	Debitage	11.57		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	11.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	11.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
0044-01-b	KER	KER-4732	CU 1, 20-30		debitage	11.60		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
41016-02	KER	KER-5373/H	RRU 22, 80-120		debitage	11.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41072-02	KER	KER-5373/H	EU 3,100-120		debitage	11.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
257-003	Kern	KER-5373/H	SS 46	0-20	Debitage	11.65		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
257-003	Kern	KER-5373/H	SS 46	0-20	Debitage	11.65		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	11.65		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	11.65		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-31.0114	INYO	INY-1816	S150/E15	TRAN. G	DBTG	11.70	35.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0279	INYO	INY-1906	N34/W172	0-10	FLKTL	11.70	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2395.0001	INYO	INY-1923	TU 4	140-150	DBTG	11.70	16.30	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
213-002	Kern	KER-5373/H	SS 27	80-100	Core	11.71		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
213-002	Kern	KER-5373/H	SS 27	80-100	Core	11.71		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.74		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	11.74		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41006-02	KER	KER-5373/H	RRU 23, 40-80		debitage	11.80		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41053-02	KER	KER-5373/H	EU 2, 40-60		debitage	11.80		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0932	INYO	INY-1824	L.X, N2/E1	50-60	DBTG	11.80	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-152.0010	INYO	INY-1829	UNIT 131		DBTG	11.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	11.84		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	11.84		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41074-02	KER	KER-5373/H	EU 4, 60-80		debitage	11.90		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	11.93		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	11.93		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	11.94		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	11.94		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
234-002-	Kern	KER-5373/H	SS 35	0-20	Debitage	11.95		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
234-002-	Kern	KER-5373/H	SS 35	0-20	Debitage	11.95		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41011-02	KER	KER-5373/H	RRU 25,70-120		debitage	12.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41013-02	KER	KER-5373/H	EU 1, 20-40		debitage	12.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41O19-02	KER	KER-5373/H	EU 1 , 60-80		debitage	12.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41051-07	KER	KER-5373/H	RRU 27, 0-40		debitage	12.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41064-02	KER	KER-5373/H	EU 3, 40-60		debitage	12.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-105.0280	INYO	INY-1906	N34/W172	0-10	FLKTL	12.00	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2350.0006	INYO	INY-1923	TU 4	20-30	DBTG	12.00	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
98-2360.0016	INYO	INY-1923	TU 0004	50-60	DBTG	12.00	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2251.0006	INYO	INY-1923	TU 4	0-10	DBTG	12.00	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
235-001-	Kern	KER-5373/H	SS 35	20-40	Debitage	12.08		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
235-001-	Kern	KER-5373/H	SS 35	20-40	Debitage	12.08		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	12.10		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	12.10		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
986-1.0020	INYO	INY-1816	L 1	SURF	DBTG	12.10	13.20	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0268	INYO	INY-1906	N28/W152	0-10	DBTG	12.10	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-1443.0003	INYO	INY-1923	TU 1	90-100	DBTG	12.10	32.30	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	12.16		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	12.16		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.20		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.20		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-31.0117	INYO	INY-1816	S150/E0	TRAN. H	DBTG	12.20	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-152.0010	INYO	INY-1829	UNIT 131		DBTG	12.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2260.0001	INYO	INY-1923	TU 2	10-20	DBTG	12.20	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
234-002-	Kern	KER-5373/H	SS 35	0-20	Debitage	12.23		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
234-002-	Kern	KER-5373/H	SS 35	0-20	Debitage	12.23		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
25101-	Kern	KER-5373/H	SS 41	60-80	Debitage	12.24	23.04	Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
25101-	Kern	KER-5373/H	SS 41	60-80	Debitage	12.24	23.04	Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	12.26		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	12.26		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	12.26		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
302-002-	Kern	KER-5373/H	SS 104	0-20	Debitage	12.26		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
302-002-	Kern	KER-5373/H	SS 104	0-20	Debitage	12.26		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41043-01	KER	KER-5373/H	SCA 12, surface		debitage	12.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41021-02	KER	KER-5373/H	EU 1, 100-120'		debitage	12.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41049-01	KER	KER-5373/H	RRU 26, 0-40		debitage	12.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41060-05	KER	KER-5373/H	RRU 27,80-120		debitage	12.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41072-05	KER	KER-5373/H	EU 3,100-120		debitage	12.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
265-001	Kern	KER-5373/H	SS 48	80-100	Debitage	12.30		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
265-001	Kern	KER-5373/H	SS 48	80-100	Debitage	12.30		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.1036	INYO	INY-1824	S225/W6	SURF	BIF	12.30	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.35		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.35		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	12.36		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	12.36		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
307-002-	Kern	KER-5373/H	SS 106	20-40	Debitage	12.38		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
307-002-	Kern	KER-5373/H	SS 106	20-40	Debitage	12.38		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41016-06	KER	KER-5373/H	RRU 22, 80-120		debitage	12.40		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41060-04	KER	KER-5373/H	RRU 27, 80-120		debitage	12.40		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
162-002	Kern	KER-5373/H	SS 1	20-40	Debitage	12.41		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
162-002	Kern	KER-5373/H	SS 1	20-40	Debitage	12.41		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
295-004	Kern	KER-5373/H	SS 65	20-40	Debitage	12.41		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
295-004	Kern	KER-5373/H	SS 65	20-40	Debitage	12.41		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	12.42		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	12.42		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
166-004	Kern	KER-5373/H	SS-004	20-40	Debitage	12.43		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
166-004	Kern	KER-5373/H	SS-004	20-40	Debitage	12.43		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.45		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.45		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	12.46		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	12.46		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.46		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.46		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.47		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.47		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	12.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	12.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
0077 -01-a	KER	KER-4732	CU 2, 30-40		debitage	12.50		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
41047-02	KER	KER-5373/H	EU 2, 20-40		debitage	12.50		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41071-02	KER	KER-5373/H	EU 3,80-100		debitage	12.50		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
213-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	12.50		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
213-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	12.50		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
307-002-	Kern	KER-5373/H	SS 106	20-40	Debitage	12.50		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
307-002-	Kern	KER-5373/H	SS 106	20-40	Debitage	12.50		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.1029	INYO	INY-1824	S162/W30	SURF	BIF	12.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0032	INYO	INY-1928	L. 4	20-30	DBTG	12.50	999.00	COSO	VIS	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
251-001-	Kern	KER-5373/H	SS 41	60-80	Debitage	12.53		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
251-001-	Kern	KER-5373/H	SS 41	60-80	Debitage	12.53		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
21 0-002-	Kern	KER-5373/H	SS 27	20-40	Debitage	12.57		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
21 0-002-	Kern	KER-5373/H	SS 27	20-40	Debitage	12.57		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
43012-02	KER	KER-5392	RRU 45, 40-80		debitage	12.60		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
41051-05	KER	KER-5373/H	RRU 27, 0-40		debitage	12.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41075-02	KER	KER-5373/H	EU 4, 80-100		debitage	12.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41077-02	KER	KER-5373/H	EU 5, 20-40		debitage	12.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41020-04	KER	KER-5373/H	EU 1,80-100		debitage	12.60		Coso?		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41047-08	KER	KER-5373/H	EU 2, 20-40		debitage	12.60		Coso?		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
196-002	Kern	KER-5373/H	SS 19	0-20	Debitage	12.63		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
196-002	Kern	KER-5373/H	SS 19	0-20	Debitage	12.63		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
198-002	Kern	KER-5373/H	SS 20	0-20	Debitage	12.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
198-002	Kern	KER-5373/H	SS 20	0-20	Debitage	12.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	12.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	12.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
31007 -01	KER	KER-3080	SCA 27, surface		debitage	12.70		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
41015-02	KER	KER-5373/H	EU 2, 0-20		debitage	12.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41015-08	KER	KER-5373/H	EU 2, 0-20		debitage	12.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41060-06	KER	KER-5373/H	RRU 27, 80-120		debitage	12.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41066-02	KER	KER-5373/H	EU 4, 20-40		debitage	12.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41077-12	KER	KER-5373/H	EU 5, 20-40		debitage	12.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.71		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.71		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
309-002	Kern	KER-5373/H	SS 107	0-20	Debitage	12.73		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
309-002	Kern	KER-5373/H	SS 107	0-20	Debitage	12.73		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	12.75		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	12.75		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.75		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.75		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
41012-04	KER	KER-5373/H	EU1,0-20		debitage	12.80		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	12.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	12.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
213-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	12.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
213-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	12.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
298-005	Kern	KER-5373/H	SS 102	0-15	Debitage	12.81		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
298-005	Kern	KER-5373/H	SS 102	0-15	Debitage	12.81		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-6O	Debitage	12.83		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-6O	Debitage	12.83		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	12.83		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
264-001-	Kern	KER-5373/H	SS 48	60-80	Debitage	12.83		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.86		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	12.86		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
215-002-	Kern	KER-5373/H	SS 27	120-140	Debitage	12.89		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
215-002-	Kern	KER-5373/H	SS 27	120-140	Debitage	12.89		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41077-11	KER	KER-5373/H	EU 5, 20-40		debitage	12.90		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
209-002	Kern	KER-5373/H	SS 27	0-20	Debitage	12.91		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
209-002	Kern	KER-5373/H	SS 27	0-20	Debitage	12.91		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.93		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	12.93		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
248-001	Kern	KER-5373/H	SS 41	0-20	Debitage	12.98		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
248-001	Kern	KER-5373/H	SS 41	0-20	Debitage	12.98		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
13208-02	KER	KER-5373/H	TEU 1, 70-80		debitage	13.00		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-150.0022	INYO	INY-1829	UNIT 180		DBTG	13.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-159.0034	INYO	INY-1829	UNIT 264		DBTG	13.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	13.04		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	13.04		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249003	Kern	KER-5373/H	SS 41	20-40	Debitage	13.05		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249003	Kern	KER-5373/H	SS 41	20-40	Debitage	13.05		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	13.06		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-	Kern	KER-5373/H	SS 48	20-40	Debitage	13.06		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41060-03	KER	KER-5373/H	RRU 27,80-120		debitage	13.10		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41060-07	KER	KER-5373/H	RRU 27, 80-120		debitage	13.10		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41087 -02	KER	KER-5373/H	CU 1, 50-60		debitage	13.10		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
200-002-	Kern	KER-5373/H	SS 21	0-20	Debitage	13.10		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
200-002-	Kern	KER-5373/H	SS 21	0-20	Debitage	13.10		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
986-1.0032	INYO	INY-1816	L 1	SURF	DBTG	13.10	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-42.0010	INYO	INY-1829A	UNIT 393		DBTG	13.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0277	INYO	INY-1906	N32.5/W15.9	0-10	DBTG	13.10	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2260.0005	INYO	INY-1923	TU 2	10-20	DBTG	13.10	24.60	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
291-002-	Kern	KER-5373/H	SS 63	20-40	Debitage	13.12		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-1	Kern	KER-5373/H	SS 48	20-40	Debitage	13.17		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
262-001-1	Kern	KER-5373/H	SS 48	20-40	Debitage	13.17		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
243-001	Kern	KER-5373/H	SS 37	40-60	Debitage	13.19		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
243-001	Kern	KER-5373/H	SS 37	40-60	Debitage	13.19		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
0034-01	KER	KER-4732	Trench 2,0-50		PPT	13.20		Coso		310729	3936217	83		Holocene	latest-Holo	Wasco sandy loam
39016-01	KER	KER-3077	SCA 6, surface		debitage	13.20		Coso		428225	3863611	83		Holocene	latest-Holo	Leuhman-Challenger-Cajon complex, 0 to 15 percent slopes
41060-02	KER	KER-5373/H	RRU 27, 80-120		debitage	13.20		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	13.21		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	13.21		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	13.24		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
236-001-	Kern	KER-5373/H	SS 35	40-60	Debitage	13.24		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	13.29		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	13.29		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41052-04	KER	KER-5373/H	RRU 27, 40-80		debitage	13.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41060-08	KER	KER-5373/H	RRU 27, 80-120		debitage	13.30		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-21.0009	INYO	INY-1829A	UNIT 164		DBTG	13.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1561.0001	INYO	INY-1829	TU 1	SURF	DBTG	13.30	999.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1561.0007	INYO	INY-1829	TU 1	SURF	DBTG	13.30	37.40	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	13.31		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	13.31		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	13.31		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	13.31		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	13.31		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	13.31		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
181-002	Kern	KER-5373/H	SS 12	0-20	Debitage	13.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
181-002	Kern	KER-5373/H	SS 12	0-20	Debitage	13.40		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
98-2395.0013	INYO	INY-1923	TU 4	140-150	DBTG	13.40	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	13.42		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	13.42		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	13.45		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	13.45		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	13.45		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	13.45		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
200-002-	Kern	KER-5373/H	SS 21	0-20	Debitage	13.47		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
200-002-	Kern	KER-5373/H	SS 21	0-20	Debitage	13.47		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	13.47		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	13.47		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
278-002	Kern	KER-5373/H	SS 56	20-40	Debitage	13.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
278-002	Kern	KER-5373/H	SS 56	20-40	Debitage	13.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	13.50		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
263-002-	Kern	KER-5373/H	SS 48	40-60	Debitage	13.50		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-42.0020	INYO	INY-1829A	UNIT 393		DBTG	13.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
239-005	Kern	KER-5373/H	SS 36	0-20	Debitage	13.53		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
239-005	Kern	KER-5373/H	SS 36	0-20	Debitage	13.53		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
210-002-	Kern	KER-5373/H	SS 27	20-40	Debitage	13.54		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
210-002-	Kern	KER-5373/H	SS 27	20-40	Debitage	13.54		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	13.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	13.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	13.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
212-003-	Kern	KER-5373/H	SS 27	60-80	Debitage	13.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
234-002-	Kern	KER-5373/H	SS 35	0-20	Debitage	13.59	10.94	Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
234-002-	Kern	KER-5373/H	SS 35	0-20	Debitage	13.59	10.94	Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41014-02	KER	KER-5373/H	EU 1 , 40-60		debitage	13.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41051-02	KER	KER-5373/H	RRU 27, 0-40		debitage	13.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41052-05	KER	KER-5373/H	RRU 27, 40-80		debitage	13.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41058-02	KER	KER-5373/H	RRU 26, 80-120		debitage	13.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-28.0026	INYO	INY-1829A	UNIT 2		CORE	13.60	31.20	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2395.0012	INYO	INY-1923	TU 4	140-150	DBTG	13.60	20.60	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0007	INYO	INY-1816		SURF	DBTG	13.60	999.00	COSO-WSL	XRF	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	13.62		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	13.62		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	13.62		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
249-003-	Kern	KER-5373/H	SS 41	20-40	Debitage	13.62		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	13.62		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	13.62		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	13.63		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	13.63		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
187-002	Kern	KER-5373/H	SS 15	0-20	Debitage	13.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
187-002	Kern	KER-5373/H	SS 15	0-20	Debitage	13.64		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
266-003-	Kern	KER-5373/H	SS 49	0-20	Debitage	13.65		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
302-002-	Kern	KER-5373/H	SS 104	0-20	Debitage	13.67		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
302-002-	Kern	KER-5373/H	SS 104	0-20	Debitage	13.67		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	13.69		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
299-002-	Kern	KER-5373/H	SS 103	0-15	Debitage	13.69		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
43053-06	KER	KER-5392	EU 5, 40-60		biface	13.70		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
39006-02	KER	KER-3080	RRU 46, 0-40		debitage	13.70		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
41004-03	KER	KER-5373/H	RRU 22, 40-80		debitage	13.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41021-04	KER	KER-5373/H	EU 1, 100-120		debitage	13.70		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
291-002-	Kern	KER-5373/H	SS 63	20-40	Debitage	13.72		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
291-002-	Kern	KER-5373/H	SS 63	20-40	Debitage	13.72		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
252-006	Kern	KER-5373/H	SS 42	0-20	Debitage	13.73		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
252-006	Kern	KER-5373/H	SS 42	0-20	Debitage	13.73		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
290-003	Kern	KER-5373/H	SS 63	0-20	Debitage	13.75		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
81-244-1-51	INYO	INY-5276	S34.6/E42.3	-	PRJPT	13.77		CS-SM		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
43013-08	KER	KER-5392	RRU 46, 0-40		debitage	13.80		Coso		282092	3910160	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
41053-06	KER	KER-5373/H	EU 2, 40-60		debitage	13.80		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
41074-11	KER	KER-5373/H	EU 4, 60-80		debitage	13.80		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	13.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
256-006-	Kern	KER-5373/H	SS 45	0-20	Debitage	13.80		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002	Kern	KER-5373/H	SS 27	40-60	Debitage	13.86		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002	Kern	KER-5373/H	SS 27	40-60	Debitage	13.86		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
266-003-	Kern	KER-5373/H	SS 49	0-20	Debitage	13.87		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
280-002	Kern	KER-5373/H	SS 57	20-40	Core	13.88		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
280-002	Kern	KER-5373/H	SS 57	20-40	Core	13.88		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
32002-02	KER	KER-3080	EU 5, 20-40		debitage	13.90		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
41051-06	KER	KER-5373/H	RRU 27, OAO		debitage	13.90		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
986-1.0003	INYO	INY-1816	L 1	SURF	DBTG	13.90	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
986-1.0004	INYO	INY-1816	L 1	SURF	DBTG	13.90	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-159.0010	INYO	INY-1829	UNIT 264		DBTG	13.90	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0268	INYO	INY-1906	N28/W152	0-10	DBTG	14.00	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2260.0002	INYO	INY-1923	TU 2	10-20	DBTG	14.00	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-207.0024	INYO	INY-1829C	?		BIF	14.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
210-002-	Kern	KER-5373/H	SS 27	20-40	Debitage	14.15		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
210-002-	Kern	KER-5373/H	SS 27	20-40	Debitage	14.15		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
235-001-	Kern	KER-5373/H	SS 35	20-40	Debitage	14.16		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
235-001-	Kern	KER-5373/H	SS 35	20-40	Debitage	14.16		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
08027-01	KER	KER-5404	TU 1, 30-40		debitage	14.30		Coso		280735	3908996	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
984-159.0010	INYO	INY-1829	UNIT 264		DBTG	14.30	28.60	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	14.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
250-004-	Kern	KER-5373/H	SS 41	40-60	Debitage	14.49		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-26.0737	INYO	INY-1824	S229/W11	0-10	BIF	14.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
163-003	Kern	KER-5373/H	SS 2	0-20	Debitage	14.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
163-003	Kern	KER-5373/H	SS 2	0-20	Debitage	14.59		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
98-2351.0003	INYO	INY-1923	TU 0004	30-40	DBTG	14.70	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-150.0022	INYO	INY-1829	UNIT 180		DBTG	14.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-40.0008	INYO	INY-1829A	UNIT 236		DBTG	15.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1568.0001	INYO	INY-1829	TU 1	30-40	DBTG	15.10	999.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-159.0010	INYO	INY-1829	UNIT 264		DBTG	15.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
197-002	Kern	KER-5373/H	SS 19	20-40	Debitage	15.23		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
197-002	Kern	KER-5373/H	SS 19	20-40	Debitage	15.23		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-23.0031	INYO	INY-1829A	UNIT 33		CORE	15.30	33.40	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2342.0003	INYO	INY-1923	TU 2	70-80	DBTG	15.40	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
41015-07	KER	KER-5373/H	EU 2, 0-20		debitage	15.60		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-152.0012	INYO	INY-1829	UNIT 131		DBTG	15.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-40.0008	INYO	INY-1829A	UNIT 236		DBTG	15.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-42.0010	INYO	INY-1829A	UNIT 393		DBTG	15.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
41005-06	KER	KER-5373/H	RRU 23, 0-40		debitage	15.90		Coso		273403	3912865	83	11	Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-21.0009	INYO	INY-1829A	UNIT 164		DBTG	15.90	20.40	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-962.0001	INYO	INY-1923	TS 0890	SURF	PRJPT	15.90	0.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-21.0009	INYO	INY-1829A	UNIT 164		DBTG	16.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-23.0029	INYO	INY-1829A	UNIT 33		CORE	16.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
32036-08	KER	KER-3080	EU 9, 0-20		debitage	16.30		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes
98-2360.0011	INYO	INY-1923	TU 4	50-60	DBTG	16.50	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2360.0011	INYO	INY-1923	TU 0004	50-60	DBTG	16.50	0.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-29.0010	INYO	INY-1829A	UNIT 67		DBTG	16.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-14.0024	INYO	INY-1829A	?		CORE	16.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2395.0012	INYO	INY-1923	TU 4	140-150	DBTG	16.70	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2360.0018	INYO	INY-1923	TU 0004	50-60	DBTG	16.80	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0272	INYO	INY-1906	N30/W135	0-10	DBTG	17.00	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-29.0010	INYO	INY-1829A	UNIT 67		DBTG	17.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-42.0010	INYO	INY-1829A	UNIT 393		DBTG	17.10	20.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2351.0002	INYO	INY-1923	TU 0004	20-30	DBTG	17.10	0.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-42.0020	INYO	INY-1829A	UNIT 393		DBTG	17.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0001	INYO	INY-1829	TU 1	140-150	DBTG	17.20	999.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
213-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	17.38		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
213-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	17.38		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
98-1343.0080	INYO	INY-1923	CU 16	SURF	DBTG	17.50	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
215-002-	Kern	KER-5373/H	SS 27	120-140	Debitage	17.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
215-002-	Kern	KER-5373/H	SS 27	120-140	Debitage	17.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
237-002	Kern	KER-5373/H	SS 35	60-80	Debitage	17.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
237-002	Kern	KER-5373/H	SS 35	60-80	Debitage	17.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	17.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
211-002-	Kern	KER-5373/H	SS 27	40-60	Debitage	17.58		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-40.0008	INYO	INY-1829A	UNIT 236		DBTG	17.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1559.0002	INYO	INY-1829	TU 1	SURF	DBTG	17.70	22.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2260.0006	INYO	INY-1923	TU 2	10-20	DBTG	17.80	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
161-003-	Kern	KER-5373/H	SS 1	0-20	Debitage	17.97		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
161-003-	Kern	KER-5373/H	SS 1	0-20	Debitage	17.97		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
31005-01	KER	KER-3080	SCA 25, surface		biface	18.10		Coso		279291	3910557	83	11	Holocene	latest-Holo	Cajon loamy sand, 2 to 5 percent slopes

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
984-29.0010	INYO	INY-1829A	UNIT 67		DBTG	18.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-29.0010	INYO	INY-1829A	UNIT 67		DBTG	18.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1559.0001	INYO	INY-1829	TU 1	SURF	DBTG	18.40	999.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
251-001-	Kern	KER-5373/H	SS 41	60-80	Debitage	18.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
251-001-	Kern	KER-5373/H	SS 41	60-80	Debitage	18.52		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
987-108.0004	INYO	INY-1965	TU	0-10	DBTG	18.70	999.00	COSO	VIS	430442	3986710	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
231-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	18.76		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
231-003-	Kern	KER-5373/H	SS 27	80-100	Debitage	18.76		Coso		273403	3912865	83		Older Pleist.	Older Pleist	Elkhills sandy loam, 9 to 50 percent slopes, eroded
984-150.0022	INYO	INY-1829	UNIT 180		DBTG	18.80	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-105.0277	INYO	INY-1906	N32.5/W15.9	0-10	DBTG	18.80	999.00	COSO	VIS	429107	3985888	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
98-2251.0006	INYO	INY-1923	TU 4	0-10	DBTG	18.90	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1566.0001	INYO	INY-1829	TU 1	30-40	DBTG	18.90	999.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-85.0008	INYO	INY-1969	L. 4	SURF	PRJPT	18.90	999.00	COSO-SLM	XRF	431041	3986524	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
987-157.0013	INYO	INY-1928	L. 3, D.3	SURF	PRJPT	19.00	999.00	COSO-WCP	XRF	431849	3986397	83		pre-Quat	pre-Quat	ROCK OUTCROP-UPSPRING-SPARKHULE (CA909)
984-43.0024	INYO	INY-1829A	UNIT 368		DBTG	19.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0005	INYO	INY-1829	TU 1	140-150	DBTG	19.20	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-26.0102	INYO	INY-1824	L.4	SURF	DBTG	19.50	999.00	COSO	VIS	428188	3985183	83		pre-Quat	pre-Quat	ROCK OUTCROP-LITHIC TORRIORTHENTS-CALVISTA (CA913)
984-21.0009	INYO	INY-1829A	UNIT 164		DBTG	19.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0002	INYO	INY-1829	TU 1	140-150	DBTG	19.50	999.00	COSO-SLM	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0007	INYO	INY-1829	TU 1	140-150	DBTG	19.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2350.0001	INYO	INY-1923	TU 4	20-30	DBTG	19.70	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2253.0007	INYO	INY-1923	TU 4	10-20	DBTG	19.80	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0003	INYO	INY-1829	TU 1	140-150	DBTG	20.00	999.00	COSO-WSL	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-42.0010	INYO	INY-1829A	UNIT 393		DBTG	20.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
10550A	TULARE	TUL-0072		70-80	DBTG	21.10	0.00	COSO	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
984-159.0010	INYO	INY-1829	UNIT 264		DBTG	21.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-40.0008	INYO	INY-1829A	UNIT 236		DBTG	21.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-239.0024	INYO	INY-1829C			BIF	21.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2342.0022	INYO	INY-1923	TU 2	70-80	DBTG	22.00	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2342.0002	INYO	INY-1923	TU 2	70-80	DBTG	22.30	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-33.0034	INYO	INY-1829A	UNIT 114		BIF	22.40	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-224.0022	INYO	INY-1829C	UNIT 97		DBTG	23.00	25.60	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2395.0012	INYO	INY-1923	TU 4	140-150	DBTG	23.60	999.00	COSO-SLM	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-156.0010	INYO	INY-1829	UNIT 224		DBTG	23.90	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1314.0246	INYO	INY-1923	TU 1	30-40	DBTG	26.40	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-2262.0002	INYO	INY-1923	TU 2	10-20	DBTG	26.60	999.00	COSO	VIS	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1756.0039	INYO	INY-1829	CU 18	SURF	DBTG	26.90	999.00	COSO-WSL	XRF	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1568.0006	INYO	INY-1829	TU 1	30-40	DBTG	28.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-225.0020	INYO	INY-1829C	UNIT 124		DBTG	29.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0109	INYO	INY-1816	S122/E48	TRAN. E	FLKTL	30.00	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-226.0010	INYO	INY-1829C	UNIT 81		DBTG	30.60	53.50	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-23.0024	INYO	INY-1829A	UNIT 114		CORE	31.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0007	INYO	INY-1816		SURF	DBTG	32.50	999.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
98-1314.0245	INYO	INY-1923	TU 1	30-40	DBTG	32.60	999.00	COSO-WSL	XRF	426386	3986700	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-224.0022	INYO	INY-1829C	UNIT 97		DBTG	35.20	43.20	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-156.0020	INYO	INY-1829	UNIT 224		DBTG	36.50	41.60	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-29.0010	INYO	INY-1829A	UNIT 431		DBTG	36.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-152.0006	INYO	INY-1829	UNIT 131		DBTG	37.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-215.0020	INYO	INY-1829C	UNIT 127		DBTG	37.10	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-215.0020	INYO	INY-1829C	UNIT 127		DBTG	37.30	45.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)

Appendix D. Coso Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
984-224.0022	INYO	INY-1829C	UNIT 97		DBTG	37.60	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0210	INYO	INY-1816	N31/W26.5	0-10	DBTG	40.00	0.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0210	INYO	INY-1816	N31/W26.5	0-10	DBTG	40.00	0.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-29.0010	INYO	INY-1829A	UNIT 67		DBTG	40.40	48.40	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-227.0010	INYO	INY-1829C	UNIT 304		DBTG	41.70	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-32.0026	INYO	INY-1829A	UNIT 91		CORE	43.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-224.0022	INYO	INY-1829C	UNIT 97		DBTG	46.90	55.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-26.0026	INYO	INY-1829A	UNIT 167		CORE	47.00	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0210	INYO	INY-1816	N31/W26.5	0-10	DBTG	48.00	0.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-227.0010	INYO	INY-1829C	UNIT 304		DBTG	48.30	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
987-31.0210	INYO	INY-1816	N31/W26.5	0-10	DBTG	50.00	0.00	COSO	VIS	427494	3984964	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-40.0008	INYO	INY-1829A	UNIT 236		DBTG	50.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)
984-29.0010	INYO	INY-1829A	UNIT 67		DBTG	64.50	999.00	COSO	VIS	428182	3989303	83		pre-Quat	pre-Quat	UPSPRING-BLACKTOP-ROCK OUTCROP (CA739)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
250-10-158	INYO	INY-5757	S6.5/W13	10-20	DBTG	0.90	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
250-1-93a	INYO	INY-5757	S15/W15	C	DBTG	0.90	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
252-10-285b	INYO	INY-5759	N3/E16	0-10	DBTG	0.90	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
252-10-285e	INYO	INY-5759	N3/E16	0-10	DBTG	0.90	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
255-10-859d	INYO	INY-5763	N29/E71	10-20	DBTG	0.90	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
95	INYO	INY-4663	SSC; N9/W36	0-10	DBTG	1.00	0.00	FS	VIS	398880	4063260		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
250-10-133e	INYO	INY-5757	S10/W15	0-10	DBTG	1.00	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
250-10-133d	INYO	INY-5757	S10/W15	0-10	DBTG	1.00	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
251-1-6	INYO	INY-5758	S7.1/E8	SURF	DBTG	1.00	0.00	FS	VIS	394598	4070763	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
252-10-285a	INYO	INY-5759	N3/E16	0-10	DBTG	1.00	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
252-10-285c	INYO	INY-5759	N3/E16	0-10	DBTG	1.00	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
259-10-30b	INYO	INY-5760	S26/W10	40-60	DBTG	1.00	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
5011	TULARE	TUL-1198			DBTG	1.00	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		0-10	DBTG	1.00	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		0-10	DBTG	1.00	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5077	TULARE	TUL-1235			DBTG	1.00	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5078	TULARE	TUL-1235			DBTG	1.00	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5221	TULARE	TUL-1258			PRJPT	1.00	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
46	INYO	INY-4663	SCU; N10/W25		DBTG	1.10	0.00	FS	XRF	398880	4063260		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
249-10-133b	INYO	INY-5397	N5/W2.5	0-10	DBTG	1.10	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
250-10-133f	INYO	INY-5757	S10/W15	0-10	DBTG	1.10	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
250-10-133b	INYO	INY-5757	S15/W15	0-10	DBTG	1.10	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
252-10-285d	INYO	INY-5759	N3/E16	0-10	DBTG	1.10	4.20	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
253-10-624b	INYO	INY-5761	S8/W2	70-80	DBTG	1.10	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
254-1-8	INYO	INY-5762	N6.6/W42	SURF	DBTG	1.10	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
255-10-900a	INYO	INY-5763	N53.5/E15	60-70	DBTG	1.10	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-724c	INYO	INY-5763	S80/W30	0-10	DBTG	1.10	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
256-10-387a	INYO	INY-5764	S2/W2	0-10	DBTG	1.10	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-422c	INYO	INY-5764	FEATURE 8	0-10	DBTG	1.10	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5013	TULARE	TUL-1198			DBTG	1.10	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5014	TULARE	TUL-1198			DBTG	1.10	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		20-30	DBTG	1.10	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5079	TULARE	TUL-1235			DBTG	1.10	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5206	TULARE	TUL-1258			PRJPT	1.10	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5210	TULARE	TUL-1258			PRJPT	1.10	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
0-375AA	INYO	PINYON HOUSE	STRUCTURE 10		DBTG	1.10	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
249-10-133ac	INYO	INY-5397	N5/W2.5	0-10	DBTG	1.20	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
250-1-85	INYO	INY-5757	S15/W15	E	DBTG	1.20	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
253-10-438c	INYO	INY-5761	S7.5/W2	85-90	DBTG	1.20	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5012	TULARE	TUL-1198			DBTG	1.20	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU4	TULARE	TUL-1227		10-20	DBTG	1.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		40-50	FLKTL	1.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		30-40	DBTG	1.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU2	TULARE	TUL-1227		10-20	DBTG	1.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU3	TULARE	TUL-1227		40-50	DBTG	1.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5215	TULARE	TUL-1258			PRJPT	1.20	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5216	TULARE	TUL-1258			PRJPT	1.20	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
1353-24-2330	TULARE	TUL-0024		0-12"	PRJPT	1.20	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-602	TULARE	TUL-0024		22"	DRILL	1.20	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-1400	TULARE	TUL-0024		12"	PRJPT	1.20	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-874CA	INYO	INY-1756	STRUCTURE 6		DBTG	1.20	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-874CA	INYO	INY-1756	STRUCTURE 6		DBTG	1.20	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1724C	INYO	PINYON HOUSE	STRUCTURE 1		DBTG	1.20	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
0-1730C	INYO	PINYON HOUSE	STRUCTURE 1		DBTG	1.20	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
0-326A	INYO	PINYON HOUSE	STRUCTURE 4		DBTG	1.20	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
88-4-10	FRESNO	88A-4			DBTG	1.30	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
256-10-387d	INYO	INY-5764	S2/W2	0-10	DBTG	1.30	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-442b	INYO	INY-5764	S18/W97.5	10-20	DBTG	1.30	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
EU2	TULARE	TUL-1227		10-20	DBTG	1.30	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5222	TULARE	TUL-1258			BIF	1.30	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
7249C	TULARE	TUL-0024		180-190	DBTG	1.30	3.40	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1517-24-2333	TULARE	TUL-0024		12"	PRJPT	1.30	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-852	TULARE	TUL-0024		6-12"	PRJPT	1.30	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
7576B	TULARE	TUL-0028		10-20	DBTG	1.30	0.00	FS	VIS	338780	4042480		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-112AA	INYO	PINYON HOUSE	STRUCTURE 14		DBTG	1.30	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
5386	FRESNO	FRE-2174			PRJPT	1.40	0.00	FS	XRF	362450	4107250		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
252-10-297e	INYO	INY-5759	S10.5/E36	0-10	DBTG	1.40	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
254-1-31a	INYO	INY-5762	N21.2/W0	SURF	DBTG	1.40	6.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
256-10-431a	INYO	INY-5764	FEATURE 8	10-20	DBTG	1.40	2.50	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5225	TULARE	TUL-1258			FLKTL	1.40	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
0-554CC	INYO	INY-1700	UNIT B	10-20	DBTG	1.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-554CC	INYO	INY-1700	UNIT B	10-20	DBTG	1.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1145CA	INYO	INY-1756	STRUCTURE 8		DBTG	1.40	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1145CA	INYO	INY-1756	STRUCTURE 8		DBTG	1.40	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-112AB	INYO	PINYON HOUSE	STRUCTURE 14		DBTG	1.40	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-240-10-860	INYO	INY-5281	N58/W58.5	0-10	PRJPT	1.47		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5329-07	FRESNO	87A-31			DBTG	1.50	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5374	FRESNO	FRE-2170			PRJPT	1.50	0.00	FS	XRF	362240	4107400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5387	FRESNO	FRE-2175			PRJPT	1.50	0.00	FS	XRF	362640	4106980		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-256e	INYO	INY-5273/H Locus			DBTG	1.50	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-194e	INYO	INY-5285/H			DBTG	1.50	0.00	FS	VIS	390350	4094170		11	Older Pleist.	Older Pleist	Taboose-Lava flows complex, 5 to 30 percent slopes
7236A	TULARE	TUL-0024		50-60	DBTG	1.50	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-2279CB	INYO	INY-1700	STRUCTURE 7		DBTG	1.50	1.20	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2279CB	INYO	INY-1700	STRUCTURE 7		DBTG	1.50	1.20	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-318AB	INYO	PINYON HOUSE	STRUCTURE 3		DBTG	1.50	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-248-10-502	INYO	INY-5267	S170/E122	10-20	PRJPT	1.58		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
349-216	MONO	A48	SUR	SUR	PRJPT	1.60	0.00	FS	XRF	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
EU1	TULARE	TUL-1227		40-50	DBTG	1.60	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5082	TULARE	TUL-1235			DBTG	1.60	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
1353-24-560	TULARE	TUL-0024		24"	PRJPT	1.60	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1515-24-795	TULARE	TUL-0024		0-6"	PRJPT	1.60	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-2352CA	INYO	INY-1700	STRUCTURE 9		DBTG	1.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-3199CC	INYO	INY-1700	S3/E8	30-40	DBTG	1.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2352CA	INYO	INY-1700	STRUCTURE 9		DBTG	1.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-3199CC	INYO	INY-1700	S3/E8	30-40	DBTG	1.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1673CB	INYO	PINYON HOUSE	STRUCTURE 2		DBTG	1.60	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
88-4-07	FRESNO	88A-4			DBTG	1.70	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-01	FRESNO	88A-5			PRJPT	1.70	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
9-498	INYO	INY-1386	U20	.5-1'	PRJPT	1.70	0.00	FS	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
252-10-321a	INYO	INY-5759	S31/E24	30-40	DBTG	1.70	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
253-10-438a	INYO	INY-5761	S7.5/W2	85-90	DBTG	1.70	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-883a	INYO	INY-5763	N53.5/E15	20-30	DBTG	1.70	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
EU3	TULARE	TUL-1227		10-20	DBTG	1.70	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU3	TULARE	TUL-1227		40-50	DBTG	1.70	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5213	TULARE	TUL-1258			PRJPT	1.70	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
1521-24-2926	TULARE	TUL-0024		SURFACE	PRJPT	1.70	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-1309	TULARE	TUL-0024		24-30"	PRJPT	1.70	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-678C/2C	INYO	INY-1700	UNIT D	0-10	DBTG	1.70	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-718CB	INYO	INY-1700	UNIT D	40-50	DBTG	1.70	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-678C/2C	INYO	INY-1700	UNIT D	0-10	DBTG	1.70	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-718CB	INYO	INY-1700	UNIT D	40-50	DBTG	1.70	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1128C	INYO	INY-1756	STRUCTURE 8		DBTG	1.70	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1128C	INYO	INY-1756	STRUCTURE 8		DBTG	1.70	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
5323	FRESNO	87A-31			PRJPT	1.80	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-14	FRESNO	88A-4			DBTG	1.80	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
394	INYO	INY-3802/H	CU; N15/W6	40-50	DBTG	1.80	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
542	INYO	INY-4661/H	SCU; N5/E0		DBTG	1.80	0.00	FS	XRF	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5201	TULARE	TUL-1258			PRJPT	1.80	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
1353-24-2431	TULARE	TUL-0024		12-24"	PRJPT	1.80	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-095CB	INYO	INY-1700	STRUCTURE 3		DBTG	1.80	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-095CB	INYO	INY-1700	STRUCTURE 3		DBTG	1.80	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-554CB	INYO	INY-1700	UNIT B	10-20	DBTG	1.80	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-554CB	INYO	INY-1700	UNIT B	10-20	DBTG	1.80	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
88-4-02	FRESNO	88A-4			DBTG	1.90	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-20	FRESNO	88A-4			DBTG	1.90	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
44	FRESNO	FRE-0814		0-10	PRJPT	1.90	0.00	FS	XRF	299600	4113400		11	pre-Quat	pre-Quat	SHAVER FAMILY, 35 TO 65 PERCENT SLOPES

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
227-1-194c	INYO	INY-5285/H			DBTG	1.90	0.00	FS	VIS	390350	4094170		11	Older Pleist.	Older Pleist	Taboose-Lava flows complex, 5 to 30 percent slopes
252-10-308a	INYO	INY-5759	S31/E24	0-10	DBTG	1.90	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
256-10-442d	INYO	INY-5764	S18/W97.5	10-20	DBTG	1.90	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-442e	INYO	INY-5764	S18/W97.5	10-20	DBTG	1.90	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5231	TULARE	TUL-1258			FLKTL	1.90	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5277	TULARE	TUL-0304			PRJPT	1.90	0.00	FS	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
0-554CA	INYO	INY-1700	UNIT B	10-20	DBTG	1.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-573CB	INYO	INY-1700	UNIT C	0-10	DBTG	1.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-603CA	INYO	INY-1700	UNIT C	10-20	DBTG	1.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-554CA	INYO	INY-1700	UNIT B	10-20	DBTG	1.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-573CB	INYO	INY-1700	UNIT C	0-10	DBTG	1.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-603CA	INYO	INY-1700	UNIT C	10-20	DBTG	1.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
394	INYO	INY-3802/H	CU; N15/W6	40-50	DBTG	2.00	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
395	INYO	INY-3802/H	CU; N15/W6	50-60	DBTG	2.00	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
256	INYO	INY-5273/H	3C	C	DBTG	2.00	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-212f	INYO	INY-5282			DBTG	2.00	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-194a	INYO	INY-5285/H			DBTG	2.00	0.00	FS	VIS	390350	4094170		11	Older Pleist.	Older Pleist	Taboose-Lava flows complex, 5 to 30 percent slopes
249-10-133c	INYO	INY-5397	N5/W2.5	0-10	DBTG	2.00	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-200d	INYO	INY-5397	N49.5/E41	0-20	DBTG	2.00	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-206	INYO	INY-5397	N49.5/E41	0-20	DBTG	2.00	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
252-10-312b	INYO	INY-5759	S31/E24	10-20	DBTG	2.00	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
252-10-312c	INYO	INY-5759	S31/E24	10-20	DBTG	2.00	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
253-10-232c	INYO	INY-5761	S10/W70	40-60	DBTG	2.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-232d	INYO	INY-5761	S10/W70	40-60	DBTG	2.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-232e	INYO	INY-5761	S10/W70	40-60	DBTG	2.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-859e	INYO	INY-5763	N29/E71	10-20	DBTG	2.00	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
256-10-387e	INYO	INY-5764	S2/W2	0-10	DBTG	2.00	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-450c	INYO	INY-5764	S18/W97.5	20-30	DBTG	2.00	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
4995	TULARE	TUL-1198			FLKTL	2.00	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5194	TULARE	TUL-1257			DBTG	2.00	0.00	FS	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5225	TULARE	TUL-1258			FLKTL	2.00	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5232-02	TULARE	TUL-1258			DBTG	2.00	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
1353-24-2867	TULARE	TUL-0024		0-12"	PRJPT	2.00	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-827	MONO	IA19	SUR	SUR	PRJPT	2.00	0.00	FS	XRF	337878	4173183	83		LtP	latest-Pleist	Calpine family-Rock outcrop complex, 0 to 15 percent slopes.
349-816	MONO	IA53	SUR	SUR	PRJPT	2.00	0.00	FS	XRF	336769	4174023	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
0-2279CA	INYO	INY-1700	STRUCTURE 7		DBTG	2.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-444CB	INYO	INY-1700	STRUCTURE 12		DBTG	2.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2279CA	INYO	INY-1700	STRUCTURE 7		DBTG	2.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-444CB	INYO	INY-1700	STRUCTURE 12		DBTG	2.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1121CA	INYO	INY-1756	STRUCTURE 8		DBTG	2.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1145CB	INYO	INY-1756	STRUCTURE 8		DBTG	2.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1121CA	INYO	INY-1756	STRUCTURE 8		DBTG	2.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1145CB	INYO	INY-1756	STRUCTURE 8		DBTG	2.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-240-1-314	INYO	INY-5281	N0/W60	I	PRJPT	2.03		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5329-04	FRESNO	87A-31			DBTG	2.10	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-03	FRESNO	88A-4			DBTG	2.10	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
398	INYO	INY-3802/H	CU; N9/W20	20-30	DBTG	2.10	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
255-10-724a	INYO	INY-5763	S80/W30	0-10	DBTG	2.10	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5305	TULARE	TUL-1262			PRJPT	2.10	0.00	FS	XRF	376810	4057190		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7455	TULARE	TUL-0024		30-40	PRJPT	2.10	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-549	MONO	F147	SUR	LOCUS A	BIF	2.10	0.00	FS	XRF	338021	4183208	83		pre-Quat	pre-Quat	Haypress family-Rock outcrop association, 30 to 60 percent slopes.
0-2424CB	INYO	INY-1700	STRUCTURE 10		DBTG	2.10	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2424CB	INYO	INY-1700	STRUCTURE 10		DBTG	2.10	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
81-240-10-868	INYO	INY-5281	N58/W58.5	10-20	PRJPT	2.18		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5329-06	FRESNO	87A-31			DBTG	2.20	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
256	INYO	INY-5273/H	3C	D	DBTG	2.20	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
252-10-297a	INYO	INY-5759	S10.5/E36	0-10	DBTG	2.20	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
252-10-297b	INYO	INY-5759	S10.5/E36	0-10	DBTG	2.20	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
255-10-859c	INYO	INY-5763	N29/E71	10-20	DBTG	2.20	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5081	TULARE	TUL-1235			DBTG	2.20	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5217	TULARE	TUL-1258			PRJPT	2.20	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
0-318AA	INYO	PINYON HOUSE	STRUCTURE 3		DBTG	2.20	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
0-375AB	INYO	PINYON HOUSE	STRUCTURE 10		DBTG	2.20	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
81-240-10-860	INYO	INY-5281	N58/W58.5	0-10	PRJPT	2.20		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
00409	FRESNO	FRE-1360		10	PRJPT	2.20	0.00	FS?	XRF	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
5325	FRESNO	87A-31			PRJPT	2.30	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5329-09	FRESNO	87A-31			DBTG	2.30	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-15	FRESNO	88A-4			DBTG	2.30	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
588	INYO	INY-4661/H	SSC; N0/W5	0-10	BIF	2.30	0.00	FS	XRF	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
252-10-308c	INYO	INY-5759	S31/E24	0-10	DBTG	2.30	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
252-10-312a	INYO	INY-5759	S31/E24	10-20	DBTG	2.30	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
255-10-724b	INYO	INY-5763	S80/W30	0-10	DBTG	2.30	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
256-10-419a	INYO	INY-5764	FEATURE 1	10-20	DBTG	2.30	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-419b	INYO	INY-5764	FEATURE 1	10-20	DBTG	2.30	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5254	TULARE	TUL-1250			DBTG	2.30	0.00	FS	XRF	351650	4023850		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5220	TULARE	TUL-1258			BIF	2.30	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
7237D	TULARE	TUL-0024		60-70	DBTG	2.30	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5272	TULARE	TUL-0304			DBTG	2.30	0.00	FS	XRF	351500	4026750		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
0-192AB	INYO	PINYON HOUSE	STRUCTURE 14		DBTG	2.30	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
5327	FRESNO	87A-31			PRJPT	2.40	0.00	FS	XRF	374870	4070410			pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-04	FRESNO	88A-4			DBTG	2.40	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227	INYO	INY-3784/H	3C		PRJPT	2.40	0.00	FS	XRF	385480	4112690		11	Holocene	late-Holo	Goodale-Cartago complex, 5 to 15 percent slopes
227-1-256b	INYO	INY-5273/H Locus			DBTG	2.40	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-212g	INYO	INY-5282			DBTG	2.40	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
249-10-200c	INYO	INY-5397	N49.5/E41	0-20	DBTG	2.40	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
253-10-232a	INYO	INY-5761	S10/W70	40-60	DBTG	2.40	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-770e	INYO	INY-5763	S80/W30	0-10	DBTG	2.40	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-834d	INYO	INY-5763	S35/W195	0-10	DBTG	2.40	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
256-10-431b	INYO	INY-5764	FEATURE 8	10-20	DBTG	2.40	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-450e	INYO	INY-5764	S18/W97.5	20-30	DBTG	2.40	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5018	TULARE	TUL-1198			DBTG	2.40	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		60-70	FLKTL	2.40	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5105	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5105	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5105	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5105	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5107	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5107	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5107	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5107	TULARE	TUL-1240			BIF	2.40	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5205	TULARE	TUL-1258			BIF	2.40	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
7231C	TULARE	TUL-0024		0-10	DBTG	2.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-444CA	INYO	INY-1700	STRUCTURE 12		DBTG	2.40	2.10	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-3199CB	INYO	INY-1700	S3/E8	30-40	DBTG	2.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-678C/2A	INYO	INY-1700	UNIT D	0-10	DBTG	2.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-444CA	INYO	INY-1700	STRUCTURE 12		DBTG	2.40	2.10	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-3199CB	INYO	INY-1700	S3/E8	30-40	DBTG	2.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-678C/2A	INYO	INY-1700	UNIT D	0-10	DBTG	2.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
81-240-10-713	INYO	INY-5281	N25/W46	0-10	PRJPT	2.41		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-1-1	INYO	INY-5281	N4.2/W89.2	-	DRILL	2.45		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-10	FRESNO	88A-4			DBTG	2.50	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-12	FRESNO	88A-4			DBTG	2.50	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00211	FRESNO	FRE-1044		20	PRJPT	2.50	0.00	FS	VIS	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
256	INYO	INY-5273/H	3C	B	DBTG	2.50	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-212e	INYO	INY-5282			DBTG	2.50	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
249-10-200b	INYO	INY-5397	N49.5/E41	0-20	DBTG	2.50	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-280b	INYO	INY-5397	N89/E145	0-20	DBTG	2.50	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-280e	INYO	INY-5397	N89/E145	0-20	DBTG	2.50	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
250-10-133c	INYO	INY-5757	S15/W15	0-10	DBTG	2.50	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
252-10-297d	INYO	INY-5759	S10.5/E36	0-10	DBTG	2.50	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
259-10-156b	INYO	INY-5760	S13.5/W22	30-40	DBTG	2.50	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
253-10-438b	INYO	INY-5761	S7.5/W2	85-90	DBTG	2.50	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-724d	INYO	INY-5763	S80/W30	0-10	DBTG	2.50	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-770c	INYO	INY-5763	S80/W30	0-10	DBTG	2.50	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
256-10-415	INYO	INY-5764	FEATURE 1	0-10	DBTG	2.50	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-422a	INYO	INY-5764	FEATURE 8	0-10	DBTG	2.50	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
256-10-442c	INYO	INY-5764	S18/W97.5	10-20	DBTG	2.50	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5016	TULARE	TUL-1198			DBTG	2.50	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7231B	TULARE	TUL-0024		0-10	DBTG	2.50	3.60	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10542A	TULARE	TUL-0072		SURFACE	DBTG	2.50	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-1905CA	INYO	INY-1700	STRUCTURE 3		DBTG	2.50	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2424CA	INYO	INY-1700	STRUCTURE 10		DBTG	2.50	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1905CA	INYO	INY-1700	STRUCTURE 3		DBTG	2.50	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-712C	INYO	INY-1700	UNIT D	30-40	DBTG	2.50	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2424CA	INYO	INY-1700	STRUCTURE 10		DBTG	2.50	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-712C	INYO	INY-1700	UNIT D	30-40	DBTG	2.50	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
1255	INYO	INY-3782/H	CU; S9/W70	30-40	DBTG	2.60	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
405	INYO	INY-3802/H	SSC; N44/E74	0-10	DBTG	2.60	0.00	FS	VIS	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
576	INYO	INY-4661/H	SSC; N6.3/W4	0-10	DBTG	2.60	0.00	FS	XRF	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-244i	INYO	INY-5267 Locus D1			DBTG	2.60	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-256a	INYO	INY-5273/H Locus			DBTG	2.60	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-256f	INYO	INY-5273/H Locus			DBTG	2.60	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-257b	INYO	INY-5273/H Locus			DBTG	2.60	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
253-10-381b	INYO	INY-5761	S7.5/W2	40-50	DBTG	2.60	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5195	TULARE	TUL-1257			DBTG	2.60	0.00	FS	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5312-01	TULARE	TUL-1265			BIF	2.60	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7239E	TULARE	TUL-0024		80-90	DBTG	2.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10548A	TULARE	TUL-0072		50-60	DBTG	2.60	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-2932CA	INYO	INY-1700	S1/E10	30-40	DBTG	2.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2932CA	INYO	INY-1700	S1/E10	30-40	DBTG	2.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1186CB	INYO	PINYON HOUSE	QUADRANT NE1		DBTG	2.60	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-240-10-705	INYO	INY-5281	N25/W45	20-30	PRJPT	2.61		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-1-47	INYO	INY-5281	N11.5/W0.9	-	PRJPT	2.63		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
1244	INYO	INY-3782/H	CU; S9/W70	0-10	DBTG	2.70	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
1255	INYO	INY-3782/H	CU; S9/W70	30-40	DBTG	2.70	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
1255	INYO	INY-3782/H	CU; S9/W70	30-40	DBTG	2.70	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-244j	INYO	INY-5267 Locus D1			DBTG	2.70	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-244h	INYO	INY-5267 Locus D1			DBTG	2.70	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-244g	INYO	INY-5267 Locus D1			DBTG	2.70	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-244d	INYO	INY-5267 Locus D1			DBTG	2.70	0.00	FS	VIS	390510	4099280	83		Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-256d	INYO	INY-5273/H Locus			DBTG	2.70	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-210a	INYO	INY-5281			DBTG	2.70	0.00	FS	VIS	390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
259-10-30d	INYO	INY-5760	S26/W10	40-60	DBTG	2.70	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
253-10-381d	INYO	INY-5761	S7.5/W2	40-50	DBTG	2.70	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-381e	INYO	INY-5761	S7.5/W2	40-50	DBTG	2.70	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
256-10-387c	INYO	INY-5764	S2/W2	0-10	DBTG	2.70	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
7234A	TULARE	TUL-0024		30-40	DBTG	2.70	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7240A	TULARE	TUL-0024		90-100	DBTG	2.70	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7575A	TULARE	TUL-0028		0-10	DBTG	2.70	0.00	FS	VIS	338780	4042480		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
10544C	TULARE	TUL-0072		10-20	DBTG	2.70	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
81-240-10-655	INYO	INY-5281	N0/W63	40-50 cm	PRJPT	2.77		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-08	FRESNO	88A-4			DBTG	2.80	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-19	FRESNO	88A-4			DBTG	2.80	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-09	FRESNO	FRE-2169			DBTG	2.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1244	INYO	INY-3782/H	CU; S9/W70	0-10	DBTG	2.80	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
576	INYO	INY-4661/H	SSC; N6.3/W4	0-10	DBTG	2.80	0.00	FS	VIS	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-244e	INYO	INY-5267 Locus D1			DBTG	2.80	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-244b	INYO	INY-5267 Locus D1			DBTG	2.80	0.00	FS	VIS	390510	4099280	83		Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-244c	INYO	INY-5267 Locus D1			DBTG	2.80	0.00	FS	VIS	390510	4099280	83		Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
256	INYO	INY-5273/H	3C	E	DBTG	2.80	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-256c	INYO	INY-5273/H Locus			DBTG	2.80	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-210b	INYO	INY-5281			DBTG	2.80	0.00	FS	VIS	390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-194b	INYO	INY-5285/H			DBTG	2.80	0.00	FS	VIS	390350	4094170		11	Older Pleist.	Older Pleist	Taboose-Lava flows complex, 5 to 30 percent slopes
259-10-85b	INYO	INY-5760	S18.5/W13	0-20	DBTG	2.80	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
EU5	TULARE	TUL-1227		100-110	DBTG	2.80	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		70-80	DBTG	2.80	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		90-100	FLKTL	2.80	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7234B	TULARE	TUL-0024		30-40	DBTG	2.80	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7240B	TULARE	TUL-0024		90-100	DBTG	2.80	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
7576A	TULARE	TUL-0028		10-20	DBTG	2.80	0.00	FS	VIS	338780	4042480		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-727CA	INYO	INY-1700	UNIT E	20-30	DBTG	2.80	2.60	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-727CA	INYO	INY-1700	UNIT E	20-30	DBTG	2.80	2.60	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1027C	INYO	INY-1756	STRUCTURE 15		DBTG	2.80	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1027C	INYO	INY-1756	STRUCTURE 15		DBTG	2.80	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-248-1-403	INYO	INY-5267	S173/E137	D	PRJPT	2.89		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
88-4-20	FRESNO	88A-4			DBTG	2.90	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00231	FRESNO	FRE-1964		10	BIF	2.90	0.00	FS	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00231	FRESNO	FRE-1964		10	BIF	2.90	0.00	FS	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5355-10	FRESNO	FRE-2169			DBTG	2.90	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1244	INYO	INY-3782/H	CU; S9/W70	0-10	DBTG	2.90	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
505	INYO	INY-4661/H	SCU; N15/W5		DBTG	2.90	0.00	FS	XRF	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-244f	INYO	INY-5267 Locus D1			DBTG	2.90	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
256	INYO	INY-5273/H	3C	G	DBTG	2.90	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-257c	INYO	INY-5273/H Locus			DBTG	2.90	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-264i	INYO	INY-5275 Locus D1			DBTG	2.90	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-212a	INYO	INY-5282			DBTG	2.90	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-212b	INYO	INY-5282			DBTG	2.90	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
253-10-624c	INYO	INY-5761	S8/W2	70-80	DBTG	2.90	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-624d	INYO	INY-5761	S8/W2	70-80	DBTG	2.90	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
EU3	TULARE	TUL-1227		40-50	FLKTL	2.90	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5058	TULARE	TUL-1231			BIF	2.90	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5192-01	TULARE	TUL-1257			DBTG	2.90	0.00	FS	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5311-06	TULARE	TUL-1264			DBTG	2.90	0.00	FS	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7233B	TULARE	TUL-0024		20-30	DBTG	2.90	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1353-24-2154	TULARE	TUL-0024		12-24"	PRJPT	2.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-727CB	INYO	INY-1700	UNIT E	20-30	DBTG	2.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-727CB	INYO	INY-1700	UNIT E	20-30	DBTG	2.90	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1022CA	INYO	INY-1756	STRUCTURE 12		DBTG	2.90	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1045C	INYO	INY-1756	QUADRANT 22		DBTG	2.90	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.4	INYO	INY-1756		SURFACE	DBTG	2.90	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1022CA	INYO	INY-1756	STRUCTURE 12		DBTG	2.90	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1045C	INYO	INY-1756	QUADRANT 22		DBTG	2.90	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.4	INYO	INY-1756		SURFACE	DBTG	2.90	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-240-1-22	INYO	INY-5281	S1.3/W83	-	PRJPT	2.94		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
1244	INYO	INY-3782/H	CU; S9/W70	0-10	DBTG	3.00	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
1255	INYO	INY-3782/H	CU; S9/W70	30-40	DBTG	3.00	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
394	INYO	INY-3802/H	CU; N15/W6	40-50	DBTG	3.00	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
398	INYO	INY-3802/H	CU; N9/W20	20-30	DBTG	3.00	0.00	FS	VIS	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
576	INYO	INY-4661/H	SSC; N6.3/W4	0-10	DBTG	3.00	0.00	FS	VIS	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-244a	INYO	INY-5267 Locus D1			DBTG	3.00	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
245	INYO	INY-5268	3C		PRJPT	3.00	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
264	INYO	INY-5275	3C	H	DBTG	3.00	0.00	FS	XRF	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-265h	INYO	INY-5275 Locus D2			DBTG	3.00	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
249-10-133d	INYO	INY-5397	N5/W2.5	0-10	DBTG	3.00	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-200a	INYO	INY-5397	N49.5/E41	0-20	DBTG	3.00	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-236a	INYO	INY-5397	N79.5/E89	0-20	DBTG	3.00	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
252-10-308b	INYO	INY-5759	S31/E24	0-10	DBTG	3.00	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
259-10-30c	INYO	INY-5760	S26/W10	40-60	DBTG	3.00	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
259-10-85d	INYO	INY-5760	S18.5/W13	0-20	DBTG	3.00	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
259-10-156a	INYO	INY-5760	S13.5/W22	30-40	DBTG	3.00	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
259-10-156c	INYO	INY-5760	S13.5/W22	30-40	DBTG	3.00	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
259-10-156d	INYO	INY-5760	S13.5/W22	30-40	DBTG	3.00	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
253-10-381a	INYO	INY-5761	S7.5/W2	40-50	DBTG	3.00	6.30	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-381c	INYO	INY-5761	S7.5/W2	40-50	DBTG	3.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-438d	INYO	INY-5761	S7.5/W2	85-90	DBTG	3.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-438e	INYO	INY-5761	S7.5/W2	85-90	DBTG	3.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
253-10-624a	INYO	INY-5761	S8/W2	70-80	DBTG	3.00	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-859b	INYO	INY-5763	N29/E71	10-20	DBTG	3.00	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-890a	INYO	INY-5763	N53.5/E15	40-50	DBTG	3.00	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-894a	INYO	INY-5763	N53.5/E15	50-60	DBTG	3.00	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5024	TULARE	TUL-1198			DBTG	3.00	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5038	TULARE	TUL-1198			DBTG	3.00	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
EU1	TULARE	TUL-1227		70-80	DBTG	3.00	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5066	TULARE	TUL-1231			DBTG	3.00	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7232E	TULARE	TUL-0024		10-20	DBTG	3.00	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7233E	TULARE	TUL-0024		20-30	DBTG	3.00	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7236D	TULARE	TUL-0024		50-60	DBTG	3.00	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-603CB	INYO	INY-1700	UNIT C	20-30	DBTG	3.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-603CB	INYO	INY-1700	UNIT C	20-30	DBTG	3.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1022CB	INYO	INY-1756	STRUCTURE 12		DBTG	3.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.2	INYO	INY-1756		SURFACE	DBTG	3.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1022CB	INYO	INY-1756	STRUCTURE 12		DBTG	3.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.2	INYO	INY-1756		SURFACE	DBTG	3.00	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1186CA	INYO	PINYON HOUSE	QUADRANT NE1		DBTG	3.00	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-248-1-361	INYO	INY-5267	S158/E122	G	PRJPT	3.03		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-240-10-476	INYO	INY-5281	N0/W90	40-60 cm	PRJPT	3.04		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5348	FRESNO	FRE-2168			BIF	3.10	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
398	INYO	INY-3802/H	CU; N9/W20	20-30	DBTG	3.10	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
EU4	TULARE	TUL-1227		60-70	DBTG	3.10	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5064	TULARE	TUL-1231			DBTG	3.10	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5065	TULARE	TUL-1231			DBTG	3.10	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5070	TULARE	TUL-1231			DBTG	3.10	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5106	TULARE	TUL-1240			BIF	3.10	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5106	TULARE	TUL-1240			BIF	3.10	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5106	TULARE	TUL-1240			BIF	3.10	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5106	TULARE	TUL-1240			BIF	3.10	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5205	TULARE	TUL-1258			BIF	3.10	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
0-573CA	INYO	INY-1700	UNIT C	0-10	DBTG	3.10	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-573CA	INYO	INY-1700	UNIT C	0-10	DBTG	3.10	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-914CB	INYO	INY-1756	STRUCTURE 8		DBTG	3.10	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-914CB	INYO	INY-1756	STRUCTURE 8		DBTG	3.10	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-240-10-655	INYO	INY-5281	N0/W63	40-50 cm	PRJPT	3.13		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-1-258	INYO	INY-5281	S4.8/W91.9	-	PRJPT	3.19		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-11	FRESNO	88A-4			DBTG	3.20	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
576	INYO	INY-4661/H	SSC; N6.3/W4	0-10	DBTG	3.20	0.00	FS	XRF	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
251	INYO	INY-5273/H	3C		PRJPT	3.20	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
249-10-133e	INYO	INY-5397	N5/W2.5	0-10	DBTG	3.20	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-280d	INYO	INY-5397	N89/E145	0-20	DBTG	3.20	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
259-10-30a	INYO	INY-5760	S26/W10	40-60	DBTG	3.20	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
259-10-85a	INYO	INY-5760	S18.5/W13	0-20	DBTG	3.20	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
253-10-624e	INYO	INY-5761	S8/W2	70-80	DBTG	3.20	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5040	TULARE	TUL-1198			DBTG	3.20	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		100-110	BIF	3.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU3	TULARE	TUL-1227		50-60	DBTG	3.20	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5068	TULARE	TUL-1231			DBTG	3.20	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5081	TULARE	TUL-1235			DBTG	3.20	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5110	TULARE	TUL-1240			DBTG	3.20	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5110	TULARE	TUL-1240			DBTG	3.20	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5110	TULARE	TUL-1240			DBTG	3.20	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5110	TULARE	TUL-1240			DBTG	3.20	0.00	FS	XRF	385250	4037000		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7248G	TULARE	TUL-0024		170-180	DBTG	3.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-19BA	INYO	INY-1756	STRUCTURE 2		DBTG	3.20	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-874CC	INYO	INY-1756	STRUCTURE 6		DBTG	3.20	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-19BA	INYO	INY-1756	STRUCTURE 2		DBTG	3.20	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-874CC	INYO	INY-1756	STRUCTURE 6		DBTG	3.20	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
5354-04	FRESNO	FRE-2168			DBTG	3.30	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
9-1829	INYO	INY-1386	X17	.5-1'	PRJPT	3.30	0.00	FS	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
388	INYO	INY-3802/H	CU; N15/W6	0-10	DBTG	3.30	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
394	INYO	INY-3802/H	CU; N15/W6	40-50	DBTG	3.30	0.00	FS	XRF	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
227-1-264h	INYO	INY-5275 Locus D1			DBTG	3.30	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-264j	INYO	INY-5275 Locus D1			DBTG	3.30	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
251-1-16	INYO	INY-5758	S15/W15	C	DBTG	3.30	0.00	FS	VIS	394598	4070763	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
255-10-770d	INYO	INY-5763	S80/W30	0-10	DBTG	3.30	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5010	TULARE	TUL-1198			DBTG	3.30	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5039	TULARE	TUL-1198			DBTG	3.30	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
EU1	TULARE	TUL-1227		90-100	DBTG	3.30	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5080	TULARE	TUL-1235			DBTG	3.30	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5186	TULARE	TUL-1256			DBTG	3.30	0.00	FS	XRF	353050	4067090		11	pre-Quat	pre-Quat	SIRRETTA-CHAIX VARIANT-ROCK OUTCROP (CA716)
0-662CA	INYO	INY-1700	UNIT C	30-40	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-662CB	INYO	INY-1700	UNIT C	30-40	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-676CA	INYO	INY-1700	UNIT C	40-50	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-718CA	INYO	INY-1700	UNIT D	40-50	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-662CA	INYO	INY-1700	UNIT C	30-40	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-662CB	INYO	INY-1700	UNIT C	30-40	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-676CA	INYO	INY-1700	UNIT C	40-50	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-718CA	INYO	INY-1700	UNIT D	40-50	DBTG	3.30	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1067CB	INYO	INY-1756	STRUCTURE 3		DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-914CC	INYO	INY-1756	STRUCTURE 8		DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.1	INYO	INY-1756		SURFACE	DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1067CB	INYO	INY-1756	STRUCTURE 3		DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-914CC	INYO	INY-1756	STRUCTURE 8		DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.1	INYO	INY-1756		SURFACE	DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1205CA	INYO	PINYON HOUSE	QUADRANT NE2		DBTG	3.30	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-248-1-76	INYO	INY-5267	N15/W30	H	PRJPT	3.30		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-240-10-476	INYO	INY-5281	N0/W90	40-60 cm	PRJPT	3.36		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-01	FRESNO	88A-4			DBTG	3.40	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00138	FRESNO	FRE-1363		50	BIF	3.40	0.00	FS	XRF	309350	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
1244	INYO	INY-3782/H	CU; S9/W70	0-10	DBTG	3.40	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
547	INYO	INY-4661/H	SCU; N0/E0		DBTG	3.40	0.00	FS	XRF	396900	4066600		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
249-10-232a	INYO	INY-5397	N69.5/E89	0-20	DBTG	3.40	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-280c	INYO	INY-5397	N89/E145	0-20	DBTG	3.40	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
250-1-93b	INYO	INY-5757	S15/W15	C	DBTG	3.40	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
250-1-93c	INYO	INY-5757	S15/W15	C	DBTG	3.40	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
259-10-85c	INYO	INY-5760	S18.5/W13	0-20	DBTG	3.40	0.00	FS	VIS	393102	4073283	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
5016	TULARE	TUL-1198			DBTG	3.40	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5029	TULARE	TUL-1198			DBTG	3.40	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5031	TULARE	TUL-1198			DBTG	3.40	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5067	TULARE	TUL-1231			DBTG	3.40	0.00	FS	XRF	353900	4054450		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5257	TULARE	TUL-1252			DBTG	3.40	0.00	FS	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5183	TULARE	TUL-1256			DBTG	3.40	0.00	FS	XRF	353050	4067090		11	pre-Quat	pre-Quat	SIRRETTA-CHAIX VARIANT-ROCK OUTCROP (CA716)
5312-05	TULARE	TUL-1265			DBTG	3.40	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7230B	TULARE	TUL-0024		0-10	DBTG	3.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7237B	TULARE	TUL-0024		60-70	DBTG	3.40	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7238E	TULARE	TUL-0024		70-80	DBTG	3.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-629CB	INYO	INY-1700	UNIT C	10-20	DBTG	3.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-629CB	INYO	INY-1700	UNIT C	10-20	DBTG	3.40	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
OV-244.8	INYO	INY-1756		SURFACE	DBTG	3.40	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1067CA	INYO	INY-1756	STRUCTURE 3		DBTG	3.40	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.8	INYO	INY-1756		SURFACE	DBTG	3.40	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1067CA	INYO	INY-1756	STRUCTURE 3		DBTG	3.40	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-231-041-001	INYO	INY-5278	-	-	PRJPT	3.40		FS		389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
88-4-08	FRESNO	88A-4			DBTG	3.50	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-4-09	FRESNO	88A-4			DBTG	3.50	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-264e	INYO	INY-5275 Locus D1			DBTG	3.50	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-207c	INYO	INY-5278			DBTG	3.50	0.00	FS	VIS	389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
5022	TULARE	TUL-1198			DBTG	3.50	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5028	TULARE	TUL-1198			DBTG	3.50	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		100-110	DBTG	3.50	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		50-60	DBTG	3.50	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		60-70	DBTG	3.50	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU3	TULARE	TUL-1227		80-90	DBTG	3.50	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5084	TULARE	TUL-1235			DBTG	3.50	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5311-14	TULARE	TUL-1264			DBTG	3.50	0.00	FS	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7230D	TULARE	TUL-0024		0-10	DBTG	3.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7235A	TULARE	TUL-0024		40-50	DBTG	3.50	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7235B	TULARE	TUL-0024		40-50	DBTG	3.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7238A	TULARE	TUL-0024		70-80	DBTG	3.50	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7578A	TULARE	TUL-0028		30-40	DBTG	3.50	0.00	FS	VIS	338780	4042480		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
10551B	TULARE	TUL-0072		80-90	DBTG	3.50	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-629CA	INYO	INY-1700	UNIT C	10-20	DBTG	3.50	3.10	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-629CA	INYO	INY-1700	UNIT C	10-20	DBTG	3.50	3.10	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-874CB	INYO	INY-1756	STRUCTURE 6		DBTG	3.50	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-914CA	INYO	INY-1756	STRUCTURE 8		DBTG	3.50	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-874CB	INYO	INY-1756	STRUCTURE 6		DBTG	3.50	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-914CA	INYO	INY-1756	STRUCTURE 8		DBTG	3.50	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1205CB	INYO	PINYON HOUSE	QUADRANT NE2		DBTG	3.50	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-240-1-262	INYO	INY-5281	N0/E30	C	PRJPT	3.50		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-17	FRESNO	88A-4			DBTG	3.60	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-05	FRESNO	88A-5			DBTG	3.60	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5356	FRESNO	FRE-2169			PRJPT	3.60	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5368	FRESNO	FRE-2169			BIF	3.60	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1255	INYO	INY-3782/H	CU; S9/W70	30-40	DBTG	3.60	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-220g	INYO	INY-5271			DBTG	3.60	0.00	FS	VIS	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
253-10-232b	INYO	INY-5761	S10/W70	40-60	DBTG	3.60	0.00	FS	VIS	392742	4074038	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5023	TULARE	TUL-1198			DBTG	3.60	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5036	TULARE	TUL-1198			DBTG	3.60	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU4	TULARE	TUL-1227		50-60	DBTG	3.60	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU4	TULARE	TUL-1227		70-80	DBTG	3.60	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		60-70	DBTG	3.60	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		120-130	DBTG	3.60	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		50-60	DBTG	3.60	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		60-70	DBTG	3.60	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5083	TULARE	TUL-1235			DBTG	3.60	0.00	FS	XRF	344100	4057080		11	pre-Quat	pre-Quat	TOEM-CAGWIN-ROCK OUTCROP (CA715)
5310-01	TULARE	TUL-1263			DBTG	3.60	0.00	FS	XRF	377680	4057900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5310-05	TULARE	TUL-1263			BIF	3.60	0.00	FS	XRF	377680	4057900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7235C	TULARE	TUL-0024		40-50	DBTG	3.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-2626CA	INYO	INY-1700	N1/E10	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2626CB	INYO	INY-1700	N1/E10	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2932CB	INYO	INY-1700	S1/E10	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-3199CA	INYO	INY-1700	S3/E8	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2626CA	INYO	INY-1700	N1/E10	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2626CB	INYO	INY-1700	N1/E10	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2932CB	INYO	INY-1700	S1/E10	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-3199CA	INYO	INY-1700	S3/E8	30-40	DBTG	3.60	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-19BB	INYO	INY-1756	STRUCTURE 2		DBTG	3.60	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1121CA	INYO	INY-1756	STRUCTURE 8		DBTG	3.60	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-19BB	INYO	INY-1756	STRUCTURE 2		DBTG	3.60	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
0-1121CA	INYO	INY-1756	STRUCTURE 8		DBTG	3.60	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-231-045-001	INYO	INY-5278	-	-	PRJPT	3.60		FS		389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
81-244-1-9	INYO	INY-5276	S202.2/W36	-	PRJPT	3.61		FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
227-1-243f	INYO	INY-5267			DBTG	3.70	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
264	INYO	INY-5275	3C	B	DBTG	3.70	0.00	FS	XRF	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-210e	INYO	INY-5281			DBTG	3.70	0.00	FS	VIS	390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
249-10-232b	INYO	INY-5397	N69.5/E89	0-20	DBTG	3.70	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
249-10-280a	INYO	INY-5397	N89/E145	0-20	DBTG	3.70	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
252-10-330d	INYO	INY-5759	S48.5/W82	0-10	DBTG	3.70	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
5021	TULARE	TUL-1198			DBTG	3.70	0.00	FS	XRF	337850	4056250		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		70-80	DBTG	3.70	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		20-30	DBTG	3.70	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		50-60	DBTG	3.70	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5196	TULARE	TUL-1257			DBTG	3.70	0.00	FS	XRF	351740	4065500		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
5310-04	TULARE	TUL-1263			BIF	3.70	0.00	FS	XRF	377680	4057900		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5312-07	TULARE	TUL-1265			DBTG	3.70	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7236E	TULARE	TUL-0024		50-60	DBTG	3.70	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7251A	TULARE	TUL-0024		200-210	DBTG	3.70	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-2932CC	INYO	INY-1700	S1/E10	30-40	DBTG	3.70	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2932CC	INYO	INY-1700	S1/E10	30-40	DBTG	3.70	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
OV-244.0	INYO	INY-1756		SURFACE	DBTG	3.70	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.0	INYO	INY-1756		SURFACE	DBTG	3.70	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
81-240-1-258	INYO	INY-5281	S4.8/W91.9	-	PRJPT	3.75		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
W-2-2893	KER	KER-0116	surface		biface	3.80		Fish Springs		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
00494	FRESNO	FRE-1964		50	BIF	3.80	0.00	FS	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00494	FRESNO	FRE-1964		50	BIF	3.80	0.00	FS	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
5348	FRESNO	FRE-2168			BIF	3.80	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5354-10	FRESNO	FRE-2168			DBTG	3.80	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-03	FRESNO	FRE-2169			DBTG	3.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-06	FRESNO	FRE-2169			DBTG	3.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-08	FRESNO	FRE-2169			DBTG	3.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-09	FRESNO	FRE-2169			DBTG	3.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5360	FRESNO	FRE-2169			BIF	3.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5364	FRESNO	FRE-2169			PRJPT	3.80	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
9-1313	INYO	INY-1386	M15	0-.5'	PRJPT	3.80	0.00	FS	XRF	366920	4139075	83		Older Pleist.	Older Pleist	Millpond-Lucerne complex, 2 to 9 percent slopes
227-1-197d	INYO	INY-5272			DBTG	3.80	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
264	INYO	INY-5275	3C	A	DBTG	3.80	0.00	FS	XRF	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-207b	INYO	INY-5278			DBTG	3.80	0.00	FS	VIS	389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
227-1-210f	INYO	INY-5281			DBTG	3.80	0.00	FS	VIS	390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
255-10-886a	INYO	INY-5763	N53.5/E15	30-40	DBTG	3.80	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
EU1	TULARE	TUL-1227		50-60	FLKTL	3.80	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
5312-02	TULARE	TUL-1265			DBTG	3.80	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7243E	TULARE	TUL-0024		120-130	DBTG	3.80	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
1349-24-808	TULARE	TUL-0024		30"	BIF	3.80	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
OV-244.5	INYO	INY-1756		SURFACE	DBTG	3.80	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.7	INYO	INY-1756		SURFACE	DBTG	3.80	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.5	INYO	INY-1756		SURFACE	DBTG	3.80	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
OV-244.7	INYO	INY-1756		SURFACE	DBTG	3.80	0.00	FS	XRF					pre-Quat	pre-Quat	Badland
W-2-2356	KER	KER-0116	EU 14, 30-40		core	3.90		Fish Springs		285579	3895651	83		Holocene	latest-Holo	Kimberlina fine sandy loam, 2 to 5 percent slopes
88-5-10	FRESNO	88A-5			DBTG	3.90	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5354-03	FRESNO	FRE-2168			DBTG	3.90	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
405	INYO	INY-3802/H	SSC; N44/E74	0-10	DBTG	3.90	0.00	FS	VIS	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
50	INYO	INY-4663	SCU; N5/W25		DBTG	3.90	0.00	FS	XRF	398880	4063260		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
269	INYO	INY-5212	CU; N21/E4	30-40	DBTG	3.90	0.00	FS	XRF	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-264f	INYO	INY-5275 Locus D1			DBTG	3.90	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-265g	INYO	INY-5275 Locus D2			DBTG	3.90	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-205a	INYO	INY-5276			DBTG	3.90	0.00	FS	VIS	389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
251-1-10	INYO	INY-5758	N6.6/W2.5	SURF	DBTG	3.90	0.00	FS	VIS	394598	4070763	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
251-1-13	INYO	INY-5758	S15/W15	B	DBTG	3.90	0.00	FS	VIS	394598	4070763	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
252-10-330a	INYO	INY-5759	S48.5/W82	0-10	DBTG	3.90	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
EU1	TULARE	TUL-1227		60-70	DBTG	3.90	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
81-230-057-001	INYO	INY-5277	-	-	PRJPT	3.90		FS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-13	FRESNO	88A-4			DBTG	4.00	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-05	FRESNO	FRE-2169			DBTG	4.00	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5357	FRESNO	FRE-2169			BIF	4.00	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5359	FRESNO	FRE-2169			PRJPT	4.00	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
395	INYO	INY-3802/H	CU; N15/W6	50-60	DBTG	4.00	0.00	FS	VIS	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
250-1-79b	INYO	INY-5757	S15/W15	D	DBTG	4.00	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
EU3	TULARE	TUL-1227		100-110	DBTG	4.00	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7240C	TULARE	TUL-0024		90-100	DBTG	4.00	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10555A	TULARE	TUL-0072		120-130	DBTG	4.00	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-2626CC	INYO	INY-1700	N1/E10	30-40	DBTG	4.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2626CC	INYO	INY-1700	N1/E10	30-40	DBTG	4.00	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
5355-01	FRESNO	FRE-2169			DBTG	4.10	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-07	FRESNO	FRE-2169			DBTG	4.10	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-10	FRESNO	FRE-2169			DBTG	4.10	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-264g	INYO	INY-5275 Locus D1			DBTG	4.10	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-205c	INYO	INY-5276			DBTG	4.10	0.00	FS	VIS	389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
0-1905CC	INYO	INY-1700	STRUCTURE 3		DBTG	4.10	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1905CC	INYO	INY-1700	STRUCTURE 3		DBTG	4.10	0.00	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
81-230-050-001	INYO	INY-5277	-	-	PRJPT	4.10		FS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-06	FRESNO	88A-4			DBTG	4.20	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00374	FRESNO	FRE-1044		10	PRJPT	4.20	0.00	FS	XRF	309400	4102000		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
227-1-205b	INYO	INY-5276			DBTG	4.20	0.00	FS	VIS	389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
227-1-210c	INYO	INY-5281			DBTG	4.20	0.00	FS	VIS	390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
252-10-330c	INYO	INY-5759	S48.5/W82	0-10	DBTG	4.20	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
EU4	TULARE	TUL-1227		70-80	DBTG	4.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
EU5	TULARE	TUL-1227		60-70	DBTG	4.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		70-80	DBTG	4.20	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU5	TULARE	TUL-1227		80-90	DBTG	4.20	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
EU1	TULARE	TUL-1227		60-70	DBTG	4.20	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7238B	TULARE	TUL-0024		70-80	DBTG	4.20	5.10	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
88-4-16	FRESNO	88A-4			DBTG	4.30	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
00484	FRESNO	FRE-1964		20	BIF	4.30	0.00	FS	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
00484	FRESNO	FRE-1964		20	BIF	4.30	0.00	FS	XRF	307800	4102200		11	pre-Quat	pre-Quat	SHAVER FAMILY, 5 TO 35 PERCENT SLOPES
227-1-236f	INYO	INY-3794		SUR	DBTG	4.30	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
227-1-205d	INYO	INY-5276			DBTG	4.30	0.00	FS	VIS	389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
5317	TULARE	TUL-1265			BIF	4.30	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7235E	TULARE	TUL-0024		40-50	DBTG	4.30	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7248A	TULARE	TUL-0024		170-180	DBTG	4.30	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
88-5-07	FRESNO	88A-5			DBTG	4.40	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5369	FRESNO	FRE-2169			BIF	4.40	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-212j	INYO	INY-5282			DBTG	4.40	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
250-1-79a	INYO	INY-5757	S15/W15	D	DBTG	4.40	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
256-10-405d	INYO	INY-5764	S2/W2	40-50	DBTG	4.40	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
EU1	TULARE	TUL-1227		70-80	DBTG	4.40	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7243B	TULARE	TUL-0024		120-130	DBTG	4.40	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10549A	TULARE	TUL-0072		60-70	DBTG	4.40	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
81-240-1-214	INYO	INY-5281	N38.9/W12.5	-	PRJPT	4.43		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-4-05	FRESNO	88A-4			DBTG	4.50	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5367	FRESNO	FRE-2169			PRJPT	4.50	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
405	INYO	INY-3802/H	SSC; N44/E74	0-10	DBTG	4.50	9.20	FS	VIS	397960	4065000		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
243	INYO	INY-5212	CU; N23/E6	40-50	DBTG	4.50	0.00	FS	XRF	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-259a	INYO	INY-5273/H Locus			DBTG	4.50	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-265d	INYO	INY-5275 Locus D2			DBTG	4.50	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-206g	INYO	INY-5277			DBTG	4.50	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-209f	INYO	INY-5280			DBTG	4.50	0.00	FS	VIS	389780	4091780		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
227-1-212h	INYO	INY-5282			DBTG	4.50	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5255-04	TULARE	TUL-1252			BIF	4.50	0.00	FS	XRF	351750	4023650		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5232-03	TULARE	TUL-1258			DBTG	4.50	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
7239C	TULARE	TUL-0024		80-90	DBTG	4.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10545A	TULARE	TUL-0072		20-30	DBTG	4.50	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
88-5-15	FRESNO	88A-5			DBTG	4.60	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5354-01	FRESNO	FRE-2168			DBTG	4.60	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5355-03	FRESNO	FRE-2169			DBTG	4.60	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-212i	INYO	INY-5282			DBTG	4.60	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
7241D	TULARE	TUL-0024		100-110	DBTG	4.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-321	MONO	A81	SUR	SUR	BIF	4.70	0.00	FS	XRF	335594	4174827	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes.
00469	FRESNO	FRE-1360		50	PRJPT	4.70	0.00	FS	XRF	308100	4102600		11	pre-Quat	pre-Quat	SIRRETTA FAMILY-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES
264	INYO	INY-5275	3C	D	DBTG	4.70	0.00	FS	XRF	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-212c	INYO	INY-5282			DBTG	4.70	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
256-10-387b	INYO	INY-5764	S2/W2	0-10	DBTG	4.70	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
256-10-450b	INYO	INY-5764	S18/W97.5	20-30	DBTG	4.70	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
5311-15	TULARE	TUL-1264			DBTG	4.70	0.00	FS	XRF	377720	4057635		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-12	FRESNO	88A-5			DBTG	4.80	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-259h	INYO	INY-5273/H Locus			DBTG	4.80	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-259e	INYO	INY-5273/H Locus			DBTG	4.80	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-265i	INYO	INY-5275 Locus D2			DBTG	4.80	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-209e	INYO	INY-5280			DBTG	4.80	0.00	FS	VIS	389780	4091780		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
227-1-209d	INYO	INY-5280			DBTG	4.80	0.00	FS	VIS	389780	4091780		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
227-1-210d	INYO	INY-5281			DBTG	4.80	0.00	FS	VIS	390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
250-10-133a	INYO	INY-5757	S15/W15	0-10	DBTG	4.80	0.00	FS	VIS	393561	4072605	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
252-10-330e	INYO	INY-5759	S48.5/W82	0-10	DBTG	4.80	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
254-1-15b	INYO	INY-5762	N6.6/W42	SURF	DBTG	4.80	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
256-10-450a	INYO	INY-5764	S18/W97.5	20-30	DBTG	4.80	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
7248C	TULARE	TUL-0024		170-180	DBTG	4.80	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10544A	TULARE	TUL-0072		10-20	DBTG	4.80	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
88-5-06	FRESNO	88A-5			DBTG	4.90	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-13	FRESNO	88A-5			DBTG	4.90	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-206d	INYO	INY-5277			DBTG	4.90	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
227-1-206e	INYO	INY-5277			DBTG	4.90	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-209c	INYO	INY-5280			DBTG	4.90	0.00	FS	VIS	389780	4091780		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
227-1-212d	INYO	INY-5282			BIF	4.90	0.00	FS	VIS	390050	4093000		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
252-10-330b	INYO	INY-5759	S48.5/W82	0-10	DBTG	4.90	0.00	FS	VIS	391523	4075862	83		Older Pleist.	Older Pleist	Tinemaha gravelly loamy coarse sand, moist, 5 to 15 percent slopes
256-10-405a	INYO	INY-5764	S2/W2	40-50	DBTG	4.90	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
7234E	TULARE	TUL-0024		30-40	DBTG	4.90	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7241B	TULARE	TUL-0024		100-110	DBTG	4.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7242B	TULARE	TUL-0024		110-120	DBTG	4.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
88-5-16	FRESNO	88A-5			DBTG	5.00	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
595	INYO	INY-3782/H	CU; S66/W212	30-40	DBTG	5.00	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-236e	INYO	INY-3794		SUR	DBTG	5.00	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
227-1-265f	INYO	INY-5275 Locus D2			DBTG	5.00	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-209b	INYO	INY-5280			DBTG	5.00	0.00	FS	VIS	389780	4091780		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
254-1-28	INYO	INY-5762	N23.1/W3	SURF	DBTG	5.00	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
256-10-405c	INYO	INY-5764	S2/W2	40-50	DBTG	5.00	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
EU1	TULARE	TUL-1227		70-80	DBTG	5.00	0.00	FS	XRF	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7237E	TULARE	TUL-0024		60-70	DBTG	5.00	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7242C	TULARE	TUL-0024		110-120	DBTG	5.00	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-244-1-542	INYO	INY-5276	S75/W150	A	PRJPT	5.01		FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
595	INYO	INY-3782/H	CU; S66/W212	30-40	DBTG	5.10	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-236b	INYO	INY-3794		SUR	DBTG	5.10	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
54	INYO	INY-4663	SCU; N0/W20		DBTG	5.10	0.00	FS	VIS	398880	4063260		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
249-10-239a	INYO	INY-5397	N79.5/E89	20-40	DBTG	5.10	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
5316	TULARE	TUL-1265			PRJPT	5.10	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7230A	TULARE	TUL-0024		0-10	DBTG	5.10	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7239D	TULARE	TUL-0024		80-90	DBTG	5.10	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10544B	TULARE	TUL-0072		10-20	DBTG	5.10	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
10546B	TULARE	TUL-0072		30-40	DBTG	5.10	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
0-192AA	INYO	PINYON HOUSE	STRUCTURE 14		DBTG	5.10	2.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
88-5-09	FRESNO	88A-5			DBTG	5.20	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-11	FRESNO	88A-5			DBTG	5.20	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-236a	INYO	INY-3794		SUR	DBTG	5.20	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
162	INYO	INY-5248/H	3A		PRJPT	5.20	0.00	FS	XRF	363560	4128850		11	LtP	latest-Pleist	Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes.
227-1-259c	INYO	INY-5273/H Locus			DBTG	5.20	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-259g	INYO	INY-5273/H Locus			DBTG	5.20	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-259b	INYO	INY-5273/H Locus			DBTG	5.20	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-259d	INYO	INY-5273/H Locus			DBTG	5.20	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-206h	INYO	INY-5277			DBTG	5.20	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-206j	INYO	INY-5277			DBTG	5.20	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
255-10-834a	INYO	INY-5763	S80/W30	0-10	DBTG	5.20	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
5317	TULARE	TUL-1265			BIF	5.20	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7240E	TULARE	TUL-0024		90-100	DBTG	5.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7242D	TULARE	TUL-0024		110-120	DBTG	5.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7245C	TULARE	TUL-0024		140-150	DBTG	5.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7246D	TULARE	TUL-0024		150-160	DBTG	5.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-659	MONO	F160	SUR	SUR	BIF	5.20	0.00	FS	XRF	338458	4180751	83		Holocene	late-Holo	Watterson gravelly sandy loam, 4 to 15 percent slopes
81-240-1-42	INYO	INY-5281	S10.8/W20	-	PRJPT	5.25		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-5-03	FRESNO	88A-5			DBTG	5.30	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-04	FRESNO	88A-5			DBTG	5.30	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
88-5-14	FRESNO	88A-5			DBTG	5.30	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-261	INYO	INY-5275			PRJPT	5.30	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-206i	INYO	INY-5277			DBTG	5.30	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-206c	INYO	INY-5277			DBTG	5.30	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
10546C	TULARE	TUL-0072		30-40	DBTG	5.30	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
81-240-10-599	INYO	INY-5281	N2/E35	20-30	DRILL	5.37		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-5-02	FRESNO	88A-5			DBTG	5.40	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
92-1-FW-317	FRESNO	FRE-0061	N83;W7	40-45	BIF	5.40	0.00	FS	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
227-1-236d	INYO	INY-3794		SUR	DBTG	5.40	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
243	INYO	INY-5212	CU; N23/E6	40-50	DBTG	5.40	0.00	FS	XRF	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
271	INYO	INY-5246	3A	F	DBTG	5.40	0.00	FS	XRF	364140	4129150	83		LtP	latest-Pleist	Nanamkin family-Rock outcrop complex, 15 to 60 percent slopes.
254-1-13	INYO	INY-5762	S11.4/W39	SURF	DBTG	5.40	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
254-1-43	INYO	INY-5762	N10.1/E38	SURF	DBTG	5.40	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
256-10-405b	INYO	INY-5764	S2/W2	40-50	DBTG	5.40	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
EU3	TULARE	TUL-1227		10-20	DBTG	5.40	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
7229A	TULARE	TUL-0024		10-20	DBTG	5.40	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7229D	TULARE	TUL-0024		10-20	DBTG	5.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7242E	TULARE	TUL-0024		110-120	DBTG	5.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7246C	TULARE	TUL-0024		150-160	DBTG	5.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7247B	TULARE	TUL-0024		170-180	DBTG	5.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7249B	TULARE	TUL-0024		180-190	DBTG	5.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7252A	TULARE	TUL-0024		210-220	DBTG	5.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-230-028-001	INYO	INY-5277	-	-	PRJPT	5.40		FS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
215	INYO	INY-3782/H	CU; N5/E10.25	20-30	DBTG	5.50	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-236c	INYO	INY-3794		SUR	DBTG	5.50	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
227-1-249b	INYO	INY-5268			DBTG	5.50	0.00	FS	VIS	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
251-1-11	INYO	INY-5758	S3.6/E4.7	SURF	DBTG	5.50	0.00	FS	VIS	394598	4070763	83		Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
7229E	TULARE	TUL-0024		10-20	DBTG	5.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7234D	TULARE	TUL-0024		30-40	DBTG	5.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
349-675	MONO	F162	SUR	SUR	BIF	5.50	0.00	FS	XRF	339501	4180278	83		Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly coarse sand, 2 to 8 percent slopes
81-230-043-001	INYO	INY-5277	-	-	PRJPT	5.50		FS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5362	FRESNO	FRE-2169			BIF	5.60	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
227-1-236h	INYO	INY-3794		SUR	DBTG	5.60	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
227-1-259f	INYO	INY-5273/H Locus			DBTG	5.60	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-206f	INYO	INY-5277			DBTG	5.60	0.00	FS	VIS	389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
7229B	TULARE	TUL-0024		10-20	DBTG	5.60	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7231A	TULARE	TUL-0024		0-10	DBTG	5.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7231D	TULARE	TUL-0024		0-10	DBTG	5.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7233D	TULARE	TUL-0024		20-30	DBTG	5.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7237C	TULARE	TUL-0024		60-70	DBTG	5.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7245B	TULARE	TUL-0024		140-150	DBTG	5.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7248B	TULARE	TUL-0024		170-180	DBTG	5.60	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7248D	TULARE	TUL-0024		170-180	DBTG	5.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
10547B	TULARE	TUL-0072		40-50	DBTG	5.60	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
189	INYO	INY-3782/H	STU; N5/E10	40-50	DBTG	5.70	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
603	INYO	INY-3782/H	CU; S67/W212	30-40	DBTG	5.70	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
243	INYO	INY-5212	CU; N23/E6	40-50	DBTG	5.70	0.00	FS	VIS	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-243j	INYO	INY-5267			DBTG	5.70	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-257e	INYO	INY-5273/H Locus			DBTG	5.70	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-259i	INYO	INY-5273/H Locus			DBTG	5.70	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
264	INYO	INY-5275	3C	F	DBTG	5.70	0.00	FS	XRF	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
255-10-770a	INYO	INY-5763	S80/W30	0-10	DBTG	5.70	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
7233C	TULARE	TUL-0024		20-30	DBTG	5.70	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-230-048-001	INYO	INY-5277	-	-	PRJPT	5.70		FS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-248-1-5	INYO	INY-5267	S10.5/E127	-	PRJPT	5.78		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-240-10-660	INYO	INY-5281	N0/W63	50-60 cm	PRJPT	5.79		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
349-257	MONO	A55	SUR	SUR	PRJPT	5.80	0.00	FS	XRF	335279	4174189	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
599	INYO	INY-3782/H	CU; S67/W212	0-10	DBTG	5.80	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
20-1	INYO	INY-3782/H	SURFACE		BIF	5.80	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
243	INYO	INY-5212	CU; N23/E6	40-50	DBTG	5.80	0.00	FS	XRF	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-207a	INYO	INY-5278			DBTG	5.80	0.00	FS	VIS	389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
249-10-236b	INYO	INY-5397	N79.5/E89	0-20	DBTG	5.80	0.00	FS	VIS	393311	4073226			Holocene	latest-Holo	Inyo gravelly loamy coarse sand, 0 to 5 percent slopes
222	INYO	INY-3782/H	CU; N5/E10.25	50-60	DBTG	5.90	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227	INYO	INY-3782/H	CU; N5/E10.25	70-80	FLKTL	5.90	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
597	INYO	INY-3782/H	CU; S66/W212	40-50	DBTG	5.90	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-236j	INYO	INY-3794		SUR	DBTG	5.90	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
227-1-259j	INYO	INY-5273/H Locus			DBTG	5.90	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-265c	INYO	INY-5275 Locus D2			DBTG	5.90	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
254-1-47	INYO	INY-5762	N6.3/E49.8	SURF	DBTG	5.90	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
255-10-859a	INYO	INY-5763	N29/E71	10-20	DBTG	5.90	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
7230C	TULARE	TUL-0024		0-10	DBTG	5.90	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7232A	TULARE	TUL-0024		10-20	DBTG	5.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7237A	TULARE	TUL-0024		60-70	DBTG	5.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7243D	TULARE	TUL-0024		120-130	DBTG	5.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7244C	TULARE	TUL-0024		130-140	DBTG	5.90	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7248F	TULARE	TUL-0024		170-180	DBTG	5.90	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
8293A	TULARE	TUL-0028		30-40	DBTG	5.90	0.00	FS	VIS	338780	4042480		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
10545B	TULARE	TUL-0072		20-30	DBTG	5.90	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
81-230-056-001	INYO	INY-5277	-	-	PRJPT	5.90		FS		389490	4086680		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-244-1-6	INYO	INY-5276	S133.2/W60.1	-	PRJPT	5.92		FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-240-10-553	INYO	INY-5281	S30/W30	20-40	PRJPT	5.99		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
95	INYO	INY-4663	SSC; N9/W36	0-10	DBTG	6.00	0.00	FS	VIS	398880	4063260		11	Holocene	Early-Holo	Winnedumah fine sandy loam, 0 to 2 percent slopes
242	INYO	INY-5267	3C		PRJPT	6.00	0.00	FS	XRF	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
5319	TULARE	TUL-1265			BIF	6.00	0.00	FS	XRF	377700	4057600		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
10543C	TULARE	TUL-0072		0-10	DBTG	6.00	0.00	FS	XRF	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
10546A	TULARE	TUL-0072		30-40	DBTG	6.00	0.00	FS	VIS	339125	4042235		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
588	INYO	INY-3782/H	CU; S66/W212	0-10	DBTG	6.10	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
603	INYO	INY-3782/H	CU; S67/W212	30-40	DBTG	6.10	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
20-4	INYO	INY-3782/H	SURFACE		BIF	6.10	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-238i	INYO	INY-5269			DBTG	6.10	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-265b	INYO	INY-5275 Locus D2			DBTG	6.10	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-265e	INYO	INY-5275 Locus D2			DBTG	6.10	0.00	FS	VIS	390300	4095080	27		Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
255-10-834c	INYO	INY-5763	S35/W195	0-10	DBTG	6.10	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
255-10-834e	INYO	INY-5763	S35/W195	0-10	DBTG	6.10	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
7234C	TULARE	TUL-0024		30-40	DBTG	6.10	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7244D	TULARE	TUL-0024		130-140	DBTG	6.10	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7247A	TULARE	TUL-0024		170-180	DBTG	6.10	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
588	INYO	INY-3782/H	CU; S66/W212	0-10	DBTG	6.20	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
7233A	TULARE	TUL-0024		20-30	DBTG	6.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7243C	TULARE	TUL-0024		120-130	DBTG	6.20	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7246A	TULARE	TUL-0024		150-160	DBTG	6.20	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7246B	TULARE	TUL-0024		150-160	DBTG	6.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-240-10-542	INYO	INY-5281	N60/W58.5	40-60 cm	PRJPT	6.27		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
349-251	MONO	A53	SUR	SUR	PRJPT	6.30	0.00	FS	XRF	335377	4174264	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm, 0 to 15 percent slopes.
227-1-236i	INYO	INY-3794		SUR	DBTG	6.30	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
227-1-243i	INYO	INY-5267			DBTG	6.30	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
246	INYO	INY-5268	3C		PRJPT	6.30	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-238c	INYO	INY-5269			DBTG	6.30	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-238f	INYO	INY-5269			DBTG	6.30	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
254-10-64a	INYO	INY-5762	S6.5/E48	0-10	DBTG	6.30	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
7238C	TULARE	TUL-0024		70-80	DBTG	6.30	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7240D	TULARE	TUL-0024		90-100	DBTG	6.30	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7245A	TULARE	TUL-0024		140-150	DBTG	6.30	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
0-2352CB	INYO	INY-1700	STRUCTURE 9		DBTG	6.30	3.10	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-2352CB	INYO	INY-1700	STRUCTURE 9		DBTG	6.30	3.10	FS	XRF	384317	4101876	83		pre-Quat	pre-Quat	Whitewolf-Toquerville families association, 15 to 50 percent slopes
0-1707CA	INYO	PINYON HOUSE			DBTG	6.30	0.00	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
81-240-1-47	INYO	INY-5281	N11.5/W0.9	-	PRJPT	6.31		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
88-5-02	FRESNO	88A-5			DBTG	6.40	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
20-2	INYO	INY-3782/H	SURFACE		BIF	6.40	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-249a	INYO	INY-5268			DBTG	6.40	0.00	FS	VIS	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-238a	INYO	INY-5269			DBTG	6.40	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
255-10-834b	INYO	INY-5763	S35/W195	0-10	DBTG	6.40	0.00	FS	VIS	390882	4076911	83		Holocene	Early-Holo	Shabbell sandy loam, 0 to 2 percent slopes
7238D	TULARE	TUL-0024		70-80	DBTG	6.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-231-027-001	INYO	INY-5278	-	-	PRJPT	6.40		FS		389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
20-3	INYO	INY-3782/H	SURFACE		BIF	6.50	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
269	INYO	INY-5212	CU; N21/E4	30-40	DBTG	6.50	0.00	FS	VIS	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-243h	INYO	INY-5267			DBTG	6.50	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-243c	INYO	INY-5267			DBTG	6.50	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-238d	INYO	INY-5269			DBTG	6.50	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-220b	INYO	INY-5271			DBTG	6.50	0.00	FS	VIS	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
220	INYO	INY-5271	3C	D	DBTG	6.50	0.00	FS	XRF	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
7244A	TULARE	TUL-0024		130-140	DBTG	6.50	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7244E	TULARE	TUL-0024		130-140	DBTG	6.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-232-010-001	INYO	INY-5280	-	-	PRJPT	6.50		FS		389780	4091780		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
574	INYO	INY-3782/H	CU; S53/W221	30-40	PRJPT	6.60	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
588	INYO	INY-3782/H	CU; S66/W212	0-10	DBTG	6.60	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
28	INYO	INY-5303	3C		PRJPT	6.60	0.00	FS	XRF	407890	4048260		11	Holocene	Early-Holo	Winnedumah silt loam, 0 to 2 percent slopes
7236C	TULARE	TUL-0024		50-60	DBTG	6.60	7.50	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
222	INYO	INY-3782/H	CU; N5/E10.25	50-60	DBTG	6.70	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
240	INYO	INY-5212	CU; N23/E6	30-40	DBTG	6.70	0.00	FS	VIS	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
227-1-243g	INYO	INY-5267			DBTG	6.70	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
249	INYO	INY-5268	3C	H	DBTG	6.70	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-238h	INYO	INY-5269			DBTG	6.70	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-197f	INYO	INY-5272			DBTG	6.70	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
252	INYO	INY-5273/H	3C		PRJPT	6.70	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
7242A	TULARE	TUL-0024		110-120	DBTG	6.70	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
220	INYO	INY-3782/H	CU; N5/E10.25	40-50	DBTG	6.80	0.00	FS	VIS	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-243d	INYO	INY-5267			DBTG	6.80	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-243a	INYO	INY-5267			DBTG	6.80	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-243b	INYO	INY-5267			DBTG	6.80	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-197g	INYO	INY-5272			DBTG	6.80	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
81-240-1-131	INYO	INY-5281	N9.3/E13.2	-	PRJPT	6.86		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
227-1-236g	INYO	INY-3794		SUR	DBTG	6.90	0.00	FS	VIS	390480	4099840		11	Holocene	late-Holo	Mazourka-Slickspots-Cajon complex, 0 to 2 percent slopes
240	INYO	INY-5212	CU; N23/E6	30-40	DBTG	6.90	0.00	FS	VIS	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-243e	INYO	INY-5267			DBTG	6.90	0.00	FS	VIS	390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
249	INYO	INY-5268	3C	A	DBTG	6.90	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-197c	INYO	INY-5272			DBTG	6.90	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
EU1	TULARE	TUL-1227		90-100	DBTG	6.90	0.00	FS	VIS	341460	4051950		11	pre-Quat	pre-Quat	ROCK OUTCROP-GERLE-LUMBERLY (CA733)
88-4-05	FRESNO	88A-4			DBTG	7.00	0.00	FS	XRF	370460	4096400		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
5362	FRESNO	FRE-2169			BIF	7.00	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
7231E	TULARE	TUL-0024		0-10	DBTG	7.00	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
92-1-FW-160	FRESNO	FRE-0061	N143;E3/20-30	20-30	BIF	7.10	0.00	FS	VIS	287505	4066367	83		Holocene	latest-Holo	Foster loam
269	INYO	INY-5212	CU; N21/E4	30-40	DBTG	7.10	0.00	FS	VIS	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
249	INYO	INY-5268	3C	E	DBTG	7.10	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-238e	INYO	INY-5269			DBTG	7.10	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
254-1-32	INYO	INY-5762	N29.1/W2	SURF	DBTG	7.10	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
7239B	TULARE	TUL-0024		80-90	DBTG	7.10	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7247C	TULARE	TUL-0024		170-180	DBTG	7.10	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
5354-04	FRESNO	FRE-2168			DBTG	7.20	0.00	FS	XRF	361730	4106500		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
269	INYO	INY-5212	CU; N21/E4	30-40	DBTG	7.20	0.00	FS	XRF	398500	4064130		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-238g	INYO	INY-5269			DBTG	7.20	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
227-1-257d	INYO	INY-5273/H Locus			DBTG	7.20	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
7246E	TULARE	TUL-0024		150-160	DBTG	7.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7248E	TULARE	TUL-0024		170-180	DBTG	7.20	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
257	INYO	INY-3782/H	SURFACE		PRJPT	7.30	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-197i	INYO	INY-5272			DBTG	7.30	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-257f	INYO	INY-5273/H Locus			DBTG	7.30	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
254-1-52	INYO	INY-5762	N15.4/E5.6	SURF	DBTG	7.30	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
0-333A	INYO	PINYON HOUSE	STRUCTURE 4		DBTG	7.30	2.30	FS	XRF					pre-Quat	pre-Quat	Sanpete-Theriot families complex, 5 to 60 percent slopes.
275	INYO	INY-3782/H	SURFACE		PRJPT	7.40	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
588	INYO	INY-3782/H	CU; S66/W212	0-10	DBTG	7.40	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-197e	INYO	INY-5272			DBTG	7.40	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-197h	INYO	INY-5272			DBTG	7.40	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-257a	INYO	INY-5273/H Locus			DBTG	7.40	0.00	FS	VIS	390700	4097025	83		Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
254-1-15a	INYO	INY-5762	N6.6/W42	SURF	DBTG	7.40	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
254-10-61	INYO	INY-5762	N17/E17	0-10	DBTG	7.40	0.00	FS	VIS	391693	4075686	83		Holocene	late-Holo	Goodale-Cartago complex, 2 to 5 percent slopes
7241C	TULARE	TUL-0024		100-110	DBTG	7.40	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-240-1-8	INYO	INY-5281	N50.4/W94.8	-	PRJPT	7.42		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
5369	FRESNO	FRE-2169			BIF	7.50	0.00	FS	XRF	360850	4106550		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
220	INYO	INY-5271	3C	A	DBTG	7.50	0.00	FS	XRF	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
5234	TULARE	TUL-1258			FLKTL	7.50	0.00	FS	XRF	349850	4063950		11	LtP	latest-Pleist	GERLE-TAHOMA VARIANT-ROCK OUTCROP (CA727)
7236B	TULARE	TUL-0024		50-60	DBTG	7.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7241E	TULARE	TUL-0024		100-110	DBTG	7.50	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7243A	TULARE	TUL-0024		120-130	DBTG	7.50	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7575B	TULARE	TUL-0028		0-10	DBTG	7.50	0.00	FS	VIS	338780	4042480		11	pre-Quat	pre-Quat	HOLLAND-ROCK OUTCROP-SHEEPHEAD (CA316)
81-244-10-159	INYO	INY-5276	N0/W91	20-40	PRJPT	7.53		FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
227-1-238b	INYO	INY-5269			DBTG	7.70	0.00	FS	VIS	390530	4098900		11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
7229C	TULARE	TUL-0024		10-20	DBTG	7.70	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
249	INYO	INY-5268	3C	D	DBTG	7.80	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
249	INYO	INY-5268	3C	B	DBTG	7.80	0.00	FS	XRF	390540	4099030	83	11	Holocene	late-Holo	Winerton-Hessica complex, 0 to 2 percent slopes
273	INYO	INY-3782/H	SURFACE		PRJPT	7.90	0.00	FS	XRF	398500	4064160		11	Holocene	Early-Holo	Rienhakel sand, 0 to 2 percent slopes
227-1-197b	INYO	INY-5272			DBTG	7.90	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
7235D	TULARE	TUL-0024		40-50	DBTG	7.90	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
7239A	TULARE	TUL-0024		80-90	DBTG	7.90	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
88-5-10	FRESNO	88A-5			DBTG	8.00	0.00	FS	XRF	371170	4090950		11	pre-Quat	pre-Quat	ROCK OUTCROP-CRYUMBREPTS-TINKER (CA861)
1611-24-979	TULARE	TUL-0024		48"	NODULE	8.00	0.00	FS	XRF	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7245E	TULARE	TUL-0024		140-150	DBTG	8.10	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-248-1-149	INYO	INY-5267	N0/W105	I	PRJPT	8.10		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-1-130	INYO	INY-5267	N79.5/W120.9	-	PRJPT	8.11		FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
227-1-197a	INYO	INY-5272			DBTG	8.20	0.00	FS	VIS	390550	4098180		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
81-231-026-001	INYO	INY-5278	-	-	PRJPT	8.30		FS		389600	4090025		11	Holocene	Early-Holo	Pokonahbe loamy fine sand, 0 to 2 percent slopes
81-244-1-55	INYO	INY-5276	S24.1/W32.9	-	PRJPT	8.32		FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
227-1-220h	INYO	INY-5271			DBTG	8.40	0.00	FS	VIS	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
66	INYO	INY-5294	3C	I	DBTG	8.40	0.00	FS	XRF	411530	4047640		11	Holocene	late-Holo	Seaman-Yellowrock-Cajon complex, 0 to 2 percent slopes
7245D	TULARE	TUL-0024		140-150	DBTG	8.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
7249A	TULARE	TUL-0024		180-190	DBTG	8.60	0.00	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
81-240-1-262	INYO	INY-5281	N0/E30	C	PRJPT	8.99		FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
256-10-442a	INYO	INY-5764	S18/W97.5	10-20	DBTG	9.00	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
81-244-1-2	INYO	INY-5276	S77.4/W63.3	-	PRJPT	9.06		FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
56	INYO	INY-1425/H	3B		PRJPT	9.20	0.00	FS	XRF	387480	4114850		11	Historic-Modern	Hist-Mod	Torrifluvents-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes
7244B	TULARE	TUL-0024		130-140	DBTG	9.40	11.70	FS	VIS	341480	4043000		11	pre-Quat	pre-Quat	WOOLSTALF-ROCK OUTCROP-JOCAL (CA721)
220	INYO	INY-5271	3C	E	DBTG	9.50	0.00	FS	XRF	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
253	INYO	INY-5273/H	3C		PRJPT	9.50	0.00	FS	XRF	390700	4097025	83	11	Holocene	latest-Holo	Shondow loam, 0 to 2 percent slopes
227-1-220a	INYO	INY-5271			DBTG	9.80	0.00	FS	VIS	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-220c	INYO	INY-5271			DBTG	10.20	0.00	FS	VIS	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
227-1-220d	INYO	INY-5271			DBTG	10.20	0.00	FS	VIS	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
256-10-422b	INYO	INY-5764	FEATURE 8	0-10	DBTG	11.80	0.00	FS	VIS	390693	4076866	83		Older Pleist.	Older Pleist	Lubkin-Tinemaha complex, moist, 5 to 15 percent slopes
220	INYO	INY-5271	3C	C	DBTG	12.60	0.00	FS	XRF	390600	4097880		11	Holocene	late-Holo	Hesperia loamy sand, 0 to 2 percent slopes
81-248-1-9	INYO	INY-5267	N3.3/E74.6	-	PRJPT			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-10-163	INYO	INY-5267	N19/W95	20-40	DBTG			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-10-173	INYO	INY-5267	N18.5/W93	30-40	DBTG			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-10-173	INYO	INY-5267	N18.5/W93	30-40	DBTG			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-1-201	INYO	INY-5267	N15/E75	D	BIFACE			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-10-488	INYO	INY-5267	S170/E122	0-10	BIFACE			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-248-10-497	INYO	INY-5267	S170/E122	0-10	BIFACE			FS		390510	4099280	83	11	Holocene	latest-Holo	Inyo sand, 0 to 9 percent slopes
81-244-1-3	INYO	INY-5276	S83.4/W68.4	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-5	INYO	INY-5276	S122.1/W61.2	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-8	INYO	INY-5276	S165/W60	B	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-12	INYO	INY-5276	S108.7/W92.2	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-16	INYO	INY-5276	S49/E25.1	-	DRILL			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-18	INYO	INY-5276	S27.6/E27	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-34	INYO	INY-5276	S36.5/E10.5	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-47	INYO	INY-5276	S34.1/W80.5	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-49	INYO	INY-5276	N0.9/W10	-	PRJPT			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-264	INYO	INY-5276	S5/W75	70-80 cm	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-423	INYO	INY-5276	S6/W76	III 70	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-493	INYO	INY-5276	S150/W60	E	BIFACE			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-516	INYO	INY-5276	S100/W65	0-10	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-516	INYO	INY-5276	S100/W65	0-10	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-1-657	INYO	INY-5276	S90/W150	I	BIFACE			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-1102	INYO	INY-5276	S2/W4	100-110	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-1154	INYO	INY-5276	S2/W5	80-90	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-244-10-1154	INYO	INY-5276	S2/W5	80-90	DBTG			FS		389500	4085290		11	Holocene	late-Holo	Winerton fine sandy loam, 0 to 2 percent slopes
81-240-10-404	INYO	INY-5281	N1.5/E30	0-20	BIFACE			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-412	INYO	INY-5281	N1.5/E30	20-40	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-412	INYO	INY-5281	N1.5/E30	20-40	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-576	INYO	INY-5281	N69.5/W76.5	20-30	BIFACE			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-640	INYO	INY-5281	N0/W63	20-30	BIFACE			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-642	INYO	INY-5281	N0/W63	20-30	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-651	INYO	INY-5281	N0/W63	30-40	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-706	INYO	INY-5281	N25/W45	20-30	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-814	INYO	INY-5281	N54/W59	40-50 cm	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-943	INYO	INY-5281	S3/W90	20-30	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-943	INYO	INY-5281	S3/W90	20-30	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-943	INYO	INY-5281	S3/W90	20-30	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes
81-240-10-943	INYO	INY-5281	S3/W90	20-30	DBTG			FS		390140	4092960		11	Holocene	mid-Holo	Cartago gravelly loamy sand, 0 to 2 percent slopes

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
181	MONO	MNO-248/H	1	A	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
181	MONO	MNO-248/H	1	C	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
181	MONO	MNO-248/H	1	B	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
181	MONO	MNO-248/H	1	D	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
181	MONO	MNO-248/H	1	F	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
181	MONO	MNO-248/H	1	H	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
181	MONO	MNO-248/H	1	K	DBTG	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
182	MONO	MNO-248/H	1		BIF	0.00	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
113	MONO	MNO-2520	1	D	DBTG	0.00	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
113	MONO	MNO-2520	1	G	DBTG	0.00	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
113	MONO	MNO-2520	1	B	DBTG	0.00	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
113	MONO	MNO-2520	1	E	DBTG	0.00	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
113	MONO	MNO-2520	1	F	DBTG	0.00	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
113	MONO	MNO-2520	1	I	DBTG	0.00	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S8-(F9)10	MONO	MNO-3116/H		SUR	DBTG	0.00	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
175	MONO	MNO-3121	1		BIF	0.00	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
177	MONO	MNO-3121	1	F	DBTG	0.00	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
177	MONO	MNO-3121	1	G	DBTG	0.00	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
177	MONO	MNO-3121	1	H	DBTG	0.00	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
177	MONO	MNO-3121	1	I	DBTG	0.00	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
177	MONO	MNO-3121	1	J	DBTG	0.00	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
188	MONO	MNO-3131	1	A	DBTG	0.00	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
188	MONO	MNO-3131	1	G	DBTG	0.00	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
188	MONO	MNO-3131	1	H	DBTG	0.00	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
188	MONO	MNO-3131	1	I	DBTG	0.00	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
188	MONO	MNO-3131	1	J	DBTG	0.00	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
192	MONO	MNO-3133	1	B	DBTG	0.00	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
192	MONO	MNO-3133	1	C	DBTG	0.00	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
192	MONO	MNO-3133	1	E	DBTG	0.00	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
192	MONO	MNO-3133	1	H	DBTG	0.00	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
192	MONO	MNO-3133	1	J	DBTG	0.00	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
165	MONO	MNO-3135/H	1	H	DBTG	0.00	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
165	MONO	MNO-3135/H	1	I	DBTG	0.00	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
165	MONO	MNO-3135/H	1	K	DBTG	0.00	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	A	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	C	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	E	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	G	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	H	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	I	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	J	DBTG	0.00	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
167	MONO	MNO-3137	1	K	DBTG	0.00	0.00	BH	XRF	320000	4228620		11	Volcanics	Early Holocene Volcanics	NIRE-KATYBLAY-ROCKABIN (CA778)
169	MONO	MNO-3138	1		PRJPT	0.00	0.00	BH	XRF	316400	4226270		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
213	MONO	MNO-3148	1		BIF	0.00	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
216	MONO	MNO-3148	1	F	DBTG	0.00	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
216	MONO	MNO-3148	1	H	DBTG	0.00	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
216	MONO	MNO-3148	1	I	DBTG	0.00	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
216	MONO	MNO-3148	1	J	DBTG	0.00	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
231	MONO	MNO-3149	1	E	DBTG	0.00	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
231	MONO	MNO-3149	1	F	DBTG	0.00	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
231	MONO	MNO-3149	1	H	DBTG	0.00	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
231	MONO	MNO-3149	1	I	DBTG	0.00	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
231	MONO	MNO-3149	1	J	DBTG	0.00	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
284	MONO	MNO-3153	1	C	DBTG	0.00	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
284	MONO	MNO-3153	1	C	DBTG	0.00	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
284	MONO	MNO-3153	1	F	DBTG	0.00	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
284	MONO	MNO-3153	1	J	DBTG	0.00	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
284	MONO	MNO-3153	1	K	DBTG	0.00	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
291	MONO	MNO-3158	1		BIF	0.00	0.00	BH	XRF	288580	4247820		11	pre-Quat	pre-Quat	Heenlake-Loope association
280	MONO	MNO-3159	1		PRJPT	0.00	0.00	BH	XRF	288800	4247630		11	pre-Quat	pre-Quat	Heenlake-Loope association
279	MONO	MNO-3159	1		PRJPT	0.00	0.00	BH	XRF	288800	4247630		11	pre-Quat	pre-Quat	Heenlake-Loope association
94	MONO	MNO-3181	2	B	DBTG	0.00	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
94	MONO	MNO-3181	2	F	DBTG	0.00	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
94	MONO	MNO-3181	2	I	DBTG	0.00	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
94	MONO	MNO-3181	2	J	DBTG	0.00	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
148	MONO	MNO-3192	2	H	DBTG	0.00	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
148	MONO	MNO-3192	2	I	DBTG	0.00	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
116	MONO	MNO-0395	1	A	DBTG	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
114	MONO	MNO-0395	1		PRJPT	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
116	MONO	MNO-0395	1	F	DBTG	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
116	MONO	MNO-0395	1	G	DBTG	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
116	MONO	MNO-0395	1	H	DBTG	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
116	MONO	MNO-0395	1	I	DBTG	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
116	MONO	MNO-0395	1	J	DBTG	0.00	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
119	MONO	MNO-0410	1		PRJPT	0.00	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
121	MONO	MNO-0410	1	F	DBTG	0.00	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
121	MONO	MNO-0410	1	H	DBTG	0.00	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
121	MONO	MNO-0410	1	K	DBTG	0.00	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
122	MONO	MNO-0415	1		PRJPT	0.00	0.00	BH	XRF	277000	4245040			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
L-359	MONO	MNO-0446	SQUARE-6	0-10	DBTG	0.00	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
L-208A	MONO	MNO-0446	SQUARE-4	30-40	DBTG	0.00	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
283	MONO	MNO-0692/H	1	F	DBTG	0.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
283	MONO	MNO-0692/H	1	C	DBTG	0.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
283	MONO	MNO-0692/H	1	E	DBTG	0.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
283	MONO	MNO-0692/H	1	G	DBTG	0.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
283	MONO	MNO-0692/H	1	H	DBTG	0.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
283	MONO	MNO-0692/H	1	J	DBTG	0.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
349-817	MONO	IA11	SUR	SUR	PRJPT	0.00	0.00	BH	XRF	335981	4174108	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes
283	MONO	MNO-0692/H	1	A	DBTG	1.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
283	MONO	MNO-0692/H	1	I	DBTG	1.00	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
987	MONO	MNO-0891	SCN72/W51	SURFACE	PRJPT	1.10	0.00	BH	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
113	MONO	MNO-2520	1	H	DBTG	1.10	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S6-(F8)9-HC	MONO	MNO-3114/H		SUR	FLKTL	1.10	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
216	MONO	MNO-3148	1	E	DBTG	1.10	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
229	MONO	MNO-3149	1		PRJPT	1.10	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
116	MONO	MNO-0395	1	E	DBTG	1.10	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
CU5-F7	MONO	MNO-3125/H	CU-5	0-10	DBTG	1.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
216	MONO	MNO-3148	1	C	DBTG	1.20	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
91	MONO	MNO-3181	2		PRJPT	1.20	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
123	MONO	MNO-0415	1	B	DBTG	1.20	0.00	BH	XRF	277000	4245040			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
283	MONO	MNO-0692/H	1	B	DBTG	1.30	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
98-02-S6-(F7)9-HC	MONO	MNO-3114/H		SUR	FLKTL	1.40	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU5-F10	MONO	MNO-3125/H	CU-5	0-10	DBTG	1.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F5	MONO	MNO-3125/H	CU-5	0-10	DBTG	1.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
276	MONO	MNO-3158	1		PRJPT	1.40	0.00	BH	XRF	288580	4247820		11	pre-Quat	pre-Quat	Heenlake-Loope association
94	MONO	MNO-3181	2	C	DBTG	1.40	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
121	MONO	MNO-0410	1	B	DBTG	1.40	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
120	MONO	MNO-0410	1		PRJPT	1.40	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S6-(F4)9-HC	MONO	MNO-3114/H		SUR	FLKTL	1.50	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A1	MONO	MNO-3116/H		SUR	FLKTL	1.50	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
CU1-F13	MONO	MNO-3125/H	CU-1	10-20	DBTG	1.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F1	MONO	MNO-3125/H	CU-5	SURF	DBTG	1.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F2	MONO	MNO-3125/H	CU-5	SURF	DBTG	1.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
113	MONO	MNO-2520	1	A	DBTG	1.60	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S6-(F2)9-HC	MONO	MNO-3114/H		SUR	FLKTL	1.60	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F5)10-W	MONO	MNO-3114/H		SUR	DBTG	1.60	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
167	MONO	MNO-3137	1	B	DBTG	1.60	0.00	BH	XRF	320000	4228620		11	Volcanics	Early Holocene Volcanics	NIRE-KATYBLAY-ROCKABIN (CA778)
148	MONO	MNO-3192	2	B	DBTG	1.60	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
148	MONO	MNO-3192	2	J	DBTG	1.60	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
292	MONO	MNO-3194	2	C	DBTG	1.60	0.00	BH	XRF	324000	4217720		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
98-02-S6-(F5)10-MC1	MONO	MNO-3114/H		SUR	DBTG	1.70	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F9)10-MC1	MONO	MNO-3114/H		SUR	DBTG	1.70	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A2	MONO	MNO-3116/H		SUR	BIF	1.70	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
TO-A1	MONO	MNO-3125/H	TO/S129.6		BIF	1.70	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F1	MONO	MNO-3125/H	CU-1	SURF	DBTG	1.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F3	MONO	MNO-3125/H	CU-5	SURF	DBTG	1.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F4	MONO	MNO-3125/H	CU-5	0-10	DBTG	1.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
188	MONO	MNO-3131	1	D	DBTG	1.70	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
167	MONO	MNO-3137	1	E	DBTG	1.70	0.00	BH	XRF	320000	4228620		11	Volcanics	Early Holocene Volcanics	NIRE-KATYBLAY-ROCKABIN (CA778)
167	MONO	MNO-3137	1	G	DBTG	1.70	0.00	BH	XRF	320000	4228620		11	Volcanics	Early Holocene Volcanics	NIRE-KATYBLAY-ROCKABIN (CA778)
133	MONO	MNO-3186	2	J	DBTG	1.70	0.00	BH	XRF	317490	4215340		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
148	MONO	MNO-3192	2	D	DBTG	1.70	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
349-776	MONO	F171	SUR	SUR	PRJPT	1.70	0.00	BH	XRF	339207	4181188	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xerorthents-Vitrandic Xeropsamments complex, 30 to 70 percent slopes
1024	MONO	MNO-0891	SCN120/W205	SURFACE	PRJPT	1.80	0.00	BH	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
119-176-4	MONO	MNO-2122	UNIT-1	0-10	PRJPT	1.80	0.00	BH	XRF					Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Deepwell association, 2 to 15 percent slopes
CU1-F4	MONO	MNO-3125/H	CU-1	SURF	DBTG	1.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
170	MONO	MNO-3138	1	I	DBTG	1.80	0.00	BH	XRF	316400	4226270		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
216	MONO	MNO-3148	1	D	DBTG	1.80	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
216	MONO	MNO-3148	1	G	DBTG	1.80	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
116	MONO	MNO-0395	1	C	DBTG	1.80	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
349-220	MONO	A48	SUR	SUR	PRJPT	1.90	3.00	BH	XRF	335175	4172255	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 60 percent slopes
CU6-F10	MONO	MNO-3125/H	CU-6	0-10	DBTG	1.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F14	MONO	MNO-3125/H	CU-6	20-30	DBTG	1.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1F5	MONO	MNO-3125/H	CU-1	SURF	DBTG	1.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F8	MONO	MNO-3125/H	CU-5	0-10	DBTG	1.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
292	MONO	MNO-3194	2	B	DBTG	1.90	0.00	BH	XRF	324000	4217720		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
1082	MONO	MNO-0891	SCN57/W201	SURFACE	PRJPT	2.00	0.00	BH	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
165	MONO	MNO-3135/H	1	C	DBTG	2.00	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
165	MONO	MNO-3135/H	1	D	DBTG	2.00	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
148	MONO	MNO-3192	2	G	DBTG	2.00	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
98-02-S6-(F7)10-W	MONO	MNO-3114/H		SUR	DBTG	2.10	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T1E-A5	MONO	MNO-3125/H	T1E/S346.5		CORE	2.10	5.80	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
188	MONO	MNO-3131	1	F	DBTG	2.10	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
281	MONO	MNO-3159	1		PRJPT	2.10	0.00	BH	XRF	288800	4247630		11	pre-Quat	pre-Quat	Heenlake-Loope association
177	MONO	MNO-3121	1	B	DBTG	2.20	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
188	MONO	MNO-3131	1	B	DBTG	2.20	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
165	MONO	MNO-3135/H	1	G	DBTG	2.20	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
166	MONO	MNO-3136	1	B	DBTG	2.20	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
148	MONO	MNO-3192	2	A	DBTG	2.20	0.00	BH	XRF	321160	4216760		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
98-02-S6-(F3)10-W	MONO	MNO-3114/H		SUR	FLKTL	2.30	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU8-F7	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	2.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
216	MONO	MNO-3148	1	A	DBTG	2.30	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
L-428	MONO	MNO-0446	SQUARE-6	40-50	DBTG	2.30	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
98-02-S1-(F12)20	MONO	MNO-3110		SUR	DBTG	2.40	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F20)20	MONO	MNO-3110		SUR	DBTG	2.40	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
98-02-S6-(F8)10-W	MONO	MNO-3114/H		SUR	FLKTL	2.40	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU1-F7	MONO	MNO-3125/H	CU-1	0-10	DBTG	2.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
165	MONO	MNO-3135/H	1	A	DBTG	2.40	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
167	MONO	MNO-3137	1	F	DBTG	2.40	0.00	BH	XRF	320000	4228620		11	Volcanics	Early Holocene Volcanics	NIRE-KATYBLAY-ROCKABIN (CA778)
98-02-S9-(F1)10	MONO	MNO-3117/H		SUR	DBTG	2.50	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
116	MONO	MNO-0395	1	B	DBTG	2.50	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
121	MONO	MNO-0410	1	C	DBTG	2.50	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S6-(F4)10-W	MONO	MNO-3114/H		SUR	DBTG	2.60	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A9	MONO	MNO-3116/H		SUR	FLKTL	2.60	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T1W-A8	MONO	MNO-3125/H	T1W/S345.0		BIF	2.60	6.50	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A8	MONO	MNO-3125/H	T1W/S345.0		CORE	2.60	6.50	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
165	MONO	MNO-3135/H	1	B	DBTG	2.60	0.00	BH	XRF	309980	4227280		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
121	MONO	MNO-0410	1	A	DBTG	2.60	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S1-A10	MONO	MNO-3110		SUR	DRILL	2.70	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F1)9-HC	MONO	MNO-3114/H		SUR	DBTG	2.70	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A10	MONO	MNO-3116/H		SUR	PRJPT	2.70	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU3-F7	MONO	MNO-3125/H	CU-3	0-10	DBTG	2.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
98-02-S6-(F9)10-W	MONO	MNO-3114/H		SUR	DBTG	2.80	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A6	MONO	MNO-3116/H		SUR	FLKTL	2.80	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A19	MONO	MNO-3116/H		SUR	PRJPT	2.80	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A22	MONO	MNO-3116/H		SUR	PRJPT	2.80	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU5-F9	MONO	MNO-3125/H	CU-5	0-10	DBTG	2.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-F12	MONO	MNO-3125/H	CU-5	0-10	DBTG	2.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F2	MONO	MNO-3125/H	CU-6	SURF	DBTG	2.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F3	MONO	MNO-3125/H	CU-6	SURF	DBTG	2.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F15	MONO	MNO-3125/H	CU-6	20-30	DBTG	2.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1E-A4	MONO	MNO-3125/H	TIE/S175.5		CORE	2.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T5E-A3	MONO	MNO-3125/H	T5E/S222.0		BIF	2.80	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
98-02-S6-(F7)10-MC1	MONO	MNO-3114/H		SUR	DBTG	2.90	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F2)10	MONO	MNO-3116/H		SUR	FLKTL	2.90	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F6)10	MONO	MNO-3117/H		SUR	DBTG	2.90	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F7)10	MONO	MNO-3117/H		SUR	DBTG	2.90	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
133	MONO	MNO-3186	2	E	DBTG	2.90	0.00	BH	XRF	317490	4215340		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
98-02-S6-(F1)10-W	MONO	MNO-3114/H		SUR	DBTG	3.00	1.50	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F3)10	MONO	MNO-3116/H		SUR	DBTG	3.00	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU6-F12	MONO	MNO-3125/H	CU-6	20-30	DBTG	3.00	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
284	MONO	MNO-3153	1	A	DBTG	3.00	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
1083	MONO	MNO-0891	SCN54/W213	SURFACE	PRJPT	3.10	0.00	BH	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
98-02-S6-(F6)10-MC1	MONO	MNO-3114/H		SUR	DBTG	3.10	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A3	MONO	MNO-3116/H		SUR	FRMFLKTL	3.10	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A4	MONO	MNO-3116/H		SUR	BIF	3.10	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F8)10	MONO	MNO-3116/H		SUR	DBTG	3.10	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T2W-A4	MONO	MNO-3125/H	T2W/S69.4		CORE	3.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
133	MONO	MNO-3186	2	I	DBTG	3.10	0.00	BH	XRF	317490	4215340		11	Volcanics	Latest Holocene Ash/Pumice	BRANTEL-BLINDSPRING-MONTEZUMA (CA763)
181	MONO	MNO-248/H	1	E	DBTG	3.20	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
98-02-S1-(F2)20	MONO	MNO-3110		SUR	DBTG	3.20	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F8)20	MONO	MNO-3110		SUR	DBTG	3.20	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A21	MONO	MNO-3116/H		SUR	FLKTL	3.20	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F7)10	MONO	MNO-3116/H		SUR	DBTG	3.20	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU5-A1	MONO	MNO-3125/H	CU-5	SURF	FLKTL	3.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
284	MONO	MNO-3153	1	H	DBTG	3.20	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
113	MONO	MNO-2520	1	C	DBTG	3.30	0.00	BH	XRF	280500	4248080		11	Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S6-(F5)9-HC	MONO	MNO-3114/H		SUR	DBTG	3.30	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F6)10-W	MONO	MNO-3114/H		SUR	DBTG	3.30	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A15	MONO	MNO-3116/H		SUR	PRJPT	3.30	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
98-02-S9-(F5)10	MONO	MNO-3117/H		SUR	DBTG	3.30	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T3W-A4	MONO	MNO-3125/H	T3W/S61.8		CORE	3.30	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
166	MONO	MNO-3136	1	F	DBTG	3.30	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
167	MONO	MNO-3137	1	A	DBTG	3.30	0.00	BH	XRF	320000	4228620		11	Volcanics	Early Holocene Volcanics	NIRE-KATYBLAY-ROCKABIN (CA778)
98-02-S1-A7	MONO	MNO-3110		SUR	BIF	3.40	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F11)20	MONO	MNO-3110		SUR	DBTG	3.40	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-A7	MONO	MNO-3117/H		SUR	CORE	3.40	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F9)10	MONO	MNO-3117/H		SUR	DBTG	3.40	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
94	MONO	MNO-3181	2	H	DBTG	3.40	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
98-02-S9-(F10)10	MONO	MNO-3117/H		SUR	DBTG	3.50	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F5)14	MONO	MNO-3117/H		SUR	DBTG	3.50	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F6)14	MONO	MNO-3117/H		SUR	DBTG	3.50	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F11)14	MONO	MNO-3117/H		SUR	DBTG	3.50	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU6-F6	MONO	MNO-3125/H	CU-6	0-10	DBTG	3.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
L-764	MONO	MNO-0446	SQUARE-8	80-90	PRJPT	3.50	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
349-415	MONO	W125	SUR	SUR	PRJPT	3.50	0.00	BH	XRF	337928	4186805	83		Volcanics	Latest Holocene Ash/Pumice	Vitrandic Cryopsamments, 0 to 15 percent slopes.
98-02-S1-A2	MONO	017-98-02-S1		SURFACE	BIF	3.60	0.00	BH	XRF					<Null>	<Null>	<Null>
98-02-S1-A2	MONO	017-98-02-S1		SURFACE	BIF	3.60	0.00	BH	XRF					<Null>	<Null>	<Null>
181	MONO	MNO-248/H	1	G	DBTG	3.60	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
98-02-S1-A2	MONO	MNO-3110		SUR	BIF	3.60	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F1)10-MC1	MONO	MNO-3114/H		SUR	DBTG	3.60	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T4E-A1	MONO	MNO-3125/H	T4E/S117.0		BIF	3.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F6	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	3.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
188	MONO	MNO-3131	1	C	DBTG	3.60	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
166	MONO	MNO-3136	1	D	DBTG	3.60	0.00	BH	XRF	309980	4227160		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-A6	MONO	MNO-3110		SUR	BIF	3.70	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F10)20	MONO	MNO-3110		SUR	DBTG	3.70	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F8)10-MC1	MONO	MNO-3114/H		SUR	DBTG	3.70	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F10)10-MC1	MONO	MNO-3114/H		SUR	DBTG	3.70	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F9)9-HC	MONO	MNO-3114/H		SUR	DBTG	3.70	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F2)10-MC1	MONO	MNO-3114/H		SUR	DBTG	3.70	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-A6	MONO	MNO-3117/H		SUR	BIF	3.70	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F1)14	MONO	MNO-3117/H		SUR	DBTG	3.70	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T4E-A5	MONO	MNO-3125/H	T4E/S285.0		BIF	3.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T6E-A1	MONO	MNO-3125/H	T6E/S260		BIF	3.70	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU3-F2	MONO	MNO-3125/H	CU-3	SURF	DBTG	3.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F8	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	3.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
192	MONO	MNO-3133	1	A	DBTG	3.70	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
121	MONO	MNO-0410	1	D	DBTG	3.70	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
123	MONO	MNO-0415	1	C	DBTG	3.70	0.00	BH	XRF	277000	4245040			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S8-A12	MONO	MNO-3116/H		SUR	BIF	3.80	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F6)10	MONO	MNO-3116/H		SUR	DBTG	3.80	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F9)14	MONO	MNO-3117/H		SUR	DBTG	3.80	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
UA021	MNO	MNO-0578	UNIT A	090-100	PPT	3.80		BH		329370	4170863	83		Volcanics	Latest Holocene Ash/Pumice	Corbett family-Vitrandic Xeropsamments, warm-Rock outcrop complex, 15 to 30 perc
98-02-S1-(F6)20	MONO	MNO-3110		SUR	DBTG	3.90	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F18)20	MONO	MNO-3110		SUR	DBTG	3.90	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F4)10-MC1	MONO	MNO-3114/H		SUR	FLKTL	3.90	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
188	MONO	MNO-3131	1	E	DBTG	3.90	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
284	MONO	MNO-3153	1	G	DBTG	3.90	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
123	MONO	MNO-0415	1	D	DBTG	3.90	0.00	BH	XRF	277000	4245040			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
98-02-S1-A5	MONO	MNO-3110		SUR	BIF	4.00	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F1)20	MONO	MNO-3110		SUR	DBTG	4.00	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F2)10	MONO	MNO-3117/H		SUR	DBTG	4.00	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
121	MONO	MNO-0410	1	E	DBTG	4.00	0.00	BH	XRF	276960	4245308			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
180	MONO	MNO-248/H	1		PRJPT	4.10	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
98-02-S1-(F19)20	MONO	MNO-3110		SUR	DBTG	4.10	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F3)10-MC1	MONO	MNO-3114/H		SUR	DBTG	4.10	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F4)10	MONO	MNO-3117/H		SUR	DBTG	4.10	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
L-591	MONO	MNO-0446	SQUARE-7	90-100	PRJPT	4.10	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
98-02-S1-A8	MONO	MNO-3110		SUR	BIF	4.20	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F9)20	MONO	MNO-3110		SUR	DBTG	4.20	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F13)20	MONO	MNO-3110		SUR	DBTG	4.20	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F16)20	MONO	MNO-3110		SUR	DBTG	4.20	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A18	MONO	MNO-3116/H		SUR	BIF	4.20	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-A10	MONO	MNO-3117/H		SUR	BIF	4.20	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
284	MONO	MNO-3153	1	I	DBTG	4.20	0.00	BH	XRF	286420	4248120		11	Older Pleist.	Older Pleist	Murain-Shorthike association
116	MONO	MNO-0395	1	D	DBTG	4.20	0.00	BH	XRF	281372	4248750			LtP	latest-Pleist	Murain association
98-02-S1-(F14)20	MONO	MNO-3110		SUR	DBTG	4.30	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F10)10	MONO	MNO-3116/H		SUR	DBTG	4.30	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F4)14	MONO	MNO-3117/H		SUR	FLKTL	4.30	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F17)20	MONO	MNO-3110		SUR	DBTG	4.40	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A13	MONO	MNO-3116/H		SUR	PRJPT	4.40	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A20	MONO	MNO-3116/H		SUR	BIF	4.40	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F4)10	MONO	MNO-3116/H		SUR	DBTG	4.40	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
177	MONO	MNO-3121	1	D	DBTG	4.40	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
T3W-A2	MONO	MNO-3125/H	T3W/S27.0		BIF	4.40	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F13	MONO	MNO-3125/H	CU-6	20-30	DBTG	4.40	16.20	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F12	MONO	MNO-3125/H	CU-8	10-20	DBTG	4.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
846	MONO	MNO-0891	UNIT 1	30-40	PRJPT	4.50	0.00	BH	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
98-02-S1-(F5)20	MONO	MNO-3110		SUR	DBTG	4.50	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A8	MONO	MNO-3116/H		SUR	BIF	4.50	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F5)10	MONO	MNO-3116/H		SUR	DBTG	4.50	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F10)14	MONO	MNO-3117/H		SUR	DBTG	4.50	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
177	MONO	MNO-3121	1	E	DBTG	4.50	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
1096	MONO	MNO-0891	UNIT 12	50-60	CORE	4.60	0.00	BH	XRF	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
98-02-S1-(F4)20	MONO	MNO-3110		SUR	DBTG	4.60	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F3)9-HC	MONO	MNO-3114/H		SUR	DBTG	4.60	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F2)10-W	MONO	MNO-3114/H		SUR	FLKTL	4.60	0.00	BH	XRF	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S6-(F10)10-W	MONO	MNO-3114/H		SUR	DBTG	4.60	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-A9	MONO	MNO-3117/H		SUR	PRJPT	4.60	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F3)14	MONO	MNO-3117/H		SUR	FLKTL	4.60	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
177	MONO	MNO-3121	1	A	DBTG	4.60	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
CU6-F16	MONO	MNO-3125/H	CU6/30-40		DBTG	4.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F18	MONO	MNO-3125/H	CU-1	10-20	DBTG	4.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU3-F5	MONO	MNO-3125/H	CU-3	SURF	DBTG	4.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU5-A2	MONO	MNO-3125/H	CU-5	SURF	DBTG	4.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F17	MONO	MNO-3125/H	CU6	30-40	DBTG	4.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
187	MONO	MNO-3131	1		PRJPT	4.60	0.00	BH	XRF	307080	4245960		11	LtP	latest-Pleist	Brokenhoe-Fisherdig association
192	MONO	MNO-3133	1	G	DBTG	4.60	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
L-773	MONO	MNO-0446	CACHE	70-80	BIF	4.60	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
177	MONO	MNO-3121	1	C	DBTG	4.70	0.00	BH	XRF	307910	4248430		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
231	MONO	MNO-3149	1	B	DBTG	4.70	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
123	MONO	MNO-0415	1	A	DBTG	4.70	0.00	BH	XRF	277000	4245040			Holocene	latest-Holo	Hopeval complex, 0 to 2 percent slopes
L-337	MONO	MNO-0446	SQUARE-5	90-100	PRJPT	4.70	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
L-772	MONO	MNO-0446	CACHE	70-80	BIF	4.70	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
L-771	MONO	MNO-0446	CACHE	70-80	BIF	4.70	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
98-02-S6-(F6)9-HC	MONO	MNO-3114/H		SUR	FLKTL	4.80	0.00	BH	VIS	307290	4234765		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-A5	MONO	MNO-3116/H		SUR	PRJPT	4.80	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F7)14	MONO	MNO-3117/H		SUR	DBTG	4.80	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F13)14	MONO	MNO-3117/H		SUR	DBTG	4.80	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
CU6-F4	MONO	MNO-3125/H	CU-6	SURF	DBTG	4.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
181	MONO	MNO-248/H	1	J	DBTG	4.90	0.00	BH	XRF	308100	4249250			LtP	latest-Pleist	Brokenhoe-Fisherdig association
98-02-S8-A7	MONO	MNO-3116/H		SUR	FLKTL	4.90	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S8-(F1)10	MONO	MNO-3116/H		SUR	FLKTL	4.90	0.00	BH	VIS	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU3-F6	MONO	MNO-3125/H	CU-3	0-10	DBTG	4.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
192	MONO	MNO-3133	1	F	DBTG	4.90	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
231	MONO	MNO-3149	1	A	DBTG	4.90	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
94	MONO	MNO-3181	2	E	DBTG	4.90	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
CU6-F1	MONO	MNO-3125/H	CU-6	SURF	DBTG	5.00	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
L-407	MONO	MNO-0446	SQUARE-6	30-40	DBTG	5.00	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
98-02-S8-A17	MONO	MNO-3116/H		SUR	BIF	5.10	0.00	BH	XRF	307275	4235570		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T3W-A8	MONO	MNO-3125/H	T3W/S250		BIF	5.10	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F11	MONO	MNO-3125/H	CU-6	20-30	DBTG	5.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F11	MONO	MNO-3125/H	CU-1	10-20	DBTG	5.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
275	MONO	MNO-3158	1		PRJPT	5.10	0.00	BH	XRF	288580	4247820		11	pre-Quat	pre-Quat	Heenlake-Loope association
L-496	MONO	MNO-0446	SQUARE-7	0-10	PRJPT	5.10	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
98-02-S9-(F14)14	MONO	MNO-3117/H		SUR	DBTG	5.20	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU4-F11	MONO	MNO-3125/H	CU-4	20-30	DBTG	5.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
1088	MONO	MNO-0891	SCN48/W190	SURFACE	DBTG	5.30	0.00	BH	VIS	0	0		11	Volcanics	Latest Holocene Ash/Pumice	Alamedawell-Orecart complex, 0 to 4 percent slopes
98-02-S9-A8	MONO	MNO-3117/H		SUR	BIF	5.30	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F2)14	MONO	MNO-3117/H		SUR	DBTG	5.30	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU6-F8	MONO	MNO-3125/H	CU-6	0-10	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F12	MONO	MNO-3125/H	CU-1	10-20	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F4	MONO	MNO-3125/H	CU-4	10-20	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F7	MONO	MNO-3125/H	CU-4	10-20	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F8	MONO	MNO-3125/H	CU-4	20-30	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F10	MONO	MNO-3125/H	CU-4	20-30	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F20	MONO	MNO-3125/H	CU-6	30-40	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F15	MONO	MNO-3125/H	CU-8	10-20	DBTG	5.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
6	MONO	MNO-3211	2		PRJPT	5.30	0.00	BH	XRF	350620	4197960		11	Volcanics	Latest Holocene Ash/Pumice	Brantel gravelly loamy sand, 0 to 4 percent slopes
L-448	MONO	MNO-0446	SQUARE-6	60-70	DBTG	5.30	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
98-02-S9-(F8)10	MONO	MNO-3117/H		SUR	DBTG	5.40	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU1-F6	MONO	MNO-3125/H	CU-1	0-10	DBTG	5.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F5	MONO	MNO-3125/H	CU-4	10-20	DBTG	5.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F9	MONO	MNO-3125/H	CU-4	20-30	DBTG	5.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
98-02-S1-(F15)20	MONO	MNO-3110		SUR	DBTG	5.50	0.00	BH	VIS	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S9-(F12)14	MONO	MNO-3117/H		SUR	DBTG	5.50	0.00	BH	VIS	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T3W-A7	MONO	MNO-3125/H	T3W/S200		FLKTL	5.50	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F15	MONO	MNO-3125/H	CU-1	10-20	DBTG	5.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F16	MONO	MNO-3125/H	CU-1	10-20	DBTG	5.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F9	MONO	MNO-3125/H	CU-8	0-10	DBTG	5.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
192	MONO	MNO-3133	1	D	DBTG	5.60	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
CU9-F16	MONO	MNO-3125/H	CU-9	10-20	DBTG	5.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F5	MONO	MNO-3125/H	CU-6	SURF	DBTG	5.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F8	MONO	MNO-3125/H	CU-1	0-10	DBTG	5.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F20	MONO	MNO-3125/H	CU-1	10-20	DBTG	5.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F12	MONO	MNO-3125/H	CU-4	20-30	DBTG	5.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU6-F18	MONO	MNO-3125/H	CU-6	30-40	DBTG	5.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
231	MONO	MNO-3149	1	D	DBTG	5.70	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
94	MONO	MNO-3181	2	D	DBTG	5.70	0.00	BH	XRF	313310	4185030		11	Volcanics	Latest Holocene Ash/Pumice	Cozetica family-Rock outcrop assication, 15 to 60 percent slopes
CU5-F11	MONO	MNO-3125/H	CU-5	0-10	DBTG	5.80	1.80	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T2W-A6	MONO	MNO-3125/H	T2W/S133.8		CORE	5.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F17	MONO	MNO-3125/H	CU-1	10-20	DBTG	5.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
283	MONO	MNO-0692/H	1	D	DBTG	5.80	0.00	BH	XRF	286560	4248540		11	Older Pleist.	Older Pleist	Murain-Shorthike association
CU9-F13	MONO	MNO-3125/H	CU-9	10-20	DBTG	5.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
CU6-F19	MONO	MNO-3125/H	CU-6	30-40	DBTG	5.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU7-A2	MONO	MNO-3125/H	CU-7	SURFACE	FLKTL	5.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F14	MONO	MNO-3125/H	CU-8	10-20	DBTG	5.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
231	MONO	MNO-3149	1	C	DBTG	5.90	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
215	MONO	MNO-3148	1		PRJPT	6.00	0.00	BH	XRF	308510	4225260		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
231	MONO	MNO-3149	1	G	DBTG	6.00	0.00	BH	XRF	308550	4225110		11	Older Pleist	Older Pleist	MARTIS-EUER-INVILLE (CA854)
CU6-F7	MONO	MNO-3125/H	CU-6	0-10	DBTG	6.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F5	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	6.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
L-607A	MONO	MNO-0446	SQUARE-7	110-120	DBTG	6.10	0.00	BH	XRF	313134	4201299	83		Older Pleist.	Older Pleist	Wrango family-Torriorthentic Haploxerolls complex, 15 to 30 percent slopes.
CU3-F8	MONO	MNO-3125/H	CU-3	0-10	DBTG	6.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F15	MONO	MNO-3125/H	CU-9	10-20	DBTG	6.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F19	MONO	MNO-3125/H	CU-1	10-20	DBTG	6.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
192	MONO	MNO-3133	1	I	DBTG	6.30	0.00	BH	XRF	307170	4246540		11	Historic-Modern	Hist-Mod	Aquic Torrifluvents-Torrifluventic Haploxerolls-Conway complex, 0 to 8 percent slopes
98-02-S1-A4	MONO	MNO-3110		SUR	PRJPT	6.40	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
98-02-S1-(F3)20	MONO	MNO-3110		SUR	DBTG	6.40	0.00	BH	XRF	306440	4234730		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
T3W-A5	MONO	MNO-3125/H	T3W/S92.5		FLKTL	6.40	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T2W-A2	MONO	MNO-3125/H	T2W/S0M		CORE	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T4E-A2	MONO	MNO-3125/H	T4E/S130.0		BIF	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T5E-A1	MONO	MNO-3125/H	T5E/S75.0		CORE	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU3-F3	MONO	MNO-3125/H	CU-3	SURF	DBTG	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F3	MONO	MNO-3125/H	CU-4	10-20	DBTG	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F9	MONO	MNO-3125/H	CU-9	10-20	DBTG	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F11	MONO	MNO-3125/H	CU-9	10-20	DBTG	6.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F11	MONO	MNO-3125/H	CU-8	0-10	DBTG	6.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-A1	MONO	MNO-3125/H	CU-9	SURFACE	CORE	6.60	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A3	MONO	MNO-3125/H	T1W/S58.0		BIF	6.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F14	MONO	MNO-3125/H	CU-9	10-20	DBTG	7.00	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A4	MONO	MNO-3125/H	T1W/S84.0		BIF	7.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A5	MONO	MNO-3125/H	T1W/S94.5		BIF	7.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1E-A3	MONO	MNO-3125/H	T1E/S148.8		BIF	7.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T6E-A2	MONO	MNO-3125/H	T6E/S261.0		CORE	7.10	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU3-A1	MONO	MNO-3125/H	CU-3	0-10	CORE	7.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-A3	MONO	MNO-3125/H	CU-8	0-10	FLKTL	7.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F4	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	7.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T2W-A1	MONO	MNO-3125/H	T2W/S0M		FLKTL	7.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1E-A2	MONO	MNO-3125/H	T1E/S107.6		BIF	7.20	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F2	MONO	MNO-3125/H	CU-1	SURF	DBTG	7.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F9	MONO	MNO-3125/H	CU-1	0-10	DBTG	7.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A3	MONO	MNO-3125/H	CU-4	SURF	FLKTL	7.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A7	MONO	MNO-3125/H	CU-4	0-10	FLKTL	7.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-A2	MONO	MNO-3125/H	CU-8	SURFACE	FLKTL	7.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU3-F4	MONO	MNO-3125/H	CU-3	SURF	DBTG	7.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A9	MONO	MNO-3125/H	CU-4	0-10	FLKTL	7.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F6	MONO	MNO-3125/H	CU-4	10-20	DBTG	7.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F2	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	7.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T3W-A1	MONO	MNO-3125/H	T3W/ S19.8		BIF	7.40	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F8	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	7.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F16	MONO	MNO-3125/H	CU-9	10-20	DBTG	7.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T3W-A3	MONO	MNO-3125/H	T3W/S29.1		FLKTL	7.50	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A1	MONO	MNO-3125/H	CU-4	SURF	CORE	7.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F2	MONO	MNO-3125/H	CU-4	0-10	DBTG	7.50	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
TO-A2	MONO	MNO-3125/H	TO/S155.5		BIF	7.70	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1E-A1	MONO	MNO-3125/H	T1E/S101.5		BIF	7.70	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F10	MONO	MNO-3125/H	CU-8	0-10	DBTG	7.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU7-A1	MONO	MNO-3125/H	CU-7	SURFACE	CORE	7.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)

Appendix D. Bodie Hills Obsidian Database

Catno	County	Siteno	Unit	Level CM	Name1	Band 1	Band 2	Source	Group source	UTM E	UTM N	NAD	Zone	age1	age2	muname
CU7-A3	MONO	MNO-3125/H	CU-7	SURFACE	FLKTL	7.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T2W-A3	MONO	MNO-3125/H	T2W/S13.5		BIF	7.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU7-A4	MONO	MNO-3125/H	CU-7	0-10	FLKTL	7.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU7-A5	MONO	MNO-3125/H	CU-7	0-10	FLKTL	7.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F16	MONO	MNO-3125/H	CU-8	10-20	DBTG	7.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F7	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	7.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-A4	MONO	MNO-3125/H	CU-9	0-10	CORE	7.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F13	MONO	MNO-3125/H	CU-8	10-20	DBTG	8.00	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T5E-A2	MONO	MNO-3125/H	T5E/S116.0		PRJPT	8.10	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-A4	MONO	MNO-3125/H	CU-8	0-10	FLKTL	8.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A4	MONO	MNO-3125/H	CU-4	SURF	FLKTL	8.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A5	MONO	MNO-3125/H	CU-4	SURF	FLKTL	8.20	1.50	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F5	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	8.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A7	MONO	MNO-3125/H	T1W/S243.0		BIF	8.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T2W-A5	MONO	MNO-3125/H	T2W/S86.0		FLKTL	8.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A2	MONO	MNO-3125/H	T1W/S26.0		BIF	8.40	0.00	BH	XRF	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
T1W-A6	MONO	MNO-3125/H	T1W/S149.0		BIF	8.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F12	MONO	MNO-3125/H	CU-9	10-20	DBTG	8.40	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F2	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	8.70	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
98-02-S9-A5	MONO	MNO-3117/H		SUR	BIF	8.80	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU1-F3	MONO	MNO-3125/H	CU-1	SURF	DBTG	8.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-F1	MONO	MNO-3125/H	CU-4	SURF	DBTG	8.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A6	MONO	MNO-3125/H	CU-4	0-10	FLKTL	8.80	1.80	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F1	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	8.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F3	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	8.80	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU3-F9	MONO	MNO-3125/H	CU-3	0-10	DBTG	8.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU4-A8	MONO	MNO-3125/H	CU-4	0-10	FLKTL	8.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F4	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	8.90	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-F6	MONO	MNO-3125/H	CU-9	SURFACE	DBTG	9.00	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU1-F10	MONO	MNO-3125/H	CU-1	0-10	DBTG	9.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F1	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	9.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU8-F3	MONO	MNO-3125/H	CU-8	SURFACE	DBTG	9.10	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
CU9-A2	MONO	MNO-3125/H	CU-9	SURFACE	FLKTL	9.30	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)
98-02-S9-(F8)14	MONO	MNO-3117/H		SUR	DBTG	11.70	0.00	BH	XRF	306885	4235650		11	pre-Quat	pre-Quat	BULAKE FAMILY-WASSIT-BRAWLEY (CA777)
CU5-F13	MONO	MNO-3125/H	CU-5	0-10	DBTG	14.20	0.00	BH	VIS	305770	4237230		11	Holocene	latest-Holo	RAMELLI-BECKWOURTH-LOYALTON (CA165)

APPENDIX E

EXTENT OF BURIED SITE POTENTIAL ALONG EACH STATE ROUTE IN DISTRICT 6/9 BASED ON LANDFORM MAP AND PREDICTIVE MODEL

WEIGHTS OF EVIDENCE ANALYTICAL APPROACH

Weights-of-evidence is one of several quantitative methods for assessing relationships between occurrences of a phenomenon and a series of predictor variables. The method was originally applied to medical diagnosis, but later expanded to spatial applications such as mineral exploration, fossil packrat-midden distributions, and archaeological site locations (Bonham-Carter et al. 1988, 1989; also see Agterberg et al. 1990; Bonham-Carter 1994; King 2004; Mensing et al. 1999; West et al. 2000). In spatial applications, the known occurrences of the phenomenon under study take the form of a set of point locations ("training points"), and the predictor variables take the form of thematic maps ("evidential themes"), usually reduced to binary patterns (i.e., presence/absence of an attribute). In the case of archaeological sensitivity, then, the training points would be known site locations, and the evidential themes would be environmental variables that are thought to influence site location, such as slope, distance to water, etc.

The set of training points is compared against each of the evidential themes, and a coefficient or weight assigned to each pattern in the theme according to how frequently the points are found to occur within and outside that pattern. Two weight values are assigned, an in-pattern weight (W+) and an out-of-pattern weight (W-). A high W+ value indicates a strong association between the occurrence of training points and areas within a pattern, while a strongly negative W- value conversely indicates a paucity of training points in out-of-pattern areas. The difference between these values is known as the contrast, and measures the overall strength of correlation between the pattern and the distribution of training points. Contrast values between 0 and 0.5 are weakly predictive; values between 0.5 and 1 are moderately predictive; and values greater than 1 are strongly predictive. Often, a pattern may show a W+ value close to zero, but have strongly negative W- values and thus a high contrast value overall. This indicates that in-pattern areas are not a strong predictor of the presence of training points, but that out-of-pattern areas are strongly associated with a relative lack of training points. Conversely, high contrast values can also result from a high W+ value coupled with a W- value close to zero. This indicates that in-pattern areas are a good predictor of the presence of training points but that out-of-pattern areas are not strongly associated with an absence of training points. The overall confidence in a contrast value can be reported by dividing by its standard deviation.

The method then compares the overall pattern of weights in a number of evidential themes through an application of the Bayes Rule, in which the prior probability, or the expectation of finding a training point in a given area under the expectation of randomness, is modified to produce a posterior probability. This is done by finding the set of unique conditions (i.e., every possible combination of binary patterns included in the analysis), and applying the weights from each of the evidential themes to each unique condition. For example, if two binary patterns were included in the analysis, then there would be four (2 x 2 = 4) unique conditions; if three binary patterns were included, then there would be eight (2 x 2 x 2 = 8). When the posterior probabilities associated with each unique condition have been calculated, a "response theme" depicting the spatial distribution of these probability values is produced. These probability values can then be reclassified into a more intuitively understandable map.

Weights-of-evidence modeling has the advantage over other multivariate methods (e.g., weighted logistic regression) of being able to take areas of missing data into consideration, and hence to expand the weights generated by data from a small area into a larger region (Agterberg et al. 1993). However, unlike other methods, it requires that each evidential theme be conditionally independent; this assumption can be evaluated through a standard chi-square test.

Archaeological sites are usually found in the context of a survey, which also generates negative evidence in the sense that it identifies large areas that are not archaeological sites. If one fails to account for this, sampling biases may affect the result. One approach to this problem is to conduct the initial study on surveyed areas only, and then extrapolate the analysis to the region as a whole.

While weights-of-evidence modeling can be a useful tool for archaeologists, several important caveats must be borne in mind. The quality of data available for modeling exercises can be highly

variable, in terms of both survey and site recordation. Reducing the complexities of this necessarily incomplete record to a series of training points involves a great deal of simplification. Even setting aside the question of data quality, archaeological sites do not reduce easily to training points, because they represent a wide range of different patterns of prehistoric land use, each of which may have been influenced by a different set of environmental conditions. Finally, it should be kept in mind that the evidential themes employed in any model are simply the ones that the researcher deems relevant (or possible to re-produce), and cannot ever fully represent the entire range of conditions influencing prehistoric land use. The evidential themes themselves may be highly interpretive in nature; e.g., a distance-to-water theme necessarily builds on a researcher's decision about what constitutes a source of water. Ultimately, it is up to the archaeologist to keep in mind the limitations of the datasets used to generate these types of models, and to recognize that the building of such models is an exploratory, iterative process that should be tested and refined as new information comes in.

METHODS

The analysis comprised several major components: 1) development of evidential themes; 2) compilation of a training-point theme (site locations); and 3) weights calculations and model building. Each of these is discussed in detail below. All analyses were carried out using ESRI ArcMap 9.3 and the Spatial Analyst extension; weights and modeling runs were performed using the Spatial Data Modeler Extension 3.1.76, which automates many of the tasks involved. All GIS datasets were saved as standard ESRI grids or shapefiles.

A few additional cautionary notes are in order. First, this model is intended to identify high-sensitivity areas on a local scale. Regional effects on site density have not been incorporated in this model, and are beyond the scope of this project. Second, this model is only as good as the input data. We assume the quality and distribution of the survey data to vary randomly, but this likely is not the case. Although we control for survey area, some bias may be introduced as a result of the low number of samples in some areas.

Development of Evidential Themes

The evidential themes for this analysis include slope, hydrology, distance to water, vegetation cover, precipitation, elevation, SSURGO Storie Index value and landform age.

Elevation and Slope

A digital elevation model (DEM) was acquired from the Shuttle Radar Tomography Mission. This dataset had 90 meters resolution and was processed by CGIAR to fill data voids. It was projected into the California Teale Albers (NAD 83) coordinate system used throughout this modeling task. This elevation dataset was used as a basis for derived datasets, including cost models and slope. Elevation was classified into 250 meter increments for analysis.

Slope was calculated from the DEM using the standard ArcMap routine. The resulting slope grid was then averaged over a 90-meter radius, and classified into six groups for further analysis, with the following, roughly logarithmic breaks in degree value: 0.5, 0.8, 1.5, 2.5, 4, 6, 10, 15, and 25.

Hydrology

Surface hydrology and spring locations were modeled using USGS National Hydrography Dataset (NHD) high-resolution data, which were digitized from 1:24,000 scale USGS quadrangles (US Geological Survey 1999b). These data include attribute codes distinguishing artificial features from natural ones and perennial streams from intermittent ones. Also, the drainage paths of selected historic streams and lakes were imported or digitized from historic maps (US Fish and Wildlife Service 1998; Grunsky 1898).

The hydrology layers that we built were used to examine various aspects of the role of water in site location. We generated a Euclidean distance to each of several hydrologic types (spring, lakes, streams, streams classified by Stahler order) as well as all permanent water sources. The same distance measurement classifications were used for each analyzed type: 500, 1,000, 1,500, 2,000, 3,500, 5,000, and 10,000 meters.

Landform Age

Landform age was based on the Quaternary geology layer developed for the project from SSURGO and STATSGO digital soils datasets. Age classes included Historical to Modern, Latest Holocene, Late Holocene, Middle Holocene, Early Holocene, Latest Pleistocene, Older Pleistocene, and Pre-Quaternary.

Storie Index

Soils data compiled from the SSURGO database was classified by Storie Index value. The Storie index value is a measure of soil productivity which could serve as a proxy for relative resource productivity. The index value ranges from 1-100. However, the SSURGO database is not consistent across the entire model area, so some places with SSURGO data were not able to be classified. Therefore, the final class breaks were ten percent increments with the addition of a "No Data" class.

Vegetation

We built a prehistoric habitat type map based on the best available vegetation maps. We identified four sources of suitable vegetation data (Table 1). These four data layers were ranked (Table 1) and, when combined, vegetation types from higher ranked layers supplanted lower ranked vegetation types. We normalized vegetation types using existing relationships between two elements of classification systems (California Wildlife Habitat Relationship "crosswalks"), vegetation type descriptions, and expert knowledge. The historic vegetation types in the Central Valley, Bay Atlas, and Küchler layers were reassigned to the closest Wildlife Habitat Relationships vegetation type. These vegetation types were the classes for our weights of evidence analysis.

Table 1. Sources and Ranking for Vegetation Data.

LAYER NAME	SOURCE	RANK	EXTENT
Central Valley Habitats	Chico State	1	Sacramento and San Joaquin Valleys
Bay Atlas Vegetation	Bay Atlas/Far Western	2	San Francisco Bay Area
Modern Vegetation	Fire and Resource Assessment Program/ United States Forest Service	3	California
Küchler Vegetation	Küchler 1977	4	California

Precipitation

Average annual precipitation data for the years 1971 to 2000 was acquired from the USDA PRISM program (USDA 2006). We reclassified the higher precipitation range values in the PRISM dataset into ten classes for the project area: 5, 7, 9, 11, 14, 18, 24, 34, 47, and 67 inches.

Training Points – Archaeological Sites and Survey Coverage

In order to generate the training points for the analysis, we relied on the record search sites and initial survey results associated with the TEA project. Therefore, all sites were included in the analysis, not just those located during systematic surveys. The record search extent served as a proxy for the survey extent. The survey extent totaled 279,769 acres (0.39 % of the project area). The record search contained 1,363 prehistoric sites (Table 2).

Table 2. Prehistoric Site Count and Survey Extent.

REGION	SITES	MODEL AREA
Sierra Foothills	215	38,153 acres (0.67 %)
Sierra	246	31,089 acres (0.27 %)
Great Valley	66	71,581 acres (0.58 %)
Mono	488	53,009 acres (0.83 %)
Mojave	327	61,227 acres (0.22 %)
Central Coast	21	24,710 acres (0.31 %)
TOTAL	1,363	279,769 acres (0.39 %)

Stratification

Due to the large spatial extent and varied geography of the project area we initially stratified training points by geographic region based on the "Sections" within Bailey's Ecoregions and Subregions of the United States (USFS 2004). A small portion of Kern County was not included in any analyitical strata since it is part of the Southern California Mountains and Valleys Section, but had no sites or survey extent (Figure 1).

Weights Calculation and Model Building

The finished training-point theme was used to assess the predictive potential of each of the evidential themes discussed above via a series of calculations of weights of evidence. Prior to building the model, we had to define the "unit area," which is the space that one training point is assumed to occupy. All weights were calculated using an 810-square-meter unit area and were calculated only for surveyed areas to avoid sampling bias.

An initial weights calculation was performed on each layer to generate contrast values and confidence estimates. These metrics were examined to identify break points to create binary patterns that would maximize contrast between in-pattern and out-of-pattern areas. Weights for those binary patterns were then calculated.

A last step before creating the final model was to check for correlation between input layers. Layers found to be correlated were examined and only the layer with the greater discriminatory ability was used in the final model. When binary-weights calculations were complete, an overall response theme was calculated using the weights calculated for the surveyed areas to extrapolate to the region as a whole.

Results

Initial analysis indicated several trends between site locations and environmental themes (Table 3). We generated binary layers for model building for each stratum and evaluated these for goodness of fit. In general, final models were poor and often consisted of one or two layers with poor discriminatory power. We pursued several alternatives for model building, including combining strata, modifying classifications and hand picking evidential themes; however we were not able to build satisfactory models. We attribute our model building problems to three main issues. First, we violated one assumption of weights of evidence analysis by not having complete survey coverage, therefore our "negative" survey extent may not have actually been without sites. Similarly, we violated the assumption that sites were located as a result of systematic survey. Finally, our survey coverage and site location are inherently biased since they are based on proximity to highways which are not randomly distributed across the landscape.

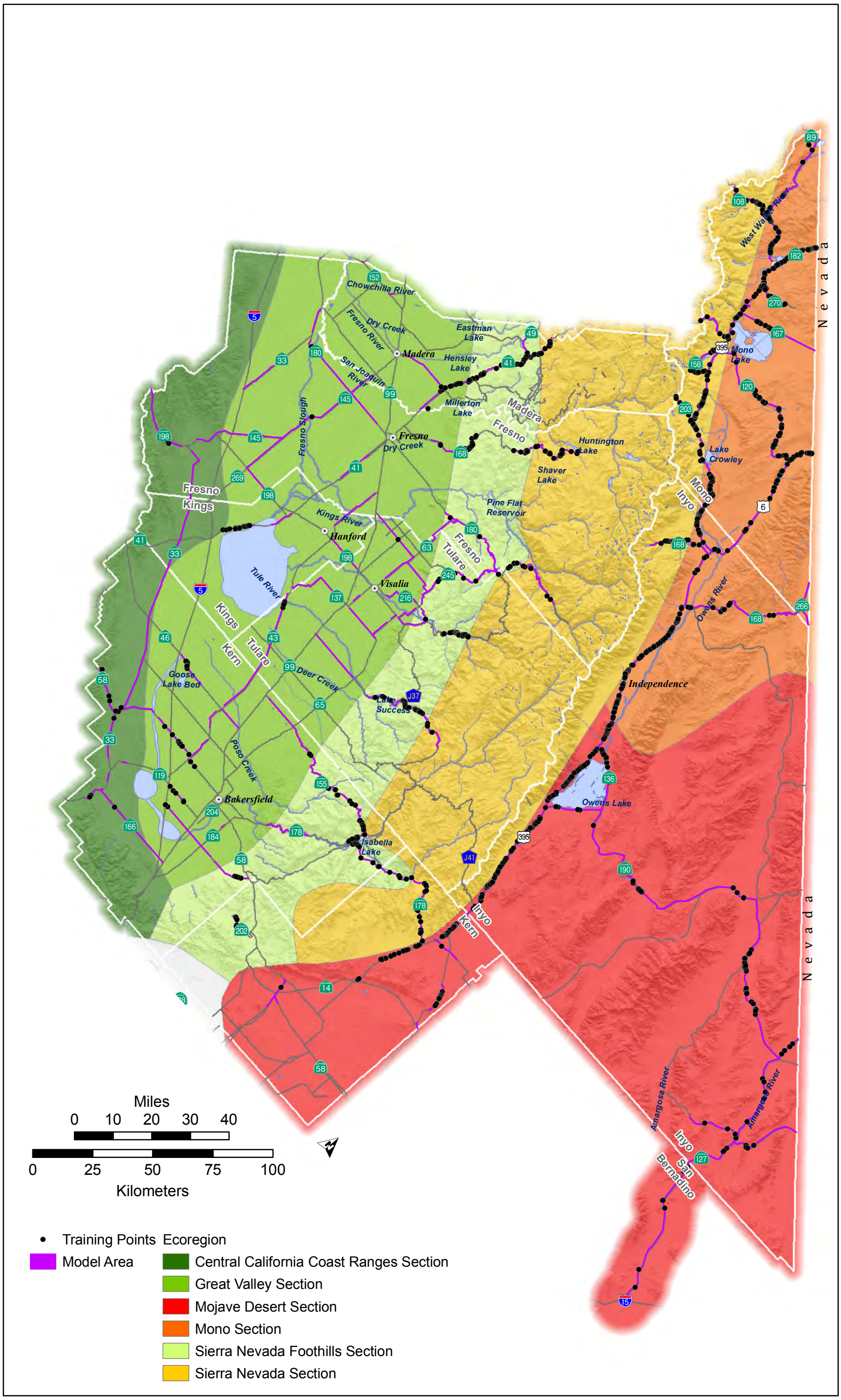


Figure 1. Model Extent and Model Strata.

Table 3. Preliminary Modeled Trends for Environmental Themes.

	Vegetation		Stream Order		Perm. Water		Streams		Springs		Lakes		Storie Index		Soil Age		Slope		Precipitation		Elevation	
	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment	Contrast	Comment
Sierra Foothills	~		-	Negative contrast with high stream order	~		~		-	Negative contrast close to springs	~		-	Negative contrast with unclassified soils	+	Positive contrast with pre-quat	~		-	Negative contrast with low precip zones	~	
Sierra	+	Positive with herbaceous	~		-	Negative contrast within 5,000 m	+	Positive contrast within 500 m	~		-	Negative for within 500	~		-+	Negative for pre-quat; positive for latest-Pleist	+	Increasing positive up to 25%	+	Positive contrast for 0-47	-	Negative contrast for 1250 to 2,000
Great Valley	-+	Negative for herbaceous; positive for desert shrub	++	Positive for highest 2 classes	++	Positive within 1,500 m	+	Positive contrast within 500 m	++	Positive contrast within 3,500 m	++	Positive contrast within 1,500 m	++	Positive for 50-90	+	Positive for pre-quat	-	Negative contrast with low slope	+	Positive for lowest class	-	Negative contrast for 0 to 250
Mono	+	Positive with herbaceous	~		++	Positive contrast within 1,500 m	++	Positive contrast within 1,500 m	++	Positive contrast within 3,500 m	~		~	None			-	Negative contrast with low slope	-	Negative contrast with low precip zone	-	Negative contrast for 1,250 – 1,750
Mojave	~		-	Negative contrast with low stream order	++	Positive contrast within 1,500 m ; positive could continue to 10 km	++	Positive contrast within 2,000 m	~		++	Positive contrast within 2,000 m	~		+	Positive contrast with Hist-Mod and latest-holo; negative with older-pleist, late-holo, early-holo	~		-	Negative contrast for lowest precip class	-+	Negative contrast within 1,000; positive contrast with 1,000 – 1,500
Central Coast	-	Negative for herbaceous	-	Negative contrast with low stream order	+	Positive contrast within 5,000 m	++	Positive contrast within 3,500 m	++	Positive contrast within 3,500 m	~		+		+		+	Negative contrast with low slope	-	Negative contrast for lowest precip class	~	

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Appendix E. Total Acres of Buried Site Potential along each State Route in Districts 6 and 9
Based on Landform Map Units

Buried Potential	Very Low (-1, or 0)	Very Low (-1, or 0)	Very Low (-1, or 0)	Very Low (-1, or 0)	Low (1)	Moderately Low (2)	Low (1)	Very Low (-1, or 0)	Very Low (-1, or 0)	VL to ML	Moderate (3)	Moderate (3)	Moderate (3)	Moderate	Total High (4)	Grand Total	Percent of
State Route	*Pre-Quaternary*	*Older Pleistocene*	*Late Pleistocene*	*Latest Pleistocene*	*Early Holocene*	*Middle Holocene*	*Historical and Modern*	*Artificial Cut and Fill*	*Water*	*Total (-1, or 0)*	*Holocene Volcanic (undivided)*	*Late Holocene*	*Latest Holocene Volcanic*	*Total (3)*	*Latest Holocene*	Acres	All Roads
ALP-089	0.04									0.04						0.04	0.0001%
FRE-005	0.01	96.37		293.73		32.09				422.20		34.39		34.39	595.31	1,051.90	3.9%
FRE-033	59.62			15.88				0.05	0.33	75.87		253.34		253.34	241.89	571.10	2.1%
FRE-041		131.47	8.70		24.62		29.96		0.11	194.87		74.43		74.43	136.41	405.71	1.5%
FRE-043					6.44	7.91	3.91		0.21	18.46		26.53		26.53	34.55	79.55	0.3%
FRE-063	26.05	23.88			2.02		0.57			52.51					13.93	66.44	0.2%
FRE-099		135.31	2.35		21.62		17.11	1.31	0.43	178.12		107.53		107.53	197.34	482.98	1.8%
FRE-145		3.82	34.72	8.37	12.39		14.08	0.40	0.35	74.12		170.45		170.45	85.34	329.91	1.2%
FRE-168	366.58	103.19	69.87		15.32	1.55	15.27		1.71	573.50					61.61	635.11	2.3%
FRE-180	403.22	146.51	51.68		124.16	3.44	32.87	0.70	1.34	763.93		69.83		69.83	159.48	993.24	3.6%
FRE-198	97.68	37.53		32.98	1.74				0.33	170.27		2.79		2.79	164.80	337.86	1.2%
FRE-201					0.24		0.16			0.40		4.45		4.45	5.29	10.14	0.0%
FRE-245	69.76									69.76						69.76	0.3%
FRE-269				3.71					0.30	4.02		23.70		23.70	169.51	197.23	0.7%
INY-006			9.10		32.02		1.62			42.74		12.57		12.57	10.10	65.41	0.2%
INY-127	4.52	159.43			41.15					205.11		184.47		184.47		389.57	1.4%
INY-136	0.50		7.13		10.02	6.59	3.20			27.44		91.90		91.90	20.34	139.67	0.5%
INY-168	160.81	49.67	48.23		18.04	6.17	2.12			285.04		39.59		39.59	105.09	429.72	1.6%
INY-178	26.59	126.86			20.29					173.74		97.09		97.09		270.84	1.0%
INY-190	174.04	135.62			312.37	18.61	40.03			680.68		223.58		223.58	132.61	1,036.87	3.8%
INY-395	66.40	134.64	63.13		156.75	246.86	8.22			675.99		157.13		157.13	370.89	1,204.01	4.4%
KER-005	68.94	34.17	10.22	462.81	34.71		24.80		0.35	636.00					746.86	1,382.86	5.1%
KER-014	60.99	76.40			70.52					207.91		62.89		62.89	388.65	659.44	2.4%
KER-033	50.19	68.72		157.32			0.62	12.90	0.22	289.97		2.90		2.90	291.92	584.80	2.1%
KER-041	26.63			5.71						32.34		2.28		2.28	4.97	39.59	0.1%
KER-043		0.02		57.44			3.60			61.06					267.06	328.13	1.2%
KER-046		18.84		145.07					0.40	164.30		17.24		17.24	277.59	459.14	1.7%
KER-058	400.57	356.19	60.61	37.95			188.29	1.05	0.83	1,045.49		7.65		7.65	778.76	1,831.91	6.7%
KER-065		182.92		6.31			0.36			189.58					17.06	206.64	0.8%
KER-099		136.65		25.74	4.36		124.04	0.98	0.35	292.11		20.83		20.83	600.43	913.37	3.4%
KER-119		37.06		23.02			27.82	6.22	0.18	94.31		23.46		23.46	117.50	235.27	0.9%
KER-155	326.81	136.64	0.57				6.81	0.00	0.30	471.13					36.06	507.19	1.9%
KER-166				59.00					0.42	59.42		10.39		10.39	127.53	197.34	0.7%
KER-178	286.84	137.95	23.34				57.12	31.64	6.26	543.15		3.50		3.50	318.07	864.72	3.2%
KER-184		49.50					26.97		0.18	76.65		0.54		0.54	44.61	121.80	0.4%
KER-202	7.87	26.84					0.97			35.69					33.16	68.85	0.3%
KER-204							1.39	19.73	0.15	21.26					45.87	67.13	0.2%
KER-223	11.86			7.08	7.84		24.95			51.74		56.61		56.61	140.60	248.95	0.9%
KER-395	74.11									74.11		22.00		22.00	242.46	338.57	1.2%
KIN-005	188.88			51.13					0.50	240.50					183.96	424.46	1.6%
KIN-033	46.69	3.43						5.63		55.75					97.61	153.36	0.6%
KIN-041	88.07	21.83		1.86			0.59	7.23	1.50	121.07					317.15	438.22	1.6%
KIN-043				23.37	4.81		0.20	13.44	0.55	42.37					175.48	217.85	0.8%
KIN-137															16.76	16.76	0.1%
KIN-198			10.80	58.13	3.54		15.66	51.86	0.16	140.15					201.68	341.83	1.3%
KIN-269	28.39							8.28		36.67					7.79	44.46	0.2%
LA-005															0.00	0.00	0.0%
MAD-041	299.71	66.82	0.35		3.53	5.29	8.86	1.92	0.32	386.79		0.62		0.62	5.15	392.56	1.4%
MAD-049	73.06									73.06						73.06	0.3%
MAD-059			1.01			0.68				1.69						1.69	0.0%

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State Route	*Pre-Quaternary*	*Older Pleistocene*	*Late Pleistocene*	*Latest Pleistocene*	*Early Holocene*	*Middle Holocene*	*Historical and Modern*	*Artificial Cut and Fill*	*Water*	*Total (-1, or 0)*	*Holocene Volcanic (undivided)*	*Late Holocene*	*Latest Holocene Volcanic*	*Total (3)*	*Latest Holocene*	Acres	All Roads
MAD-099		213.40	21.93		27.92	30.15	26.21		1.59	321.20					136.13	457.32	1.7%
MAD-145	9.85	81.99	1.10		5.53	24.04	11.63		0.91	135.04					68.86	203.91	0.7%
MAD-152		32.16	32.13		32.52	2.77	41.02		0.23	140.83					76.92	217.75	0.8%
MAD-233		1.60	5.29		1.13		0.93			8.95					30.49	39.44	0.1%
MER-033															0.01	0.01	0.0%
MNO-006		20.77	20.04		44.83	23.63				109.27		65.66	18.60	84.25	62.77	256.30	0.9%
MNO-089	60.28									60.28						60.28	0.2%
MNO-108	42.45		68.40							110.85					5.87	116.72	0.4%
MNO-120	73.13	17.28	8.47		1.78		1.74		0.50	102.90	1.03	77.44	252.68	331.15	21.59	455.65	1.7%
MNO-158	15.06	26.40	9.71				0.52		0.29	51.99		3.89	29.97	33.86	39.93	125.78	0.5%
MNO-167			11.82				0.86			12.69			156.73	156.73		169.42	0.6%
MNO-168						12.19				12.19						12.19	0.0%
MNO-182	19.41		22.91				22.49			64.81					35.54	100.35	0.4%
MNO-203	4.12		23.97							28.10	3.84		40.70	44.54		72.64	0.3%
MNO-266						64.39				64.39		28.76		28.76		93.15	0.3%
MNO-270	77.81									77.81						77.81	0.3%
MNO-395	196.26	185.50	149.19				12.91	0.15	8.21	552.22	0.81	81.79	240.18	322.78	130.13	1,005.13	3.7%
MPA-049	0.17									0.17						0.17	0.0%
SBD-127	16.18		100.27		213.68					330.13		2.47		2.47		332.60	1.2%
SBD-178															0.07	0.07	0.0003%
SLO-046												0.001		0.001		0.001	0.0000%
SLO-058	0.00									0.00						0.00	0.0%
TUL-043				64.35			2.01			66.36					111.80	178.15	0.7%
TUL-063	0.49	75.61	37.90		6.89	34.35	2.44		0.15	157.83					136.37	294.20	1.1%
TUL-065		307.98	11.40		15.95		23.36		1.61	360.30					48.06	408.36	1.5%
TUL-099			130.20	15.80	240.82	151.15	6.11	0.02		544.12					301.73	845.85	3.1%
TUL-137		5.84	29.33		116.77		6.66			158.59					67.48	226.07	0.8%
TUL-180	10.01									10.01						10.01	0.0%
TUL-190	223.94	46.12	9.26		6.70	46.41	38.02	1.92	2.42	374.79		1.58		1.58	93.57	469.94	1.7%
TUL-198	114.32	79.67			16.02	50.18	10.60		1.07	271.85					196.69	468.54	1.7%
TUL-201	4.52	89.45	16.26		25.31		0.71		0.15	136.40					54.34	190.74	0.7%
TUL-216	6.38	76.82	0.43			1.27	4.83		0.92	90.65					60.09	150.73	0.6%
TUL-245	115.44	84.35					7.43		0.79	208.02					55.66	263.68	1.0%
Total Acres	4,485.3	3,983.2	1,111.8	1,556.8	1,684.3	769.7	902.7	165.4	36.6	14,695.8	5.7	2,066.3	738.9	2,810.8	9,723.3	27,230.0	1.0
% of All Roads	16.5%	14.6%	4.1%	5.7%	6.2%	2.8%	3.3%	0.6%	0.1%	54.0%	0.02%	7.6%	2.7%	10.3%	35.7%	100.0%	

Notes: VL to ML – Very low to moderately low; Areas calculated using a 10-meter (32.8-foot) buffer along each side of each roadway, or a total width of 60 meters (65.6 feet).

Appendix E. Total Acres of Buried Site Potential along each State Route in Districts 6 and 9
Based on Predictive Model

Buried Potential State Route	Very Low *0 to -3*	Low *1*	Moderately Low *2*	VL to ML *Total (-1 to 2)*	Moderate *3*	Moderately High *4*	High *5*	Very High *6*	MH to VH *4 to 6*	Grand Total Acres	Percent of All Roads
ALP-089	0.1			0.1						0.1	0.0%
FRE-005	303.8	40.2	113.8	457.8	452.0			142.1	142.1	1052.0	3.9%
FRE-033	63.1	14.6	50.4	128.1	173.2		202.0	67.8	269.8	571.1	2.1%
FRE-041	156.0	5.8	65.5	227.3	144.7		7.8	25.8	33.7	405.7	1.5%
FRE-043	–		13.2	13.2	41.8	8.0	12.2	4.5	24.6	79.5	0.3%
FRE-063	36.2	13.2		49.4	5.4			11.7	11.7	66.4	0.2%
FRE-099	176.3	1.1	105.4	282.8	143.4		1.5	55.2	56.8	483.0	1.8%
FRE-145	20.4	33.5	119.5	173.4	79.0	0.2	46.4	30.9	77.5	329.9	1.2%
FRE-168	418.8	150.4	0.2	569.4	54.1	1.7		9.9	11.6	635.1	2.3%
FRE-180	584.0	92.0	56.6	732.5	206.0		18.8	35.9	54.7	993.2	3.6%
FRE-198	86.2	71.5	10.9	168.6	109.5		12.1	47.6	59.7	337.8	1.2%
FRE-201	–				0.0		4.4	5.7	10.1	10.1	0.0%
FRE-245	50.7	18.5		69.1	0.0			0.6	0.6	69.8	0.3%
FRE-269	4.0		23.6	27.6	166.0			3.6	3.6	197.2	0.7%
INY-006	30.1	3.6	12.6	46.3	11.3			7.8	7.8	65.4	0.2%
INY-127	3.7	159.4	73.9	237.1	41.5		111.1		111.1	389.6	1.4%
INY-136	–	8.9		8.9	13.8	13.5	84.3	19.2	116.9	139.7	0.5%
INY-168	154.2	110.7	9.2	274.2	52.6		34.9	68.0	102.9	429.7	1.6%
INY-178	116.7	45.9	61.2	223.8	10.9		36.1		36.1	270.8	1.0%
INY-190	443.0	104.0	116.4	663.5	202.8	18.1	94.0	58.6	170.7	1036.9	3.8%
INY-395	90.8	233.2	26.1	350.0	234.7	218.1	131.3	269.8	619.2	1204.0	4.4%
KER-005	166.5	23.9	398.9	589.3	336.2			456.9	456.9	1382.4	5.1%
KER-014	85.3	70.1	13.7	169.1	188.1	0.2	67.2	235.0	302.4	659.5	2.4%
KER-033	156.5	48.4	84.5	289.4	185.4		2.9	107.3	110.1	584.9	2.1%
KER-041	9.9	16.7	4.8	31.4	3.4		2.6	2.0	4.5	39.4	0.1%
KER-043	58.6			58.6	212.9			56.7	56.7	328.1	1.2%
KER-046	50.5	4.1	109.9	164.5	208.5		16.0	69.9	85.9	458.9	1.7%
KER-058	717.1	226.8	52.1	996.0	448.9		2.6	383.7	386.3	1831.2	6.7%
KER-065	143.0	46.7		189.7	8.2			8.7	8.7	206.6	0.8%
KER-099	160.8	4.0	1.8	166.6	455.9		21.4	269.5	290.9	913.4	3.4%
KER-119	4.5	38.6	18.7	61.8	42.2		21.2	110.1	131.3	235.3	0.9%
KER-155	275.8	194.1	0.4	470.3	27.8		1.6	7.5	9.1	507.2	1.9%
KER-166	52.8		12.7	65.5	31.2		4.5	96.1	100.6	197.3	0.7%
KER-178	192.2	291.1	17.3	500.6	92.3		8.2	263.6	271.8	864.7	3.2%
KER-184	47.4	8.0		55.4	58.5		0.3	7.6	7.9	121.8	0.4%
KER-202	30.0	6.3	0.2	36.5	13.7		0.7	18.0	18.7	68.8	0.3%
KER-204	–	20.5		20.5	1.5			45.1	45.1	67.1	0.2%

Appendix E. Total Acres of Buried Site Potential along each State Route in Districts 6 and 9
Based on Predictive Model

Buried Potential State Route	Very Low *0 to -3*	Low *1*	Moderately Low *2*	VL to ML *Total (-1 to 2)*	Moderate *3*	Moderately High *4*	High *5*	Very High *6*	MH to VH *4 to 6*	Grand Total Acres	Percent of All Roads
KER-223	10.1	3.2	51.4	64.7	81.7		14.4	88.0	102.5	248.9	0.9%
KER-395	62.1	12.0	16.4	90.5	180.4		5.6	62.2	67.7	338.6	1.2%
KIN-005	51.5	145.4	42.9	239.8	29.7	–	–	154.9	154.9	424.5	1.6%
KIN-033	53.8	2.2	–	56.0	94.2	–	–	3.1	3.1	153.4	0.6%
KIN-041	65.3	53.3	3.7	122.4	76.6	–	–	239.3	239.3	438.2	1.6%
KIN-043	–	11.2	24.0	35.2	5.1	–	–	177.5	177.5	217.8	0.8%
KIN-137	–	–	–	–	–	–	–	16.8	16.8	16.8	0.1%
KIN-198	23.9	30.2	59.6	113.6	58.8	–	–	169.4	169.4	341.8	1.3%
KIN-269	36.6	–	0.0	36.6	7.9	–	–	–	–	44.5	0.2%
MAD-041	241.1	133.0	–	374.1	9.6	0.9	0.4	6.8	8.1	391.8	1.4%
MAD-049	56.3	16.8	–	73.1	–	–	–	–	–	73.1	0.3%
MAD-059	–	1.0	–	1.0	–	0.2	–	0.0	0.3	1.2	0.0%
MAD-099	243.0	49.6	2.0	294.7	113.9	7.5	–	40.9	48.5	457.0	1.7%
MAD-145	75.7	37.6	1.4	114.7	43.7	12.2	–	33.3	45.5	203.9	0.7%
MAD-152	118.6	3.3	–	121.9	57.9	1.4	–	36.0	37.4	217.3	0.8%
MAD-233	8.8	–	–	8.8	30.6	–	–	–	–	39.4	0.1%
MER-033	–	–	–	–	0.0	–	–	–	–	0.0	0.0%
MNO-006	24.3	33.4	44.8	102.5	54.3	24.6	21.2	53.7	99.5	256.3	0.9%
MNO-089	60.3	–	–	60.3	–	–	–	–	–	60.3	0.2%
MNO-108	110.4	–	1.2	111.6	4.8	–	–	–	–	116.4	0.4%
MNO-120	67.9	31.5	5.5	104.9	89.4	–	78.6	182.6	261.2	455.5	1.7%
MNO-158	36.5	14.2	1.2	51.9	8.9	–	11.8	53.2	64.9	125.8	0.5%
MNO-167	11.7	–	–	11.7	32.3	–	–	125.3	125.3	169.3	0.6%
MNO-168	–	12.2	–	12.2	–	–	–	–	–	12.2	0.0%
MNO-182	65.0	–	–	65.0	35.4	–	–	–	–	100.4	0.4%
MNO-203	19.6	10.4	3.9	33.9	38.7	–	–	–	–	72.6	0.3%
MNO-266	–	64.9	28.3	93.2	–	–	–	–	–	93.2	0.3%
MNO-270	75.9	1.9	–	77.8	–	–	–	–	–	77.8	0.3%
MNO-395	436.5	104.5	17.8	558.9	237.7	1.7	86.3	120.3	208.3	1004.8	3.7%
MPA-049	0.2	–	–	0.2	–	–	–	–	–	0.2	0.0%
SBD-127	159.4	62.0	2.6	224.0	108.6	–	–	–	–	332.6	1.2%
SBD-178	–	–	–	–	–	–	–	0.1	0.1	0.1	0.0%
TUL-043	56.2	–	7.6	63.7	21.1	–	–	93.3	93.3	178.2	0.7%
TUL-063	86.0	36.0	0.2	122.3	24.3	34.8	–	112.9	147.7	294.2	1.1%
TUL-065	296.2	49.2	1.8	347.1	33.3	–	–	28.0	28.0	408.4	1.5%
TUL-099	118.0	185.2	3.7	306.9	389.7	51.5	–	97.8	149.3	845.8	3.1%
TUL-137	125.3	5.3	–	130.6	72.0	–	–	23.4	23.4	226.1	0.8%

Appendix E. Total Acres of Buried Site Potential along each State Route in Districts 6 and 9 Based on Predictive Model

Buried Potential State Route	Very Low *0 to -3*	Low *1*	Moderately Low *2*	VL to ML *Total (-1 to 2)*	Moderate *3*	Moderately High *4*	High *5*	Very High *6*	MH to VH *4 to 6*	Grand Total Acres	Percent of All Roads
TUL-180	10.0	–	–	10.0	–	–	–	–	–	10.0	0.0%
TUL-190	181.6	158.6	7.7	347.9	59.0	–	0.1	63.0	63.1	469.9	1.7%
TUL-198	84.3	110.7	3.3	198.3	32.2	49.1	–	188.9	238.0	468.5	1.7%
TUL-201	117.2	4.9	–	122.2	38.3	–	–	30.2	30.2	190.7	0.7%
TUL-216	1.7	82.4	1.3	85.4	4.3	1.4	0.4	59.2	61.0	150.7	0.6%
TUL-245	69.4	132.9	1.5	203.8	9.5	–	1.6	48.8	50.4	263.7	1.0%
Total Acres	8,149.7	3,704.5	1,907.1	13,761.4	6,541.5	445.1	1,166.6	5,311.2	6,922.9	27,225.8	1.0
% of All Roads	29.9%	13.6%	7.0%	50.5%	24.0%	1.6%	4.3%	19.5%	25.4%	100.0%	

Notes: VL to ML – Very Low to Moderately Low; MH to VH – Medium High to Very High; Areas calculated using a 10-meter (32.8-foot) buffer along each side of each roadway, or a total width of 60 meters (65.6 feet).

APPENDIX F

KNOWN BURIED PREHISTORIC ARCHAEOLOGICAL SITES IN CALTRANS DISTRICT 6/9

Appendix F. Known Buried Prehistoric Archaeological Sites in Caltrans District 6.

AREA AND/OR SITE NUMBER	DEPOSIT TYPE	MINIMUM DEPTH (CM)	MAXIMUM DEPTH (CM)	MINIMUM CAL BP	MAXIMUM CAL BP	SURFACE SOIL	BSP SCORE	REFERENCE
FRE, Los Gatos Creek Site	Buried soil	700	-	5269	-	Posochanet	6	Atwater et al. 1990
FRE, Riverdale Man	Buried deposit	200	-	339	-	Chino	6	Breschini et al. 1996
FRE-0257, Arroyo Hondo	Buried soil	320	440	970	1603	Cerini, Kimberlina	6	Bull 1964b; Meyer, Rosenthal, and Young (this study)
FRE-2365, Panoche Creek	Buried soil	52	195	449	1344	Mugatu	6	Milliken and Meyer 1997
KER-0116, Buena Vista Lake	Buried deposit	310	440	7738	8379	Kimberlina	6	Fredrickson and Grossman 1977
KER-0490, Rogers Lake	Buried soil/dune	18	55	599	768	Leuhman	3	Byrd 1996
KER-0500, Rogers Lake	Buried soil/dune	35	-	388	-	Leuhman	3	Byrd 1996
KER-0501, Rogers Lake	Buried soil/dune	35	65	1674	1852	Cajon	3	Byrd 1996
KER-1627	Buried soil	52	-	3119	-	Nahrub	3	Breschini et al. 1985
KER-2378, Rogers Lake	Buried soil/dune	25	38	607	849	Hi Vista	1	Byrd 1996
KER-3085, Elk Hills	Buried soil	123	-	1265	-	Kimberlina	6	Culleton et al. 2005
KER-3939, Clark Wash	Buried deposit	135	450	6375	7997	Arizo	6	Gardner et al. 2002
KIN-80, Tulare Basin	Buried soil	177	245	4954	8971	Wasco, Westcamp	6	Gardner et al. 2005; Meyer, Rosenthal, and Young (this study)
TUL-1052, Sunset Point	Buried soil	129	-	9081	-	Chaix	0	Dillon 1992

Notes: BSP – Buried site potential; 6 – Very High, 5 – High, 4 – Moderately High, 3 – Moderate, 2 – Moderately Low, 1 – Low, 0 – Very Low.

Appendix F. Known Buried Prehistoric Archaeological Sites in Caltrans District 9.

AREA AND/OR SITE NO.	DEPOSIT TYPE	MINIMUM DEPTH (CM)	MAXIMUM DEPTH (CM)	MINIMUM CAL BP	MAXIMUM CAL BP	SURFACE SOIL	BSP SCORE	REFERENCE
INY, Deep Springs Valley Site	Buried soil	182	-	1296	-	Veet	6	Ives et al. 1964; Lustig 1965
INY, Little Lake Site	Buried soil	75	150	1333	1355	Cartago	4	Mehringer and Sheppard 1974; Robinson and Trimble 1983
INY, Owens Valley, Hearth Gully	Buried soil	50	-	488	-	Yellowrock	5	Meyer, Rosenthal, and Young (this study)
INY-0182, Stahl Site	Buried deposit	55	165	604	10018	Rock outcrop	1	Schroth 1994
INY-0372, Rose Spring (Locus 1)	Buried soil	45	290	392	4328	Cartago	4	Berger and Libby 1967; Clewlow et al. 1970; Yohe 1992, 1998
INY-0444, Ray Cave	Buried deposit	115	-	3636	-	Cajon	6	Panlaqui 1974; Gilreath 2000
INY-1384/H	Buried deposit?	na	-	1657	-	Goodale	2	Faull 2006
INY-1991, Olanche/Cartago	Buried soil	125	-	6657	-	Cajon	6	Byrd and Hale 2003
INY-5084, Burro Canyon	Buried deposit	25	-	627	-	Cajon	1	Gilreath and King 2003
INY-5273/H	Buried deposit	65	70	399	461	Shondow	5	Zeanah and Leigh 2002
INY-5276	Buried deposit	57	141	3421	3636	Winerton	5	Zeanah and Leigh 2002
INY-5281	Buried soil	45	-	2628	-	Cartago	4	Zeanah and Leigh 2002
INY-5761, Independence	Buried deposit	92	93	1251	1383	Shabbell	3	Basgall et al. 2002
INY-5873/H	Buried soil	65	-	2015	-	Taboose	1	Zeanah and Leigh 2002
INY-5875	Buried deposit	33	45	180	172	Cartago	4	Zeanah and Leigh 2002
INY-5877	Buried soil	25	-	554	-	Taboose	1	Zeanah and Leigh 2002
INY-5967, Olanche/Cartago	Buried soil	75	75	1488	1650	Arizo	6	Byrd and Hale 2003
INY-6021, Olanche/Cartago	Buried soil	65	95	1405	1972	Arizo	6	Byrd and Hale 2003
MNO-0574	Buried volcanic	65	65	1197	1755	Haypress family 2	3	Goldberg et al.1990
MNO-0891, Walker Creek	Buried soil	73	-	5517	-	Alamedawell	6	Carpenter 2001

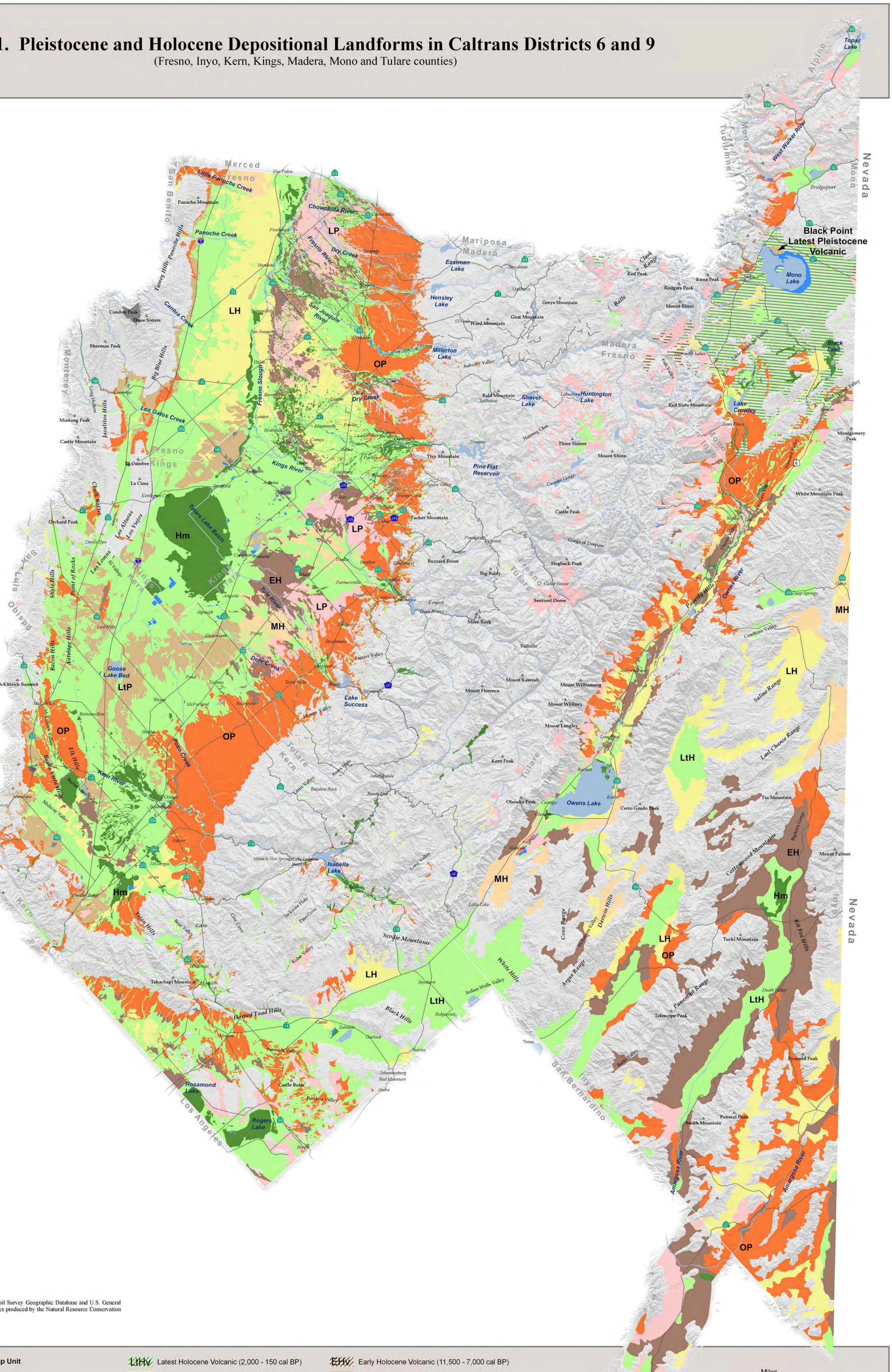
Notes: BSP – Buried site potential; 6 – Very High, 5 – High, 4 – Moderately High, 3 – Moderate, 2 – Moderately Low, 1 – Low, 0 – Very Low.

APPENDIX G

QUATERNARY GEOLOGY MAP
AND BURIED SITE POTENTIAL MAP FOR DISTRICT 6/9

Map 1. Pleistocene and Holocene Depositional Landforms in Caltrans Districts 6 and 9

(Fresno, Inyo, Kern, Kings, Madera, Mono and Tulare counties)



Compiled from Soil Survey Geographic Database and U.S. General Soil Map coverages produced by the Natural Resource Conservation Service.

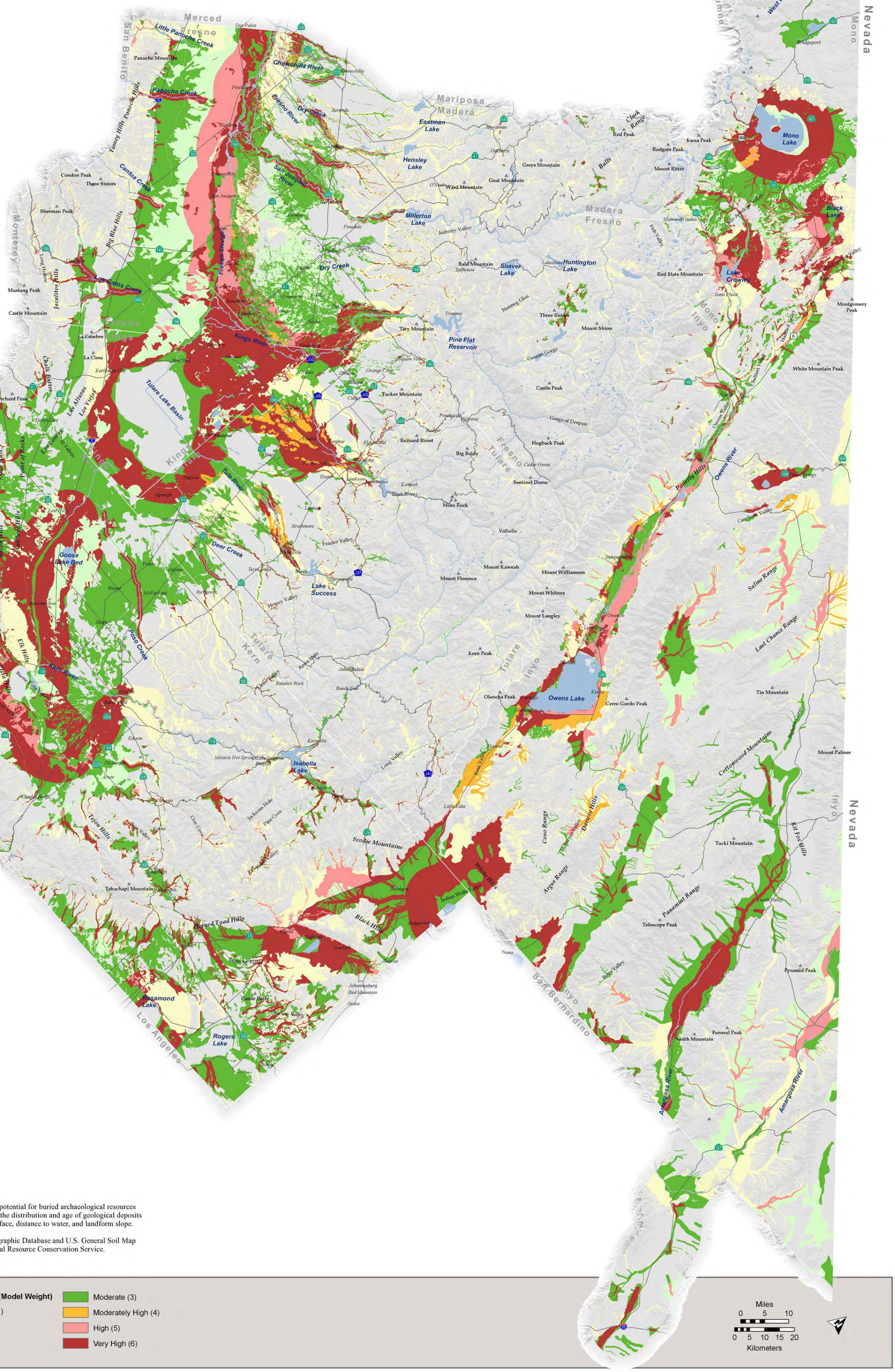
Landform Map Unit

H_2O	Water	LtHv	Latest Holocene Volcanic (2,000 - 150 cal BP)	EHv	Early Holocene Volcanic (11,500 - 7,000 cal BP)
Hacf	Artificial Cut and Fill (less than 150 cal BP)	LH	Late Holocene (4000 - 2000 cal BP)	LtP	Latest Pleistocene (15,000 - 11,500 cal BP)
Hm	Historical and Modern (less than 150 years)	Hvun	Holocene Volcanic (undivided) (150 - 11,500 cal BP)	LP	Late Pleistocene (25,000 - 15,000 cal BP)
LtH	Latest Holocene (2,000 - 150 cal BP)	MH	Middle Holocene (7,000 - 4,000 cal BP)	OP	Older Pleistocene (1.9 million years - 25,000 cal BP)
		EH	Early Holocene (11,500 -7,000 cal BP)	pQ	Pre-Quaternary (greater than 1.9 million years)

Miles
0 5 10
0 5 10 15 20
Kilometers

Map 2. Buried Archaeological Potential in Caltrans Districts 6 and 9

(Fresno, Inyo, Kern, Kings, Madera, Mono and Tulare counties)



Note Regarding Sensitivity: The potential for buried archaeological resources depicted on this map is based on the distribution and age of geological deposits present at the modern ground surface, distance to water, and landform slope.

Compiled from Soil Survey Geographic Database and U.S. General Soil Map coverages produced by the Natural Resource Conservation Service.

Sensitivity For Buried Soils (Model Weight)

- Very Low (less than 1)
- Low (1)
- Moderately Low (2)
- Moderate (3)
- Moderately High (4)
- High (5)
- Very High (6)

Miles
0 5 10
0 5 10 15 20
Kilometers

APPENDIX D:

Geotechnical Due Diligence Review

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SA GEOTECHNICAL
OPTIMIZED SOIL ENGINEERING

May 31, 2024

Project No. 24059-01

To: Meritage Homes
5 Peters Canyon Road, Suite 310
Irvine, California 92606

Attention: Ms. Emma Hill

Subject: Geotechnical Subsurface Exploration, Due Diligence Study, and Preliminary Geotechnical Recommendations, Proposed Residential Development, 95 Argonaut, City of Aliso Viejo, California

At your request, SA Geotechnical, Inc. (SA GEO) has conducted subsurface exploration and geotechnical due diligence study for the proposed residential development located at 95 Argonaut in the City of Aliso Viejo, California (Figure 1). The purpose of this study was to evaluate the geotechnical site conditions in light of the proposed grading and improvements in order to provide a geotechnical summary of conditions and preliminary geotechnical recommendations for project design, grading, and construction. Our evaluation included review of collected geologic and geotechnical engineering reports and maps pertinent to the subject site; a site-specific subsurface exploration; laboratory testing; geotechnical analysis; and preparation of this report.

The subject site is currently developed with a 2-story office building, retaining wall along the westerly property line, at-grade asphalt concrete paved parking lot and associated drive aisles, and hardscape/landscape improvements, all of which will be demolished as part of the proposed project. An approximately 20-foot-high descending slope is present along the easterly property boundary. Based on our review and field exploration, the primary geotechnical constraints include the presence of highly expansive silty/clayey soil that is diatomaceous and seismic shaking during a strong seismic event. The subsurface artificial fill soils at the site are primarily highly plastic silt/clay with minor interlayered clayey/silty sands. The artificial fill soils are generally diatomaceous and derived from Monterey Formation bedrock. Bedrock of the Monterey and Niguel Formations underlie the site at depth. Groundwater was encountered in one boring (H-4) during drilling, at a depth of 55 feet below ground surface. Onsite stormwater infiltration is not feasible considering that the site is underlain by relatively thick artificial fill, which are predominantly silty/clayey, overlying bedrock.

This report presents our findings, conclusions, and preliminary design recommendations for the subject residential development. Based on our review, the proposed grading and development is considered geotechnically feasible provided the recommendations in this report are implemented during design, grading, and construction. Additional evaluation and analysis may need to be performed once the project plans for grading and foundations are developed.

References pertinent to the site are included in Appendix A. Boring and laboratory test data are included in Appendix B and C, respectively. Seismic design parameters are presented in Appendix D. Slope stability analysis is presented in Appendix E. General earthwork and grading specifications are presented in Appendix F.

If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,

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EXECUTIVE SUMMARY

The subject site is underlain by relatively thick artificial fill material as a result of mass grading and development that occurred in the 1980s. Approximately 25 to 75 feet of fill was encountered in all borings which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard/medium dense to dense. The fine-grained fill materials are derived from the Monterey Formation and were found to be diatomaceous. Bedrock of the Monterey and Niguel Formations were encountered during drilling, underlying the artificial fill at depth.

The primary geotechnical constraints at the site include the following:

- Presence of highly expansive silty/clayey soils that are diatomaceous; and
- The potential for seismic shaking during an earthquake event.

Remedial grading for the site should consist of the removal and re-compaction of all weathered/disturbed fill materials. Remedial removals are anticipated to be on the order of 3 to 4 feet below existing grades within the proposed building pads. Remedial grading within the proposed drive areas may be limited to removal and re-compaction of the soils in the upper 1 to 2 feet. Deeper removals may be required where existing trees, utility lines, structures, and foundations are to be abandoned/removed. Considering that the onsite soils predominately consist of silty/clayey soils that are diatomaceous, achieving adequate compaction at acceptable moisture contents during fill placement may require additional mixing and compaction effort.

Groundwater was encountered in one boring (H-4) during our exploration, at a depth of 55 feet bgs (within Niguel Formation). Historic high groundwater is mapped 20 feet below original grades; however, this does not account for the mass grading and fill placement that occurred onsite. In general, we anticipate groundwater to remain at least 20 feet below existing grades upon the completion of grading. However, seepage/groundwater may be present at shallower depth locally and can fluctuate on an annual and seasonal basis.

Considering the relatively minor grading anticipated to achieve design grades, the laboratory test data, building foundations and slabs should be designed to tolerate a total settlement of 2 inches and a differential settlement of 1-inch over a span of 40 feet. Onsite soils are anticipated to have "High" expansion potential at the completion of grading and are considered corrosive to concrete ("S2").

Based on our findings, we conclude that the proposed residential development is feasible from a geotechnical viewpoint, provided it is designed and constructed in accordance with the recommendations presented in this report and the future design/plan review report(s). The site is not considered suitable for infiltration of storm water.

1.0 INTRODUCTION

1.1 Introduction and Scope of Services

At your request, SA Geotechnical, Inc. (SA GEO) has conducted subsurface exploration and geotechnical due diligence study for the proposed residential development located at 95 Argonaut in the City of Aliso Viejo, California (Figure 1). The purpose of our study was to assess the onsite geologic and geotechnical conditions and provide preliminary recommendations for design, grading, and construction of the proposed residential development. A Topographic Survey by X Engineering & Consulting, received on May 15, 2024, has been utilized as the base for our Geotechnical Map (Plate 1).

Our scope of services for this due diligence study included the following tasks:

- Review of available published geologic and geotechnical maps, reports, and data for the subject site and surrounding area, including an archive search of City of Aliso Viejo records. A list of references is included in Appendix A.
- Historic aerial photograph review, dating back to 1931.
- Notification and coordination with DigAlert to identify and clear boring locations of underground utilities.
- Subsurface exploration consisting of excavation, sampling and logging of four hollow-stem auger borings (H-1 through H-4) to depths ranging from 41.5 to 81.5 feet below ground surface (bgs). Boring logs are included in Appendix B.
- Laboratory testing of selected samples to determine engineering properties of onsite soils, including in-situ moisture and density, grain size distribution, Atterberg limits, maximum density and optimum moisture content, consolidation/collapse, shear strength, expansion potential, and soluble sulfate content. Laboratory test results are included in Appendix C.
- Geotechnical evaluation and analysis of the compiled data regarding the proposed grading and development.
- Evaluation of faulting, seismicity, and seismic and static settlement in accordance with the 2022 California Building Code (CBC).
- Preparation of this report including our findings, conclusions, preliminary recommendations, and accompanying illustrations.

SA GEO's expertise and scope of services do not include assessment of potential subsurface environmental contaminants or environmental health hazards.

1.2 Site Condition and History

The subject site is located at 95 Argonaut, Aliso Viejo, California (see Figure 1), and is legally described as Parcel 1 of Parcel Map No. 85-158, Assessor's Parcel Number (APN) 141-521-48. The approximately 2.85-acre site is bound by Glenwood Lane to the north, Argonaut Street to the west and south, a Moulton Niguel Water District reservoir/tank to the east, and other commercial properties to the southeast. The site is currently developed with an approximately 24,879 square-foot two-story commercial building with at-grade asphalt-paved parking lot, drive aisles, and

associated landscaping/hardscaping. The site is primarily flat, with elevations ranging from 440 to 448 feet above mean sea level. A retaining wall is present along the western property line, approximately 3 to 6 feet in height, with an ascending 3- to 4-foot-high 2H:1V slope above. There is an approximately 20-foot-high descending 2H:1V slope along the easterly property line extending offsite to the adjacent water reservoir/tank.

Based on our review of available historic aerial photographs dating back to 1931, the earliest land use at the subject site and surrounding areas were for agricultural purposes (ranching). Development of the surrounding area for commercial use began in the early 1980s, although the subject site remained an undeveloped natural drainage/swale. The site was mass graded between 1985 and 1987, concurrent with the construction of the water tank to the east. This mass grading appears to have occurred concurrent with the adjacent geotechnically-observed mass grading (Jack G. Raub Company, 1987), although no documents pertaining to the grading of the subject site were recovered during our archive search of City/County records. The geotechnical maps/report associated with the adjacent graded commercial lots overlap with the western portion of the subject site and detail a historical (pre-grading) topography ranging from 390 to 412 feet above sea level (Jack G. Raub Company, 1987); however, topography for the eastern and southern portion of the subject site were not included. This suggests a minimum of 30 to 60 feet of design fill associated with mass grading, although this does not account for any remedial grading/removal of alluvium during grading. The streets in the industrial complex were constructed by 1988, along with some of the other commercial buildings in the area. The existing two-story commercial building at the subject site was constructed by 1990. No significant changes were observed on the subject site since initial development and construction of the existing commercial building.

1.3 Proposed Grading and Improvements

Prior to any site development or grading, the existing structures, pavements, utilities, and hardscape will be demolished. Considering the site is relatively flat, we anticipate design grading to consist of cuts and fills on the order of 1 to 3 feet to reach pad grades and provide proper site drainage. Locally, deeper cuts/fills may be required were retaining structures are proposed.

The proposed project is anticipated to include grading/construction for residential development. Based on our review of the Site Plan provided by you, dated March 2024, we understand that the proposed project will consist of 8 multifamily buildings totaling 62 residential units. We anticipate the proposed structures will be 3- to 4-story and consist of wood-framed construction. The development will also include infrastructure improvements, parking/drive aisles, stormwater filtration devices and landscape/hardscape improvements.

1.4 Subsurface Exploration

Our field exploration was performed on April 22, 2024, and included excavation of four hollow stem auger borings (H-1 through H-4) to depths ranging from 41.5 to 81.5 feet bgs.

The borings were geologically logged, and samples were obtained at selected intervals. After completion of drilling, the excavations were backfilled with soil cuttings and tamped. Pavement at the boring locations was repaired with cold patch asphalt. The approximate boring locations are shown on Plate 1 (Geotechnical Map). Boring logs are included in Appendix B.

Soil sampling was performed using a Modified California ring sampler. Relatively undisturbed ring samples were obtained from the borings at various depths with a 2.5-inch inside-diameter, split-barrel sampler. The sampler was driven with a 140-pound, automatic trip hammer, free falling 30 inches. The sampling was used to assess the soil beneath the site as well as to obtain a measure of resistance of the soil to penetration (recorded as blows-per-foot on the geotechnical boring logs). Representative bulk samples of onsite soils were also collected from soil cuttings and used for additional soil identification purposes and laboratory testing.

1.5 Laboratory Testing

Representative samples of onsite soils collected during our field exploration were tested to characterize the engineering properties. Laboratory tests performed on selected relatively undisturbed and bulk soil samples included:

- Moisture content and dry density;
- Grain size analysis;
- Atterberg limits;
- Direct shear;
- Consolidation;
- Maximum density and optimum moisture content;
- Expansion potential; and
- Soluble sulfate.

Laboratory tests were conducted in general conformance with applicable ASTM International standards. The laboratory test results are provided in Appendix C.

2.0 GEOTECHNICAL FINDINGS

2.1 Geologic Setting and Earth Units

The subject site is located in the eastern foothills of the San Joaquin Hills, within the Peninsular Ranges geomorphic province of Southern California. The site is mapped by the U.S. Geological Survey (USGS, 2006) as underlain by sedimentary bedrock of the Monterey and Niguel Formations that is successively overlain by unconsolidated alluvium. Based on our subsurface exploration and understanding of the site history, the subject site was mass graded in the 1980's resulting in thick artificial fill materials placed over bedrock. No alluvium was encountered in any of our borings and is assumed to have been removed during mass grading. The earth unit distribution and our interpretation of the subsurface conditions are shown on the Geotechnical Map (Plate 1) and Geotechnical Cross-Sections A-A' and B-B' (Plates 2 and 3).

Our subsurface exploration encountered compacted **Artificial Fill (Af)** underlying the site as a result of original mass grading. Approximately 25 to 75 feet of artificial fill was encountered in all borings which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard. The fine-grained fill materials appear to be derived from the Monterey Formation and were found to be diatomaceous.

We encountered sedimentary bedrock of the **Monterey Formation (Tm)** and **Niguel Formation (Tn)** underlying the fill materials in all borings. Based on our review of the regional geologic mapping, the earth units are in fault contact below the site (see Figure 2). The fault is inactive/pre-Quaternary. The **Monterey Formation** bedrock generally consisted of olive gray, olive brown, brown, pale yellow, and white siltstone that was very moist to wet, very stiff to hard, and highly diatomaceous. Bedding was observed to be massive to well bedded with thin to laminated bedding.

The **Niguel Formation** was encountered in one boring (H-4) and the bedrock generally consisted of yellowish brown to yellowish gray sandstone that was saturated and very dense. The sandstone was observed to be massive, weakly indurated, and slightly friable.

2.2 Geotechnical Conditions

Based on our geotechnical exploration and laboratory testing, the site geotechnical conditions are generally as follows:

Soil Moisture Content and Dry Density: Onsite artificial fill materials had in-situ moisture contents and dry densities ranging from 10.9 to 84.2 percent and 50.6 to 117.9 pounds per cubic foot (pcf), respectively. Bedrock of the Monterey Formation had in-situ moisture contents ranging from 26.7 to 86.7 percent and dry densities ranging from 51.1 to 96.9 pcf. Please note that the high moisture contents and low densities in the artificial fill and Monterey Formation are typical of diatomaceous materials. Niguel Formation bedrock had in-situ moisture contents ranging from 15.4 to 23.8 percent and dry densities ranging from 96.6 to 115.2 pcf.

Blow counts (blows-per-foot of penetration) in the artificial fill generally ranged from 11 to 66 blows per foot. Blow counts in bedrock ranged from 22 blows per foot to 50 blows for 3.5 inches.

Soil Properties: Grain-size distribution tests were conducted on three bulk samples collected from the uppermost 5 feet. The samples were classified in accordance with the Unified Soil Classification System (USCS) as highly plastic silt (MH) with fines contents (passing No. 200 sieve) ranging from 64 to 73 percent.

Soil plasticity testing was performed on three bulk samples collected from the uppermost 5 feet. The samples were classified as highly plastic silt (MH) with Plasticity Indices ranging from 31 to 37 and Liquid Limits ranging from 70 to 83 percent.

Maximum dry density testing of one near surface sample (collected from the uppermost 5 feet) indicates that the silty soil (MH) has a maximum dry density of 94.1 pcf at optimum moisture content of 20.5 percent.

Shear Strength: Two direct shear tests (relatively undisturbed samples) were performed on samples collected at depths of 2.5 and 5 feet, representative of existing fill materials. The undisturbed direct shear test results indicate that the samples had ultimate internal friction angles of 24 and 26 degrees at cohesions of 400 and 450 pounds per square foot (psf), respectively. The peak internal friction angles were 28 and 29 degrees with cohesions of 450 and 775 psf, respectively.

Consolidation: Tests were performed on four samples collected at depths ranging from 2.5 to 15 feet, representative of existing fil materials. The testing showed that the diatomaceous fill materials are moderately compressible. However, the pre-consolidation pressures are relatively high (higher than 5 ksf). The samples generally had negligible collapse and swell upon the addition of water at a load of 3.2 ksf.

Expansion Potential: Expansion index testing was performed on two samples collected in the upper 5 feet. The results indicate a "High" expansion potential (EI = 91 and 104).

Soluble Sulfate: Soluble sulfate testing was performed on two bulk samples collected from the uppermost 5 feet. The results indicate negligible soluble sulfate content; however, per our experience with the Monterey Formation and review of the laboratory testing from the adjacent development (Jack G. Raub Company, 1987), we anticipate the soluble sulfate content of the onsite soils to be classified as "S2" per Table 19.3.1.1 of ACI-318-14.

2.3 Groundwater

Groundwater was encountered during our subsurface exploration in one boring (H-4) at a depth of 55 feet below ground surface (bgs) within the Niguel Formation. Groundwater was not encountered in boring drilled within the Monterey Formation to a depth of 81.5 feet bgs. The presence of the fault contact between Monterey and Niguel formations may act as a barrier for groundwater migration.

Historic high groundwater mapping indicates high groundwater is greater than 20 feet bgs (CDMG, 2001a). Please note that this is below original grades prior to mass grading and significantly raising grade across the site. Groundwater is anticipated to fluctuate both seasonally and annually, but it is expected to remain deep below the site.

2.4 Regional Faulting and Seismicity

Regional Faults: The site is not located within a fault-rupture hazard zone as defined by the Alquist-Priolo Special Studies Zones Act (CGS, 2018). Also, based on mapping by the State (Jennings and Bryant, 2010), there are no active faults mapped at the site. As discussed previously, the Monterey and Niguel Formations are in fault contact deep below the site; however, the fault is considered inactive (Pre-Quaternary). Regional Faults are presented on Figure 3.

Seismicity: Properties in southern California are subject to seismic hazards of varying degrees depending upon the proximity, degree of activity, and capability of nearby faults. These hazards can be primary (i.e., directly related to the energy release of an earthquake) or secondary (i.e., related to the effect of earthquake energy on the physical world). Since there are no active faults at the site, the potential for primary ground rupture is considered very low. The primary seismic hazard for this site is ground shaking during a future earthquake.

Using the USGS deaggregation computer program (USGS, 2024) and the site coordinates of 33.5946 north latitude and –117.7243 west longitude, the closest major active faults include the Newport-Inglewood and San Joaquin Hills Faults. The maximum moment magnitude for the controlling fault is 7.1 M_W, which would be generated from the San Joaquin Hills Fault; however, numerous other regionally active faults could also produce ground shaking at the site during an earthquake.

The site is not located within a mapped potential liquefaction hazard zone, as defined by the State's Seismic Hazard Mapping (CDMG, 2001b). Other secondary seismic hazards, such as tsunami and seiche are considered nil due to site elevation and distance from the ocean or other confined body of water (CGS, 2021).

2.5 Slope Stability

The site geologic/geotechnical conditions are generally favorable for overall stability of the existing slope along the eastern perimeter. The existing fill slope is approximately 20 feet in total height at an inclination of 2H:1V (horizontal:vertical). We prepared cross-section B-B' (Plate 3) depicting the existing descending slope at the site. Slope stability analysis was performed for a 2H:1V slope with a maximum height of 25 feet, using artificial fill soil strength parameters that were developed during this study and based on the direct shear test results. For our analysis, we used an internal friction angle of 24 degrees and a cohesion of 400 psf. For pseudo-static analysis, we applied a seismic horizontal coefficient (k_h) of 0.29 in accordance with Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California (CGS, 2008).

The results of the slope stability analysis are presented in Appendix E. The existing fill slope at the site was found to be grossly stable with a factor of safety of well over 1.5 under static conditions and a factor of safety of over 1.1 for pseudo-static conditions.

2.6 Settlement and Foundation Considerations

In general, the anticipated settlements depend upon the building loads, type of foundations, and the geotechnical properties of the supporting subgrade. Considering the subsurface soil conditions and laboratory test data, and relatively lightly loaded residential structures, we estimate the total static settlement to be on the order of 2 inches and the differential static settlement to be on the order of 1-inch over a 40-foot span. This assumes remedial grading measures recommended in Section 3.2 of this report are implemented during site grading.

2.7 Stormwater Infiltration Feasibility

The site is underlain by thick (25 to 75 feet) silty/clayey artificial fill materials overlying bedrock. In accordance with County of Orange WQMP guidelines, stormwater infiltration should not be performed in compacted artificial fill and bedrock (OCPW, 2013). Furthermore, the fine-grained soils will not be conducive to infiltration. Also, considering the presence of slopes along the property boundaries and deep canyon fill, infiltration of stormwater can result in seepage or springs in locations where previously none existed, potentially impacting offsite properties and slopes. Stormwater infiltration is not considered feasible from a geotechnical viewpoint.

2.8 Shrinkage and Bulking

The shrinkage and bulking (reduction or increase in volume of excavated materials on recompaction as fill) varies by soil type and location. The volume change primarily depends on in-situ density and the maximum dry density of the soil type. Considering the site is underlain by compacted fill materials, we anticipated that shrinkage of site soils will be relatively low and less than 5 percent. Ground subsidence at the site is estimated to be on the order of 0.1 foot. These values exclude losses due to removal of pavement, vegetation and debris and are dependent on the accuracy of the site topographic survey and type of equipment and compaction method used by the contractor.

2.9 Existing Utilities and Pavement Section

Existing onsite utilities consisting of sewer, water, and gas/electric lines are present onsite supporting the existing office building and associated improvements. We anticipate that the existing utilities will be demolished as part of the proposed improvements and that new utilities and service connections will be established.

The existing pavement section was measured in Borings H-1 through H-4 excavated during this study. The pavement section consisted of 4 inches of asphalt concrete (AC) over 6 to 8 inches of aggregate base (AB).

3.0 CONCLUSION AND PRELIMINARY RECOMMENDATIONS

3.1 General Conclusion and Recommendation

Based on our review, construction of the proposed residential development, as described herein, is considered geotechnically feasible provided the preliminary recommendations in this report are implemented during design, grading, and construction. Grading, foundation, structural and wall plans for the project should be reviewed by the geotechnical consultant during the design phase. Updated recommendations should be provided once the project plans are finalized and as needed.

The recommendations in this report should be considered minimum and may be superseded by more restrictive requirements of others. In addition to the following recommendations, General Earthwork and Grading Specifications are provided in Appendix F.

3.2 Site Preparation and Earthwork

Site preparation and grading should be performed in accordance with the recommendations herein and the requirements of the City of Aliso Viejo/County of Orange.

3.2.1 Site Demolition and Clearing

Prior to remedial grading, the existing structures, foundations, hardscape/landscape, and utilities to be abandoned should be demolished and removed. Deleterious materials and debris should be cleared from the site and disposed of offsite. Concrete material may be mixed with onsite soils and placed as compacted fill provided it is broken into pieces that are smaller than 6 inches in the largest diameter. Asphalt concrete may also be used in compacted fill materials; however, it should not be placed under the residential pads. Placement of concrete and asphalt as compacted fill should be approved by the project environmental consultant. Excavations for the removal of existing foundations, utilities, and vegetation, including onsite trees, should be observed by the geotechnical consultant. Large roots, highly organic soils, and existing utilities should be removed and should not be incorporated into new fills.

Soil that is disturbed as part of excavations or removal of trees or underground utilities should be evaluated by the geotechnical consultant. Excavations that require backfill should be properly documented and compacted under the observation and testing of the geotechnical consultant in accordance with the recommendations provided in Section 3.2.4.

3.2.2 Protection of Existing Improvements and Utilities

Existing improvements, and utilities on or adjacent to the site that are to be protected in place should be located and visually marked prior to grading operations. Excavations adjacent to improvements to be protected in-place or any utility easement should be performed with care, so as not to undermine existing foundations or destabilize the adjacent ground.

Stockpiling of soils more than 5 feet in height at or near existing structures and over utility lines should not be allowed. If deeper removals are required, shoring or other special measures (i.e., setback or laybacks) to provide safety and mitigate the potential for lateral/vertical movements may be required.

3.2.3 Remedial Grading Measures

Remedial grading at the site should consist of removal of weathered/unsuitable fill materials. In general, we recommend that remedial grading for the proposed building pads consist of removal and recompaction of soils in the upper 3 to 4 feet (from existing grade) to remove any unsuitable/disturbed artificial fill material. The removals for building pads should extend a minimum of 4 feet laterally, beyond the building footprint. Removals within the proposed drive areas may be limited to removal and re-compaction of the upper 1 to 2 feet, below existing grades. Where deeper unsuitable material is encountered, the removals should be extended to the bottom of unsuitable materials to competent, unweathered/undisturbed artificial fill.

The geotechnical consultant should review and approve the removal bottoms prior to fill placement and should provide additional specific recommendations based on actual conditions, if necessary.

Excavations deeper than 4 feet will need to be laid back at a minimum inclination of 1:1 or provided with shoring. Shallow, unconfined excavations (4 feet or less) may consist of near-vertical excavation, locally, and upon review by the geotechnical consultant. Trench excavations should be performed in accordance with Cal/OSHA requirements for Soil Type "B". The contractor's qualified person should verify compliance with Cal/OSHA requirements. Excavations near existing structures (within a 1:1 projection) should be provided with shoring that is designed to support the surcharge load of the existing structure. Otherwise, excavations may need to be performed in sections (A/B/C slot cuts). Slot cuts should not exceed more than 20 feet in length. The conditions should be reviewed in the field by the project geotechnical consultant. Additional recommendations should be provided based on the actual conditions encountered during excavation and grading, as needed.

3.2.4 Fill Placement

Upon the completion of remedial grading measures, the approved removal bottoms should be scarified a minimum of 6 inches. The removal bottoms and fill materials should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM Test Method D1557. Fill materials should be placed in loose lifts no thicker than 8 inches.

Fill materials should be relatively free of deleterious material. The existing fill materials are considered suitable for re-use as compacted fill provided any deleterious material is removed. Considering that the onsite soils predominately consist of silty/clayey soils that are diatomaceous, achieving adequate compaction at acceptable moisture contents during fill placement may require additional effort. The moisture content of the fill materials should be above the optimum moisture content but within the compactable levels.

Concrete material may be mixed with onsite soils and placed as compacted fill if it is broken into pieces that are smaller than 6 inches in the largest diameter. Asphalt concrete may also be used in compacted fill materials; however, it should not be placed under the residential pads. Placement of concrete and asphalt as compacted fill should be approved by the project environmental consultant.

3.2.5 Import

The geotechnical consultant should evaluate and accept any import soils prior to transportation to the subject site. We recommend that import soils have similar or better engineering properties to onsite soils. At minimum, the import materials should have an Expansion Index of less than 90 and a Plasticity Index of less than 25.

3.3 Settlement Potential

The amount of settlement will depend upon the type of foundation(s) selected and future loading by additional fill and structures. Based on our review of the subsurface data, considering the remedial grading recommendations provided in this report are implemented during grading, and structural loads typically associated with the anticipated 3- to 4-story residential units, we estimate that total and differential post-construction settlement will be on the order of 2 inches and 1-inch over a span of 40 feet, respectively.

SA GEO should be provided with the foundation plans and structural loads, once available, in order to further evaluate the potential for post-construction settlement of the proposed buildings and associated improvements. The parameters provided herein will then be confirmed/updated based on the planned foundations and loads and additional testing and/or analysis.

3.4 Foundation Design

The slab and foundations should be designed by the project structural engineer based on the proposed structure type and the anticipated loading conditions. The foundation soils are anticipated to have expansive soil conditions ("High" expansion potential) and will be subject to climatic and landscape moisture fluctuations. Post-tensioned slab should be anticipated for the proposed residential buildings. The following foundation recommendations are provided with the assumption that the recommendations included in Section 3.2 of this report are implemented during site grading. Caisson design parameters are provided in Section 3.5 of this report.

The recommended net allowable bearing capacity for continuous and isolated footings may be calculated based on the following equation:

$q_{all} = 500\ D + 150\ B + 1{,}500$ (but not to exceed 3,500 psf, see below for post-tensioned/mat slabs)

where:
D = embedment depth of footing, in feet
B = width of footing, in feet

Also, the following parameters may be used for design of foundation and slabs:

- Soil unit weight = 110 pcf
- Soil internal friction angle = 25 degrees
- Coefficient of Friction = 0.30
- Subgrade modulus (k) of 50 pci (corrected for large slabs)
- Soil elastic modulus (Es) of 1,000 psi
- Effective Plasticity Index (upper 15 feet) = 35

The allowable bearing capacity of 1,000 psf may be used for design of post-tensioned/mat foundation.

The dead load of concrete below adjacent grades (buried concrete foundations) may be neglected. The allowable bearing pressure and friction coefficient may be increased by one-third for wind and seismic loading.

We recommend that strip and isolated footings for the buildings have a minimum embedment depth of 18 inches below the lowest adjacent grade. Continuous footings should be at least 12 inches wide and isolated column footings should be at least 24 inches wide. The footings of freestanding and isolated structures, such as walls and pilasters, should have a minimum embedment depth of 18 inches into approved soils.

The following table provides our general guidelines and preliminary recommendations for design of post-tensioned foundations and slabs on expansive soil in accordance with the 2022 California Building Code (CBC) and Post-Tension Institute (PTI) DC 10.5 Edition provisions.

GEOTECHNICAL GUIDELINES
FOR DESIGN OF POST-TENSIONED SLABS

Parameter	Recommendation
Center Lift	
Edge Moisture Variation Distance, e_m	7.50 feet
Center Lift, y_m	0.90 inches
Edge Lift	
Edge Moisture Variation Distance, e_m	4.00 feet
Edge Lift, y_m	1.25 inch
Presaturation, as needed, to obtain the minimum moisture down to the minimum depth	1.3 x optimum down to 18 inches

We recommend that post-tensioned slabs have a thickened edge such that the slab is embedded a minimum of 18 inches below the lowest adjacent grade.

In addition, as indicated in the DC 10.5 Edition of PTI, shape factor calculations should be performed by the project structural engineer in order to determine if strengthening/modification of foundations are necessary. Per PTI guidelines, modifications to the foundations design should be considered if the shape factor (ratio of square of foundation perimeter over foundation area) exceeds 24.

If non-post-tensioned slabs-on-grade and foundations are considered at the site, an effective Plasticity Index of 35 is considered appropriate for the upper 15 feet of soil materials, in accordance with Wire Reinforcement Institute (WRI) method (per the 2022 California Building Code). For non-post-tensioned slabs, we recommend a minimum embedment of 18 inches below the lowest adjacent grade for the perimeter footings. Also, the upper 18 inches of subgrade soil should be pre-saturated to 130 percent of optimum moisture content prior to placement of moisture barrier and concrete.

The foundations and slabs should also be designed to tolerate the total and differential settlements discussed in Section 3.3 of this report.

For the design of pole-type foundations (i.e., light poles, shade structures, etc.), an allowable soil-bearing pressure (s_1) of 290 psf/ft may be used for Equation 18-1 (the "pole" equation) of the 2022 California Building Code (CBC) Section 1807.3.2.1 to determine the depth of embedment for the footings, considering level ground conditions. The equation is applicable for designed embedment depths of less than 12 feet for the purpose of computing lateral pressure. Also, for vertical loads on pole-type foundations, an allowable skin friction of 250 pounds per square foot may be used. Pole foundations should have a minimum embedment of 30 inches below adjacent grades. For cast-in-place pole-type foundations, the vertical end bearing pressure should be neglected.

3.5 Caisson Design

All caissons, if any, should have a minimum of 5 feet embedment into competent fill materials. An average skin friction value of 250 pounds per square foot may be utilized to calculate the axial capacity of caissons. The lateral capacity of caissons may be computed using a value of 290 psf/ft but should not exceed 4,400 psf/ft for level conditions. For caissons near the existing descending slope with passive envelope impacted by the slope, the passive pressure should be limited to 170 psf/ft. Passive resistance may be doubled for isolated piles/caissons spaced a minimum of 3 diameters apart center-to-center. The allowable bearing pressure (both axial and lateral) may be increased by one-third for wind or seismic loading. Other minimum footing dimensions should be provided by the Structural Engineer and should comply with Table 1809.7 of the 2022 CBC.

Caissons should be designed in accordance with ACI recommendations and applicable building code requirements. The accepted criteria for caisson installation are detailed below:

- Caissons should be constructed as pre-drilled cast-in-place elements. A representative of the geotechnical consultant should be present during drilling of all caisson excavations in order to verify proper embedment and to geotechnically review appropriate drilling methods.
- Caisson excavations should be cleaned of loose soil, cuttings and groundwater and should be reviewed by the project geologist prior to placement of steel or concrete.
- No caisson boring shall be excavated within 6 feet from the nearest edge of a completed caisson unless the completed caisson has been filled with concrete for more than 24 hours.

3.6 Retaining Walls Design and Lateral Earth Pressures

Recommendations for lateral earth pressures for permanent retaining walls and structures with approved onsite drained soils and above the groundwater table are as follows:

Conditions	*Level (pcf)*	*2:1 Sloping*
Active	40	60
At-Rest	65	85
Passive	290	170 (sloping down)

These parameters are based on a soil internal friction angle of 25 degrees, a cohesion of 100 pounds per square foot (psf) and soil unit weight of 110 pcf.

To design an unrestrained retaining wall, such as a cantilever wall, the active earth pressure may be used. For a restrained retaining wall, the at-rest pressure should be used. Passive pressure is used to compute lateral soils resistance developed against lateral structural movement. The passive pressures provided above may be increased by one-third for wind and seismic loads. The passive resistance is taken into account only if it is ensured that the soil against embedded structure will remain intact with time. Future landscaping/planting and improvements adjacent to the retaining walls should also be taken into account in the design of the retaining walls. Excessive soil disturbance, trenches (excavation and backfill), future landscaping adjacent to footings and over-saturation can adversely impact retaining structures and result in reduced lateral resistance.

For sliding resistance, the friction coefficient of 0.30 may be used at the concrete and soil interface. The coefficient of friction may be increased by one-third for wind and seismic loading. The retaining walls may also need to be designed for additional lateral loads if other structures or walls are planned within a 1H:1V projection.

If slopes above the retaining walls are relatively minor (in height), the additional load associated with the soil above the retaining wall and within the active wedge may be calculated as a **surcharge load** and applied to the retaining wall using a coefficient of active pressure (k_a) of 0.48.

The seismic lateral earth pressure for walls retaining more than 6 feet of soil may be estimated to be an additional 16 pcf for active and at-rest conditions. The earthquake soil pressure has a triangular distribution and is added to the static pressures. For the active and at-rest conditions, the additional earthquake loading is zero at the top and maximum at the base. The seismic lateral earth pressure does not apply to walls retaining less than, or equal to, 6 feet of soil (2022 CBC Section 1803.5.12).

Drainage behind walls retaining more than 30 inches of soil should also be provided in accordance with the attached Figure 4. Specific drainage connections, outlets and avoiding open joints should be considered for the retaining wall design.

3.7 Seismic Design Parameters

The following table summarizes the seismic design criteria for the subject site. The seismic design parameters are developed in accordance with ASCE 7-16 and 2022 CBC. Please note that, considering the proposed structures and anticipated structural periods, site-specific ground-motion hazard analysis was not performed for the site. Per Supplement 3 of ASCE 7-16, the value of S_{M1}, and therefore S_{D1}, have been increased by 50 percent. The seismic response coefficient, Cs, should be determined per the parameters provided below and using equation 12.8-2 of ASCE 7-16.

Selected Seismic Design Parameters from 2022 CBC/ASCE 7-16	*Seismic Design Values*	*Reference*
Latitude	33.5946 North	
Longitude	-117.7243 West	
Controlling Seismic Source	San Joaquin Hills	USGS, 2024
Site Class per Table 20.3-1 of ASCE 7-16	D	
Spectral Acceleration for Short Periods (Ss)	1.218 g	SEA/OSHPD, 2024
Spectral Accelerations for 1-Second Periods (S_1)	0.438 g	SEA/OSHPD, 2024
Site Coefficient F_a, Table 11.4-1 of ASCE 7-16	1.013	SEA/OSHPD, 2024
Site Coefficient F_v, Table 11.4-2 of ASCE 7-16	1.862	
Design Spectral Response Acceleration at Short Periods (S_{DS}) from Equation 11.4-4 of ASCE 7-16	0.822 g	SEA/OSHPD, 2024
Design Spectral Response Acceleration at 1-Second Period (S_{D1}) from Equation 11.4-4 of ASCE 7-16 (Includes 50% increase per Supplement 3)	0.816 g	
T_S, S_{D1} /S_{DS} 11.4.6 of ASCE 7-16	0.992 sec	
T_L, Long-Period Transition Period	8 sec	SEA/OSHPD, 2024
Peak Ground Acceleration Corrected for Site Class Effects (PGA_M) from Equation 11.8-1 of ASCE 7-16	0.566 g	SEA/OSHPD, 2024
Seismic Design Category, Section 11.6 of ASCE 7-16	D	SEA/OSHPD, 2024

3.8 Slope Stability and Slope Setback

No significant modifications to the existing fill slope along the eastern property line are planned as part of this project. The existing slope is composed of compacted artificial fill materials and the proposed improvements are not anticipated to adversely impact the slope. Based on our slope stability analysis (Appendix E), the existing slope was found to be grossly stable. In general, slopes are considered susceptible to surficial instability in the form of erosion, raveling, and slumping. Special care should be taken to ensure that onsite runoff is controlled and directed offsite in a non-erosive manner and that site drainage, and slopes are maintained over the life of the project.

Footings for structures located above descending slopes should be set back from the slope face in accordance with the minimum requirements of the City of Aliso Viejo and section 1808.7.1 of the 2022 CBC, whichever is greater. The setback distance is measured from the outside edge of the footing bottom along a horizontal line to the face of the slope.

The tables below summarize the minimum setback criteria for structures above descending slopes:

Case A – Building and Retaining Wall Footings Above Descending Slopes	
Slope Height [H] (feet)	*Minimum Setback from Slope face (feet)*
Less than 10	5
10 to 20	½ * H
20 to 30	10
Greater than 30	⅓ * H (maximum of 40')

Case B – Freestanding Wall Footings Above Descending Slopes	
Slope Height [H] (feet)	*Minimum Setback from Slope face (feet)*
Less than 10	5
10 to 20	½ * H
Greater than 20	Maximum of 10

For freestanding walls and other structures that are sensitive to lateral movement (e.g., smooth stucco finish, glass screens, etc.), SA GEO recommends that the structural setback requirements in accordance with Case A above be followed or that additional design measures be used to help control the potential for cracking and displacements. Otherwise, typical freestanding walls may have a setback in accordance with Case B.

3.9 Corrosivity

Soluble sulfates exposure in the onsite soils should be classified as "S2" per Table 19.3.1.1 of ACI-318-14. Structural concrete elements in contact with soil include footings and building slabs-on-grade. The flatwork and sidewalk concrete are typically not considered structural elements. Concrete mix for structural elements should be based on the "S2" soluble sulfate exposure class of Table 19.3.2.1 in ACI-318-14. Other ACI guidelines for structural concrete are recommended. Also, onsite soils are anticipated to be corrosive to metals.

3.10 Expansion Potential

At the completion of grading, we anticipate that onsite soils will have "High" expansion potential. The geotechnical recommendations provided in this report including the design parameters for foundations, slab-on-grade and flatwork improvement should be implemented during design and construction. Updated recommendations will be provided upon additional testing at the completion of grading at the site and as needed.

Homeowners and their design/construction team should be familiar with the recommendations in this report as well as principles described in a useful reference published by the California Geotechnical Engineers Association (CalGeo), titled, "Coexisting with Expansive Soil: An Informational Guide for Homeowners." This free booklet can be downloaded at www.calgeo.org.

3.11 Interior Slab Moisture Mitigation

In addition to geotechnical and structural considerations, the project owner should also consider interior moisture mitigation when designing and constructing slabs-on-grade.

The intended use of the interior space, type of flooring, and the type of goods in contact with the floor may dictate the need for, and design of, measures to mitigate potential effects of moisture emission from and/or moisture vapor transmission through the slab. Typically, for human occupied structures, a vapor retarder or barrier is recommended under the slab to help mitigate moisture transmission through slabs. The most recent guidelines by the American Concrete Institute (ACI 302.1R-04) suggest that the vapor retarder be placed directly under the slab (no sand layer). However, the location of the vapor retarder may also be subject to the builder's past successful practice. Placement of 1 or 2 inches of sand over the moisture retardant has been common practice by builders in southern California. Specifying the strength of the retarder to resist puncture and its permeance rating is important. These qualities are not necessarily a function of the retarder thickness. A minimum of 10-mil is typical but some materials, such as 10-mil polyethylene ("Visqueen"), may not meet the desired standards for toughness and permeance.

Vapor retarders, when used, should be installed in accordance with standards such as ASTM E 1643 and/or those specified by the manufacturer.

Concrete mix design and curing are also significant factors in mitigating slab moisture problems. Concrete with lower water/cement ratios results in denser, less permeable slabs that also "dry" faster with regard to when flooring can be installed (reduced moisture emissions quantities and rates). Rewetting of the slab following curing should be avoided since it can result in additional drying time required prior to flooring installation. Proper concrete slab testing prior to flooring installation is also important.

Concrete mix design, the type and location of the vapor retarder should be determined in coordination with all parties involved in the finished product, including the project owner, architect, structural engineer, geotechnical consultant, concrete subcontractors, and flooring subcontractors.

3.12 Exterior Concrete

The sidewalk, patio slabs, driveways and other flatwork elements should be at least 4 inches thick. Driveway approaches should be a minimum of 6 inches thick. We recommend that the concrete flatwork be reinforced with No. 3 bars be placed at 24 inches on center both ways. Concrete slabs should be provided with construction or weakened plane control joints at a maximum spacing of 6 feet. The control joints should have a thickness that is ¼ of the total concrete thickness. Upon the placement and compaction of subgrade soils (per Section 3.2 of these recommendations), the upper 18 inches of the subgrade soils should be pre-saturated to 130 percent of optimum moisture content prior to placement of concrete and reinforcement. We also recommend that 2 to 4 inches of granular materials/aggregate base be placed over the compacted subgrade prior to placement of reinforcement and concrete.

For exterior slabs, the use of a granular sublayer is primarily intended to facilitate presaturation and subsequent construction by providing a better working surface over the saturated soil. It also helps retain the added moisture in the native soil in the event that the slab is not placed immediately.

Exterior concrete elements such as curb and gutter, driveways, sidewalks, and patios are susceptible to lifting and cracking when constructed over expansive soils. With expansive soils, the impacts to flatwork/hardscape can be significant, generally requiring removal and replacement of the affected improvements. Please also note that reducing concrete problems is often a function of proper slab design, concrete mix design, placement, and curing/finishing practices. Adherence to guidelines of the American Concrete Institute (ACI) is recommended. Also, the amount of post-construction watering, or lack thereof, can have a very significant impact on the adjacent concrete flatwork.

On projects with expansive soils, additional measures such as thickened concrete edges/footings, subdrains and/or moisture barriers should be considered where planter or natural areas with irrigation are located adjacent to the concrete improvements. Design and maintenance of proper surface drainage is also very important. If the concrete will be subject to heavy loading from cars/trucks or other heavy objects, thicker pavement section will be required the design of which should be performed by the geotechnical consultant, as needed.

The above recommendations typically are not applied to curb and gutter but should be considered in areas with highly expansive soils.

3.13 Preliminary Asphalt Concrete Pavement Design

Final structural pavement sections should be based on R-value testing after the completion of grading and in accordance with city of Aliso Viejo requirements. Based on an R-value of 5 and estimated traffic indices (TIs), we recommend the following preliminary pavement sections:

Street Location	***Estimated TIs***	***Pavement Section***
Parking Stalls	TI – 4.0	3 inches of AC / 6 inches of AB
General Drives	TI – 5.5	4 inches of AC / 10 inches of AB
AC = Asphalt Concrete, AB = Aggregate Base		

Please note that for two-stage paving operations, we recommend that the final AC cap be a minimum of 0.10 foot thick and the base AC course have a minimum thickness of 0.25 foot.

If pavement repair is needed within the adjacent streets, the section should match the existing section and follow standard City/County guidelines for trench/pavement repair. The new pavement section should at minimum consist of 4 inches of AC over 10 inches of AB.

Asphalt concrete pavement should be placed in accordance with the requirements of Sections 301 and 302 of the Standard Specifications of Public Works Construction (the Greenbook). Prior to construction of pavement sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in-place to a minimum of 90 percent relative compaction (per ASTM D1557). Subgrade should be firm prior to AB placement.

AB materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of any deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557). Asphalt concrete should also be compacted to a minimum relative compaction of 95 percent.

Unpaved median and parkway areas should be provided with vertical moisture barriers.

3.14 Vehicular PCC Pavements

For trash enclosures, we recommend 6 inches of PCC reinforced with No. 4 rebar at 18 inches on-center, both ways, over 4 inches of aggregate base placed over compacted subgrade. For parking stalls, the section may consist of 4 inches of PCC reinforced with No. 4 rebar at 18 inches on-center, both ways, over 4 inches of aggregate base over compacted subgrade.

The subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction (per ASTM D1557).

Aggregate base materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of any deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557).

3.15 Concrete Paver Section

For concrete pavers within **pedestrian** walkways, we recommend 60-millimeter-thick concrete pavers over approximately 1 inch of sand, over a minimum of 6 inches of AB, over compacted subgrade. This should also accommodate the rare maintenance cart or light truck that might drive up on these areas.

For concrete pavers within **vehicular** drive areas, if any, we recommend 80-millimeter-thick concrete pavers over 6 inches of concrete reinforced with No. 3 rebar at 24 inches on-center, over 4 inches of AB. Alternatively, the concrete low pour slab may be replaced with a minimum of 15 inches of AB over compacted subgrade; or 12 inches of AB over a layer of geotextile (e.g., Mirafi 600X or equivalent), over compacted subgrade.

A concrete band along the perimeter of the pavers should be provided for lateral restraint. The concrete band should, at minimum, be 12 inches deep and deepened to below the depth of disturbed soil, if adjacent to landscape/planter areas.

Also, a drainage system consisting of a 2-inch PVC drainage pipe should be installed at the low end of the concrete low pour at 10-foot intervals through the slab and filled with pea gravel. The PVC drainage pipe should drain to a minimum of 6-inch-diameter by 12-inch-deep drain pit filled with pea gravel below the pipe. The paver surfaces should slope away from structures a minimum of 2 percent. The concrete underlayment for the drive areas should be provided with weakened plane joints at maximum 6-foot intervals. If the pavers are to be set in mortar or are underlain with AB, this drainage system is not required.

Prior to construction of the paver sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction (per ASTM D1557). The upper 18 inches of subgrade for pedestrian walkway and patio areas should then be presaturated to 130 percent of optimum moisture content. Subgrade for vehicular pavers need not be pre-saturated.

Aggregate base materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557).

3.16 Trench Excavation and Backfill

Excavations should be performed in accordance with the requirements set forth by Cal/OSHA Excavation Safety Regulations (Construction Safety Orders, Section 1504, 1539 through 1547, Title 8, California Code of Regulations). In general, onsite soils may be classified as Type "B". Cal/OSHA regulations indicate that, for workmen in confined conditions, the steepest allowable slopes in Type "B" soils are 1:1. Locally, Type "C" soils may be encountered (saturated soils, seepage) and require slope layback of 1.5H:1V (horizontal:vertical). These laybacks apply to excavations 20 feet deep or less. Where there is no room for these layback slopes, we anticipate that shoring will be necessary. Adequate shoring (i.e., shields) should be provided, as deemed necessary. The soils within the adjacent streets are anticipated to be similar to onsite soils. Excavations should be reviewed periodically by the contractor's qualified person to confirm compliance with Cal/OSHA requirements.

Onsite soils should be suitable for use as trench backfill with the exception of wet/saturated materials, if encountered. Utility trench backfill should be in accordance with City of Aliso Viejo, County of Orange and/or the governing jurisdiction's specifications. Backfill materials should be compacted to a minimum of 90 percent relative compaction (per ASTM D1557). Rocks greater than 3 inches in largest diameter should generally not be used as trench backfill unless approved by the agency and geotechnical consultant of record. Excavation and backfilling of HDPE pipes (if any) should be in accordance with the manufacturer’s requirement and the Greenbook. Select granular backfill (i.e., clean sand with SE 30 or better) may be used in lieu of native soils but should also be compacted or densified with water jetting and flooding.

Trenches excavated next to structures and foundations should also be properly backfilled and compacted to provide full lateral support and reduce settlement potential.

3.17 Groundwater

Groundwater was encountered during our subsurface exploration at a depth of 55 feet in Boring H-4 (within Niguel Formation). While some saturated soil may be encountered during grading and/or utility trench excavation, we do not anticipate significant seepage or that mitigation measures will be necessary. In general, groundwater is anticipated to remain more than 20 feet below the proposed building foundations. However, shallow, perched water/seepage may occur on an annual and seasonal basis as a result of rainfall, irrigation and/or seepage from adjacent properties.

3.18 Stormwater Infiltration

As discussed previously (Section 2.7), considering the artificial fill thickness, and bedrock directly below the fill materials, and presence of fine-grained expansive soils, stormwater infiltration at the site is not feasible from a geotechnical viewpoint. Other methods of filtration/treatment should be evaluated by the project civil engineer.

3.19 Surface Drainage and Irrigation

Maintaining adequate surface drainage, proper disposal of run-off water, and control of irrigation will help reduce the potential for future moisture-related problems and differential movements from soil heave/settlement.

Surface drainage should be carefully taken into consideration during grading, landscaping, and building construction. Positive surface drainage should be provided to direct surface water away from structures and slopes and toward the street or suitable drainage devices. Ponding of water adjacent to the structures should not be allowed. Buildings should have roof gutter systems and the run-off should be directed to parking lot/street gutters by area drainpipes or by sheet flow over paved areas. Paved areas should be provided with adequate drainage devices, gradients, and curbing to prevent run-off flowing from paved areas onto adjacent unpaved areas.

Considering the climatic conditions in southern California and provided that the recommendations included in this report are implemented during grading and construction, a minimum two-percent slope away from structures is considered acceptable and in substantial compliance with the 2022 CBC. Also, swales with one-percent slopes are acceptable from a geotechnical standpoint and are common practice in this locale.

Construction of planter areas immediately adjacent to structures should be avoided if possible. If planter boxes are constructed adjacent to or near buildings, the planters should be provided with controls to prevent excessive penetration of the irrigation water into the foundation and flatwork subgrades. Provisions should be made to drain excess irrigation water from the planters without saturating the subgrade below or adjacent to the planters. Raised planter boxes may be drained with weepholes. Deep planters (such as palm tree planters) should be drained with below-ground, water-tight drainage lines connected to a suitable outlet. Moisture barriers should also be considered.

It is also important to maintain a consistent level of soil moisture, not allowing the subgrade soils to become overly dry or overly wet. Properly designed landscaping and irrigation systems can help in that regard.

3.20 Slope Maintenance, Lot Drainage, and Erosion Control

Maintenance of proper pad drainage, the design and construction of property improvements in accordance with sound engineering practices, and proper maintenance of landscaping, including regular pad and slope irrigation, should be performed. Irrigation should not be excessive or sporadic; maintaining a relatively constant level of soil moisture around structures and improvements is important. Oversteepening of slopes should be avoided.

Planters and landscape areas adjacent to structures should be avoided or provided with measures to mitigate the potential for water getting under the foundations and slabs. Water should not be allowed to pond and drainage should be maintained away from structures and tops of slopes.

Establishing and maintaining a rodent-control program is also recommended to reduce surficial slope deterioration often associated with rodent burrowing. The improvements at or near the tops of slopes may be subject to varying degrees of slope-creep related movements and should be designed with that in mind, meeting the setback criteria discussed in this report.

3.21 Additional Subsurface Exploration and Laboratory Testing

Additional subsurface exploration during the design phase of the project is not considered necessary unless significant plan changes occur. Additional laboratory testing should be performed during and upon completion of the grading to confirm/update the design parameters provided herein.

3.22 Review of Future Plans

The project grading, foundation, street improvement, wall, and landscape plans should be reviewed and accepted by the geotechnical consultant prior to grading and construction. Additional recommendations should be provided upon the review of the project plans and as needed.

3.23 Observation and Testing during Grading and Construction

Geotechnical observation and testing should be performed by SA GEO during the following phases of grading and construction:

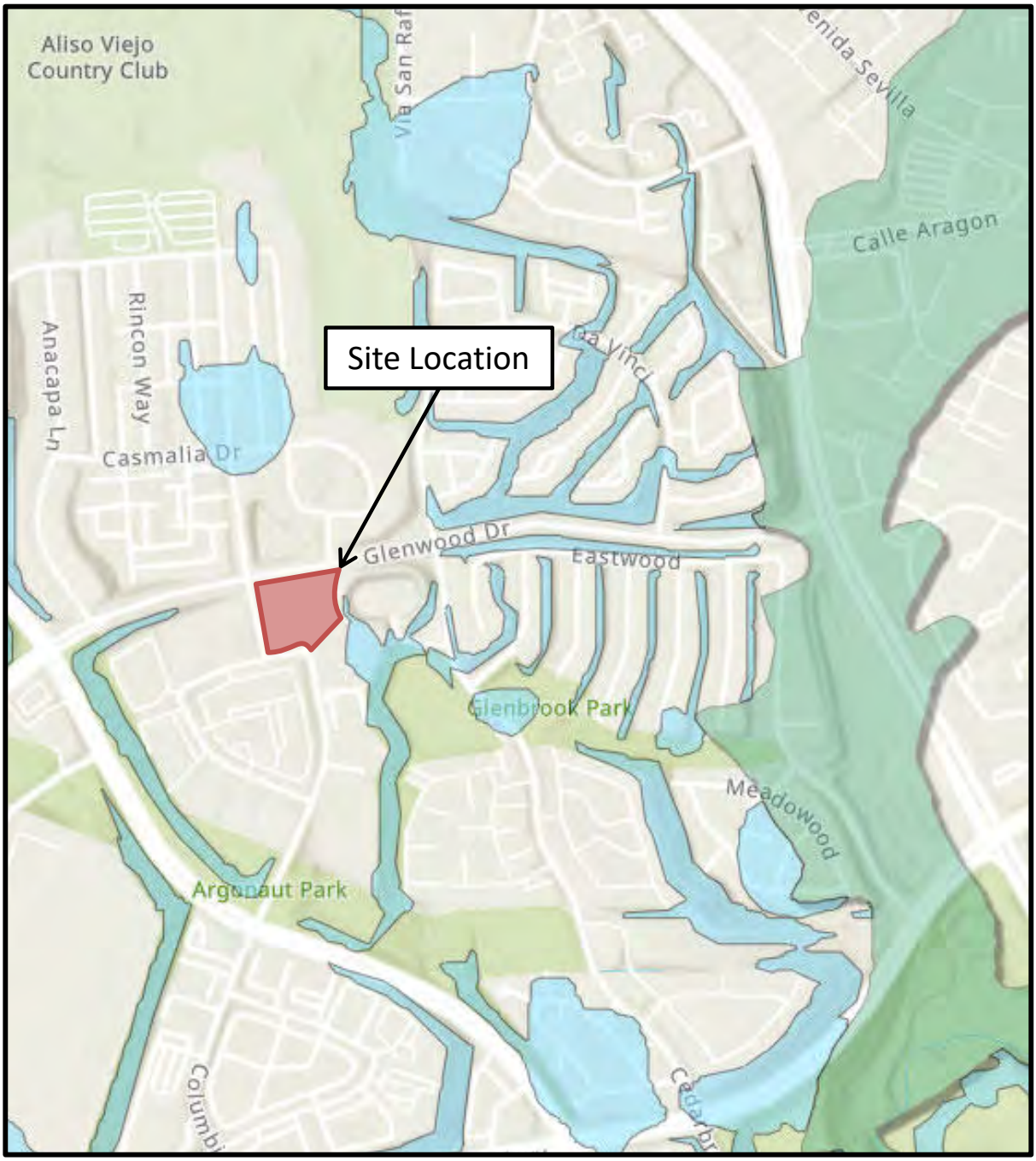
- During site demolition, preparation and clearing;
- During excavations performed for the remedial grading and to relocate or remove existing underground improvements;
- During earthwork, including observation and acceptance of remedial removal bottoms and fill placement, including import material (if any);
- Following the completion of grading, in order to verify soil properties for foundations, slab-on-grade and pavements;
- Upon completion of any foundation or structural excavation, prior to pouring concrete;

- During slab and flatwork subgrade preparation prior to pouring of concrete;
- During placement of backfill for utility trenches;
- During construction of stormwater filtration devices;
- During placement of backfill for retaining structures;
- During installation and backfill of subdrainage systems; and
- When any unusual soil conditions are encountered.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of our client, Meritage Homes, within the scope of services requested for the subject property described herein. This report or its contents should not be used or relied upon for other projects or purposes, or by other parties without the acknowledgement of SA GEO and the consultation of a geotechnical professional. The means and methods used by SA GEO for this study are based on local geotechnical standards of practice, care, and requirements of governing agencies. No warranty or guarantee, expressed or implied, is given.

Our findings, conclusions, and recommendations are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can vary from point to point, can be very different in-between exploration points, and can also change over time. Our conclusions and recommendations are, by nature, preliminary and subject to verification and/or modification during grading and construction when more subsurface data is exposed.

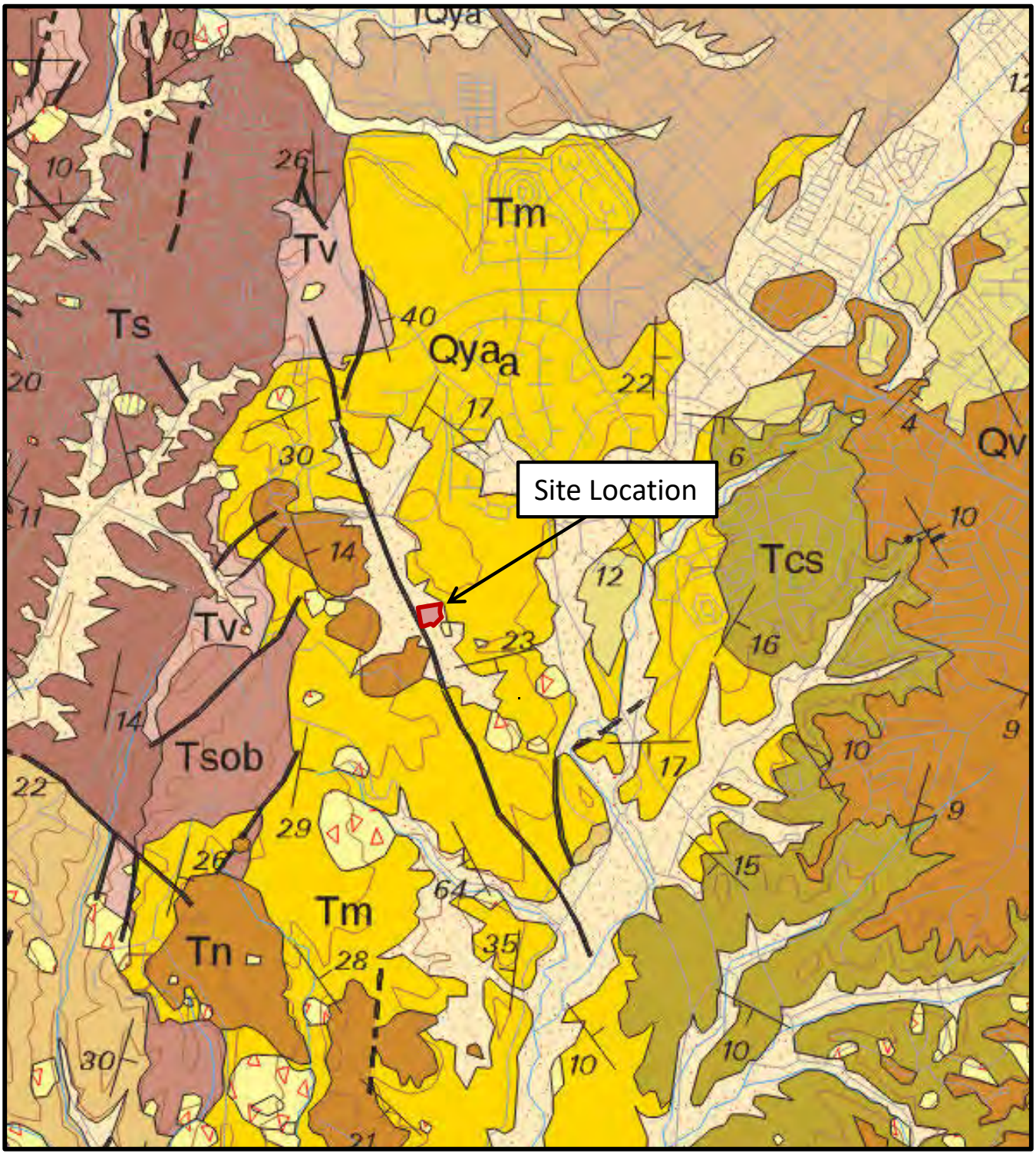


Source: Seismic Hazard Zones, San Juan Capistrano Quadrangle (CDMG, 2001b)

Liquefaction
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resource Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resource Code Section 2693(c) would be required.

Site Location and Seismic Hazard Map		
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 1	S/A



Source: Geologic Map of the San Bernardino and Santa Ana 30' X 60' Quadrangles (USGS, 2006)

Regional Geologic Map		
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 2	S/A



Source: Fault Activity Map of California (Jennings and Bryant, 2010)

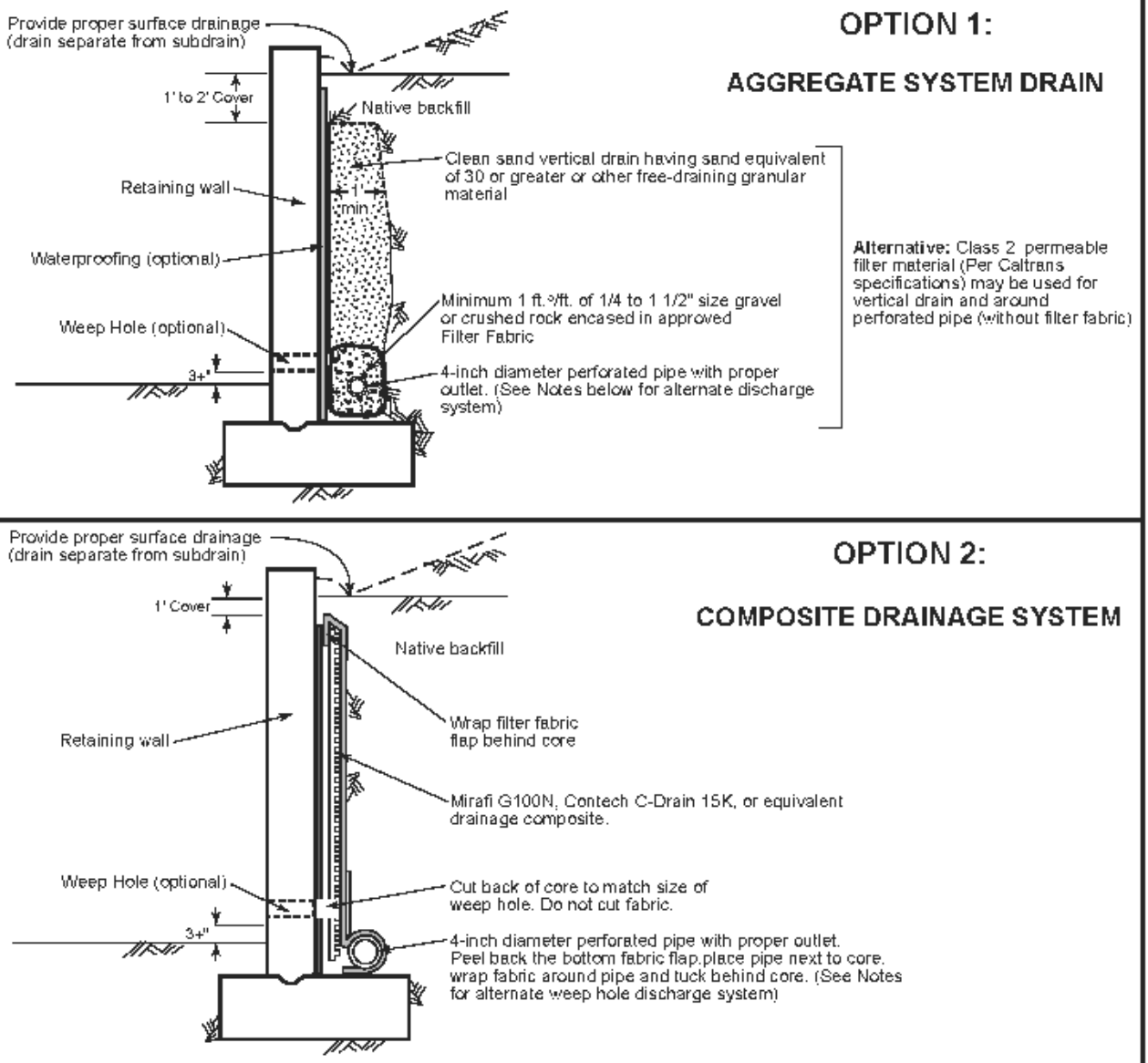
Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissnce nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

Regional Fault Map	
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 3



NOTES:

1. **PIPE TYPE SHOULD BE PVC OR ABS, SCHEDULE 40 OR SDR35 SATISFYING THE REQUIREMENTS OF ASTM TEST STANDARD D1527, D1785, D2751 , OR D3034.**
2. **FILTER FABRIC SHALL BE APPROVED PERMEABLE NON-WOVEN POLYESTER, NYLON, OR POLYPROPYLENE MATERIAL.**
3. **DRAIN PIPE SHOULD HAVE A GRADIENT OF 1 PERCENT MINIMUM.**
4. **WATERPROOFING MEMBRANE MAY BE REQUIRED FOR A SPECIFIC RETAINING WALL (SUCH AS A STUCCO OR BASEMENT WALL).**
5. **WEEP HOLES MAY BE PROVIDED FOR LOW RETAINING WALLS (LESS THAN 3 FEET IN HEIGHT) IN LIEU OF A VERTICAL DRAIN AND PIPE AND WHERE POTENTIAL WATER FROM BEHIND THE RETAINING WALL WILL NOT CREATE A NUISANCE WATER CONDITION. IF EXPOSURE IS NOT PERMITTED, A PROPER SUBDRAIN OUTLET SYSTEM SHOULD BE PROVIDED.**
6. **IF EXPOSURE IS PERMITTED, WEEP HOLES SHOULD BE 2-INCH MINIMUM DIAMETER AND PROVIDED AT 25-FOOT MAXIMUM SPACING ALONG WALL. WEEP HOLES SHOULD BE LOCATED 3+ INCHES ABOVE FINISHED GRADE.**
7. **SCREENING SUCH AS WITH A FILTER FABRIC SHOULD BE PROVIDED FOR WEEP HOLES/OPEN JOINTS TO PREVENT EARTH MATERIALS FROM ENTERING THE HOLES/JOINTS.**
8. **OPEN VERTICAL MASONRY JOINTS (I.E., OMIT MORTAR FROM JOINTS OF FIRST COURSE ABOVE FINISHED GRADE) AT 32-INCH MAXIMUM INTERVALS MAY BE SUBSTITUTED FOR WEEP HOLES.**
9. **THE GEOTECHNICAL CONSULTANT MAY PROVIDE ADDITIONAL RECOMMENDATIONS FOR RETAINING WALLS DESIGNED FOR SELECT SAND BACKFILL.**

Retaining Wall Drainage Detail

1072

Figure 4

Appendix A

APPENDIX A

REFERENCES

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Appendix B

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	*GRAVEL AND GRAVELLY SOILS* MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	*CLEAN GRAVELS* (LITTLE OR NO FINES)	**GW**	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	**GM**	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	*CLEAN SANDS* (LITTLE OR NO FINES)	**SW**	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	**SM**	SILTY SANDS, SAND - SILT MIXTURES
			SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	*SILTS AND CLAYS*	LIQUID LIMIT LESS THAN 50	**ML**	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			**PT**	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Dual symbols are used to indicate gravels or sand with 5-12% fines and soils with fines classifying as CL-ML. Symbols separated by a slash indicate borderline soil classifications.

Sampler and Symbol Descriptions

- Modified California sample (D-#)
- Standard Penetration Test (S-#)
- Shelby tube sample (T-#)
- Large bulk sample (B-#)
- Small bulk sample (SB-#)
- Approximate depth of groundwater during drilling
- Approximate depth of static groundwater

Note: Number of blows required to advance driven sample 12 inches (or length noted).

Laboratory and Field Test Abbreviations

AL	Atterberg limits (plasticity)
CC	Chemical Testing incl. Soluble Sulfate
CN	Consolidation
DS	Direct Shear
EI	Expansion Index
GS	Grain Size Analysis (Sieve, Hydro. and/or -No. 200)
MD	Maximum Density and Optimum Moisture
RV	Resistance Value (R-Value)
SE	Sand Equivalent
UU	Unconsolidated Undrained Shear Strength

Notes:

1. Soil classifications are based on the Unified Soil Classification System and include color, moisture, and relative density or consistency. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate. Bedrock descriptions are based on visual classification and include rock type, moisture, color, grain size, strength, and weathering.
2. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were drilled. They are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO LOG OF BORING

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 1 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB			
0				**Artificial Fill (Af)**			B-1 @ 1-5' GS, AL, MD, EI, CC
	B-1						
	D-1	11	MH	@ 2.5': Mottled olive gray and olive brown clayey SILT, moist, medium stiff, iron staining, trace gravel, diatomaceous.	52.3	68.6	CN
5	D-2	18	MH	@ 5': Mottled olive gray to olive brown clayey SILT, moist, stiff, iron staining, trace caliche, trace gravel, diatomaceous.	47.1	74.1	DS
	D-3	21	MH	@ 7.5': Mottled olive gray and bluish gray clayey SILT, moist, stiff, iron staining, trace gravel and debris, diatomaceous.	47.6	72.9	
10	D-4	14	MH	@ 10': Mottled pale olive gray and pale olive brown clayey SILT, moist, stiff, iron staining, trace caliche, trace gravel, debris, diatomaceous.	72.1	54.3	
15	D-5	17	MH	@ 15': Mottled pale olive gray and pale olive brown clayey SILT, very moist, very stiff, iron staining, trace caliche, diatomaceous.	71.3	57.4	CN
20	D-6	38	CL	@ 20': Mottled black and olive gray silty and fine sandy CLAY, very moist, very stiff to hard, trace organics.	10.9	116.2	
25	D-7	51	CL	@ 25': Mottled black and bluish gray silty/fine sandy CLAY, very moist, hard, trace organics.	13.5	108.3	
30							

Log Of Boring

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Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	56	SC	@ 30': Mottled bluish gray and brownish gray clayey silty fine to medium SAND, very moist, dense, trace caliche nodules.	14.4	117.2	
35	D-9	28	CL	@ 35': Bluish gray to black silty/sandy CLAY, very moist to wet, very stiff, trace coarse gravel, diatomaceous.	47.7	72.1	
40	D-10	21	SC	@ 40': Gray clayey SAND, very moist, medium dense.	18.3	108.6	
45	D-11	27	SC	@ 45': Mottled gray and bluish gray clayey SAND, very moist, medium dense.	18.3	107.8	
50	D-12	24	MH	**Monterey Formation (Tm)** @ 50': Mottled olive gray and olive brown clayey/sandy SILTSTONE, very moist, very stiff, diatomaceous, minor interbeds of fine sandstone, well bedded, thinly bedded to laminated.	57.7	70.5	
55	D-13	22	MH	@ 55': Mottled olive gray and olive brown clayey/sandy SILTSTONE, wet, very stiff, diatomaceous, minor interbeds of fine sandstone, well bedded, thinly bedded to laminated, free water/seepage along bedding planes.	50.0	69.3	
60							

Log Of Boring

Meritage Homes
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Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10”	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30”)	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	50/ 5.5”	MH	@ 60’: Olive brown sandy SILTSTONE, wet, hard, moderately well bedded, thinly laminated, diatomaceous	66.7	59.2	
				Notes: Total Depth: 60.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
65							
70							
75							
80							
85							
90							

Log Of Boring

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Proposed Residential Development
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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: Groundwater Not Encountered.	
Comments:	

H-2

Total Depth Drilled (ft)	41.5
Approximate Ground Surface Elevation (ft)	442

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
0				**Artificial Fill (Af)**			B-1 @ 1-5' GS, AL
	B-1						
	D-1	18	MH	@ 2.5': Mottled olive gray and light gray clayey SILT, very moist, stiff, bedrock fragments, iron staining, diatomaceous.	59.3	63.7	
5	D-2	18	MH	@ 5': Mottled olive gray and light gray clayey SILT, very moist, stiff, bedrock fragments, iron staining, diatomaceous.	50.5	70.5	
	D-3	20	MH	@ 7.5': Mottled dark brown and olive gray clayey SILT, moist, stiff, bedrock fragments, diatomaceous.	58.6	65.8	
10	D-4	33	MH	@ 10': UPPER: Olive gray clayey SILT, moist, very stiff, bedrock fragments, diatomaceous.	46.4	74.2	
			SM	@ 10': LOWER: Pale yellowish brown silty fine to medium SAND, moist, medium dense.			
15	D-5	33	MH	@ 15': Light gray clayey SILT, very moist, very stiff, diatomaceous.	77.5	60.3	
20	D-6	35	MH	@ 20': Pale yellow clayey SILT, very moist, very stiff, diatomaceous.	67.6	55.5	
25	D-7	57	ML	**Monterey Formation (Tm)** @ 25': Pale yellow to white clayey SILTSTONE, very moist, hard, fractured.	26.7	96.9	
30							

Log Of Boring

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Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-2**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 41.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 442
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	27	MH	@ 30': Pale yellow to yellowish brown clayey SILTSTONE, wet, very stiff, diatomaceous.	76.7	53.7	
35	D-9	24	MH	@ 35': Pale yellow to yellowish brown clayey SILTSTONE, wet, very stiff, diatomaceous.	77.7	52.4	
40	D-10	23	MH	@ 40': Reddish brown to olive gray clayey SILTSTONE, wet, very stiff, iron staining, diatomaceous.	86.7	51.1	
45				Notes: Total Depth: 41.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
50							
55							
60							

Log Of Boring

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Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: Groundwater Not Encountered.	
Comments:	

H-3

Total Depth Drilled (ft)	81.5
Approximate Ground Surface Elevation (ft)	441

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 8" AB			
0				**Artificial Fill (Af)**			
	B-1						B-1 @ 1-5' GS
	D-1	24	MH	@ 2.5': Pale olive gray to gray clayey SILT, moist, very stiff, trace coarse sand and fine gravel, diatomaceous.	51.4	71.4	
5	D-2	16	MH	@ 5': Pale olive gray to white clayey SILT, very moist, stiff to very stiff, trace iron staining, diatomaceous.	80.3	51.9	CN
	D-3	15	MH	@ 7.5': Mottled olive gray and black clayey SILT with fine sand, very moist, stiff, diatomaceous.	67.3	66.0	
10	D-4	26	CL	@ 10': Mottled pale olive gray and black silty CLAY with fine sand, very moist to wet, very stiff to hard, diatomaceous.	37.7	86.0	
15	D-5	23	CL	@ 15': Mottled olive gray and black silty CLAY with fine sand, very moist to wet, very stiff, diatomaceous.	37.8	70.9	
20	D-6	22	MH	@ 20': Pale olive gray clayey SILT, very moist to wet, stiff, trace fine gravel, diatomaceous, bedrock fragments up to 3 inches in diameter.	75.8	54.0	
25	D-7	29	CL	@ 25': Mottled olive gray and black silty CLAY, very moist, very stiff, diatomaceous.	38.8	85.0	
30							

Log Of Boring

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: Groundwater Not Encountered.	
Comments:	

H-3

Total Depth Drilled (ft)	81.5
Approximate Ground Surface Elevation (ft)	441

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	39	CL	@ 30': UPPER: Mottled pale olive gray and white silty CLAY, very moist, very stiff, diatomaceous.	18.2	108.7	
			SM	@ 30': LOWER: Yellowish brown silty fine SAND, very moist, medium dense, bedrock fragments.			
35	D-9	35	CL	@ 35': UPPER: Mottled pale bluish gray and black silty CLAY, very moist, hard, slightly diatomaceous, trace gravel.	14.9	117.0	
			SM	@ 35': LOWER: Dark brown silty SAND, very moist, medium dense.			
40	D-10	32	MH	@ 40': Mottled bluish gray and dark gray clayey SILT with fine sand, very moist to wet, very stiff, diatomaceous.	58.2	65.1	
45	D-11	38	CL	@ 45': Mottled bluish gray and black fine sandy CLAY, very moist, very stiff.	15.1	110.8	
50	D-12	29	CL	@ 50': Mottled bluish gray and black fine sandy CLAY, wet, very stiff.	28.5	96.5	
55	D-13	45	CL	@ 55': Mottled bluish gray, yellowish brown, and black fine sandy CLAY, wet, hard, bedrock fragments.	24.9	103.6	
60							

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-3**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 81.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 441
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	27	MH	@ 60': Mottled olive gray and gray clayey SILT, very moist, very stiff, diatomaceous.	54.0	66.2	
65	D-15	25	MH	@ 65': Mottled olive gray and gray clayey SILT, very moist to wet, very stiff, diatomaceous.	51.2	66.1	
70	D-16	13	MH	@ 70': UPPER: Mottled olive gray and gray clayey SILT, wet to saturated, stiff, diatomaceous.	65.7	66.5	
			ML	@ 70': LOWER: Dark brown to black SILT, very moist, stiff.			
75	D-17	88/ 11"	MH	**Monterey Formation (Tm)** @ 75': Dark olive brown to dark gray clayey SILTSTONE, wet, hard, laminated, diatomaceous.	68.0	55.8	
80	D-18	94/ 11"	MH	@ 80': Dark olive brown to dark gray clayey SILTSTONE, wet, hard, laminated, trace fine sand, diatomaceous.	63.6	58.8	
85				Notes: Total Depth: 81.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
90							

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: 55 feet.	
Comments:	

H-4

Total Depth Drilled (ft)	76
Approximate Ground Surface Elevation (ft)	443

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB.			
0	B-1			**Artificial Fill (Af)**			B-1 @ 1-4' AL, EI, CC
	D-1	18	MH	@ 2.5': Mottled olive gray and pale gray clayey SILT, moist, stiff, trace caliche, diatomaceous.	61.4	62.3	DS
5	D-2	17	MH	@ 5': Mottled pale olive gray and white clayey SILT, moist, stiff, trace caliche, diatomaceous.	84.2	50.6	
	D-3	13	MH	@ 7.5': Mottled pale olive gray and white clayey SILT, very moist, stiff, trace caliche, diatomaceous.	77.1	51.4	
10	D-4	10	MH	@ 10': Mottled olive gray and white clayey SILT, very moist to wet, medium stiff, diatomaceous.	63.1	56.1	CN
15	D-5	40	CL	@ 15': Mottled dark brown and olive gray silty/fine sandy CLAY, very moist, very stiff.	14.5	110.7	
20	D-6	66	SC	@ 20': Olive gray clayey fine SAND, very moist, dense, trace fine gravel.	14.9	114.1	
25	D-7	31	SC	@ 25': Dark olive gray clayey fine to medium SAND, very moist, medium dense, trace fine gravel.	17.1	109.5	
30							

Log Of Boring

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: 55 feet.	
Comments:	

H-4

Total Depth Drilled (ft)	76
Approximate Ground Surface Elevation (ft)	443

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	33	SC	@ 30': Mottled dark olive gray and black clayey fine SAND, very moist, medium dense.	13.8	115.3	
35	D-9	42	SC	@ 35': Mottled dark olive gray and black clayey fine SAND, very moist, dense.	13.4	117.9	
40	D-10	24	SC	@ 40': Mottled dark olive gray and black clayey fine SAND, very moist, medium dense, trace claystone fragments.	17.1	113.1	
45	D-11	32	SC	@ 45': Bluish gray clayey fine to medium SAND, very moist, medium dense, minor clean sand interbeds up to 0.25-inch thick.	16.1	108.3	
50	D-12	20	CL	@ 50': Black fine sandy CLAY, very moist to wet, stiff, minor clean sand interbeds up to 0.5-inch thick, grass/vegetation fragments.	21.5	103.1	
55	D-13	50/6"	SP	**Niguel Formation (Tn)** @ 55': Yellowish brown fine to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated. @ 55': Groundwater	19.8	101.9	
60							

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-4**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 76
Approximate Groundwater Depth: 55 feet.		**Approximate Ground Surface Elevation (ft)** 443
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	90/ 9"	SP	@ 60': Yellowish brown fine to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated.	18.3	109.8	
65	D-15	50/ 6"	SP	@ 65': Yellowish brown medium to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated.	15.4	115.2	
70							
75	D-16	50/ 3.5"	SP-SM	@ 75': Yellowish brown to yellowish gray fine to coarse SANDSTONE with silt, saturated, very dense, micaceous, shell fragments, weakly indurated.	23.8	96.6	
80				Notes: Total Depth: 76.0 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
85							
90							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Appendix C

MATERIALS FINER THAN 75-µm (No. 200) SIEVE by WASHING

ASTM D1140

Client: SA Geotechnical, Inc
Project: 95 Argonaut
Project No.: 24059-01

HAI Project No.: SAG-24-018-2
Performed by: GA
Checked by: KL
Date: 5/6/2024

Boring No.	Sample No.	Depth (ft)	Sample Description (USCS)	Dry Soil before Wash + $W_{Container}$	Dry Soil after #200 Wash + $W_{Container}$	$W_{Container}$	Wt of soil retained on # 200 sieve	Initial wt of dry soil	**Soil % passing 200 sieve**
				g	g	g	g	g	**%**
H-1	B-1	0-5	Olive, Sandy Elastic Silt (MH)	520.19	329.13	221.19	107.94	299.00	**63.90**
H-2	B-1	0-5	Olive Gray, Elastic Silt with Sand (MH)	533.02	305.89	220.07	85.82	312.95	**72.58**
H-3	B-1	0-5	Olive Gray, Elastic Silt with Sand (MH)	466.67	288.21	222.20	66.01	244.47	**73.00**

Liquid Limit, Plastic Limit, and Plasticity Index of Soils

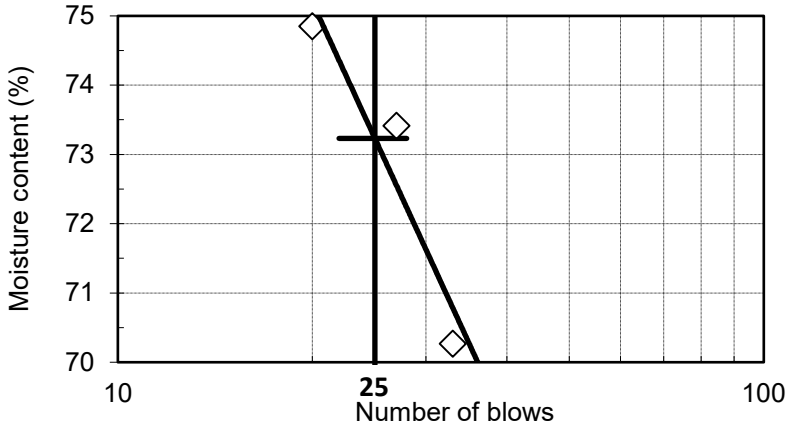
ASTM D4318

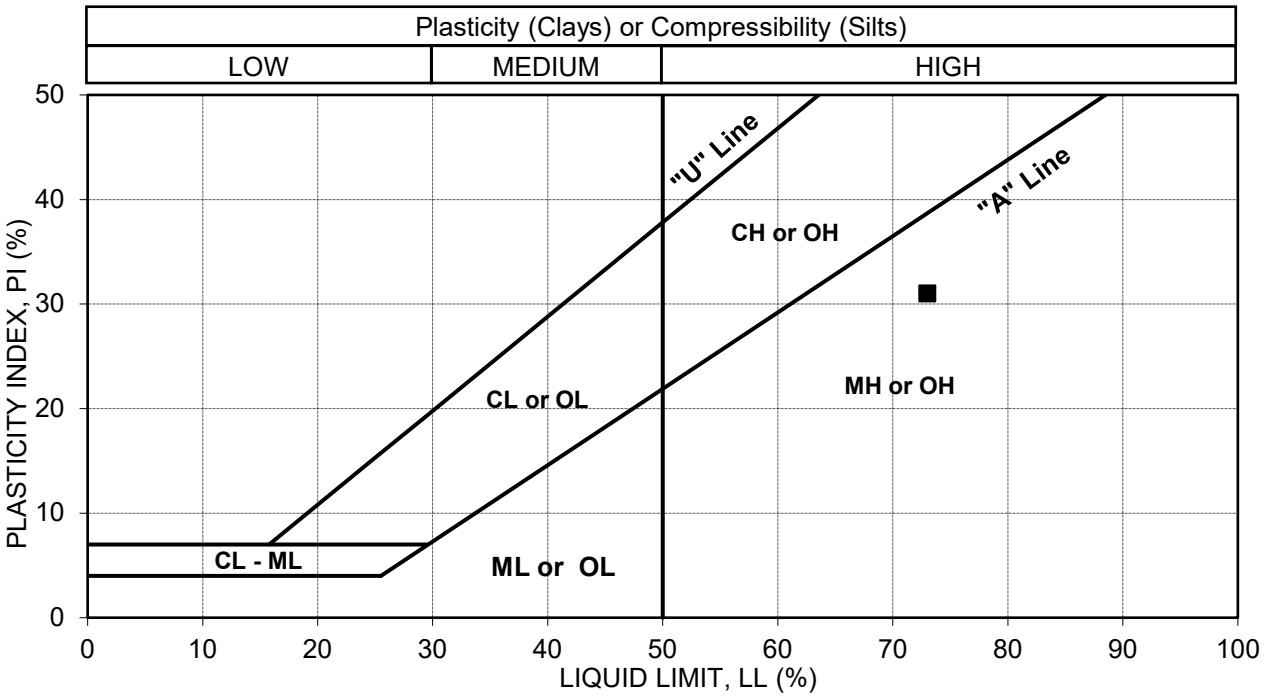
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**33**	**27**	**20**	-	-
Wt. of Wet Soil + Container	(g)	25.83	25.43	25.6	12.89	12.84
Wt. of Dry soil + Container	(g)	19.78	19.41	19.23	10.37	10.32
Wt. of Container	(g)	11.17	11.21	10.72	4.28	4.31
Water content	**(%)**	**70.3**	**73.4**	**74.9**	**41.4**	**41.9**

Liquid Limit (LL)	**73**
Plastic Limit (PL)	**42**
Plasticity Index (PI)	**31**
USCS	**MH**

Remarks:





Liquid Limit, Plastic Limit, and Plasticity Index of Soils

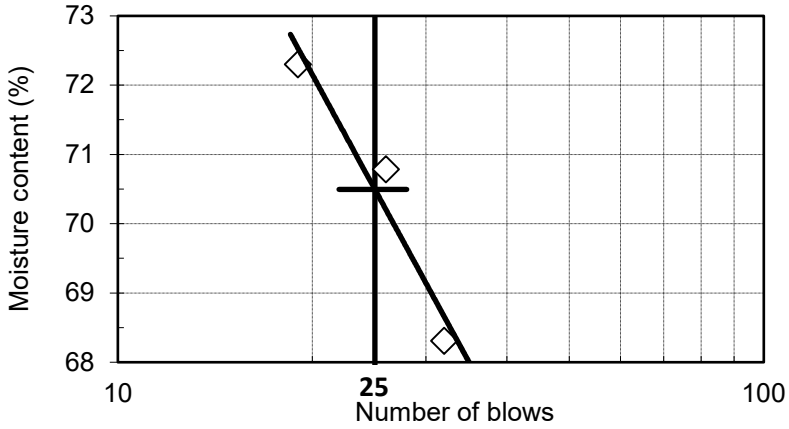
ASTM D4318

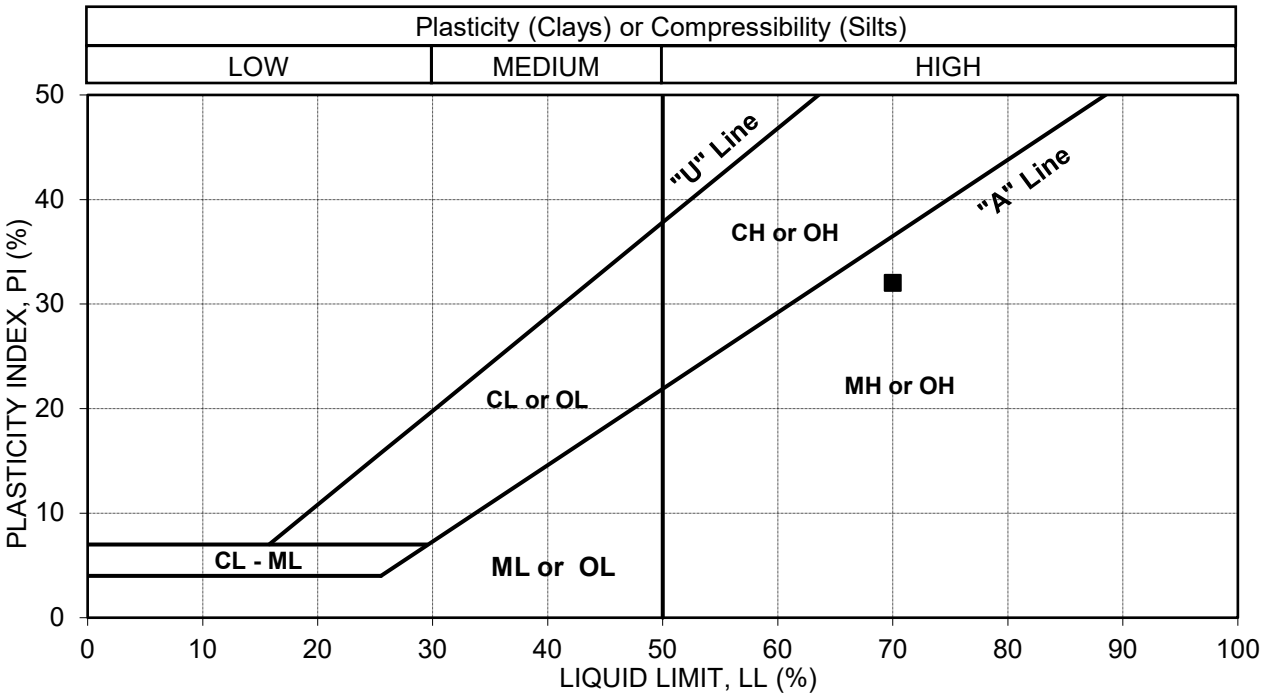
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-2	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**32**	**26**	**19**	-	-
Wt. of Wet Soil + Container	(g)	26.3	26.4	26.47	12.6	12.96
Wt. of Dry soil + Container	(g)	20.2	20.1	19.97	10.29	10.57
Wt. of Container	(g)	11.27	11.2	10.98	4.25	4.18
Water content	**(%)**	**68.3**	**70.8**	**72.3**	**38.2**	**37.4**

Liquid Limit (LL)	**70**
Plastic Limit (PL)	**38**
Plasticity Index (PI)	**32**
USCS	**MH**

Remarks:





Liquid Limit, Plastic Limit, and Plasticity Index of Soils

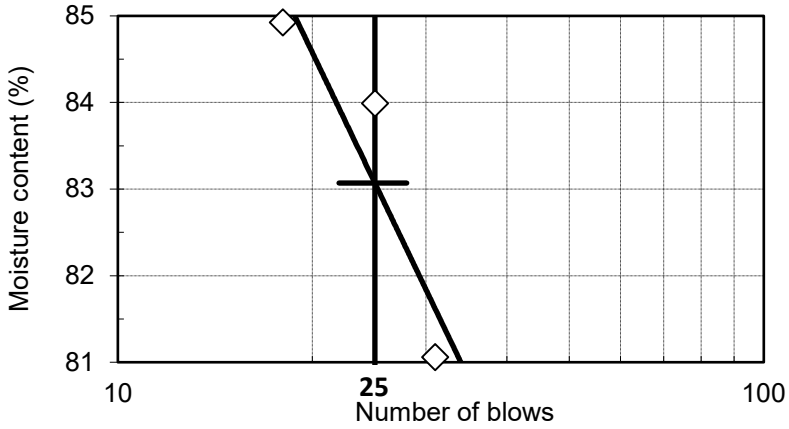
ASTM D4318

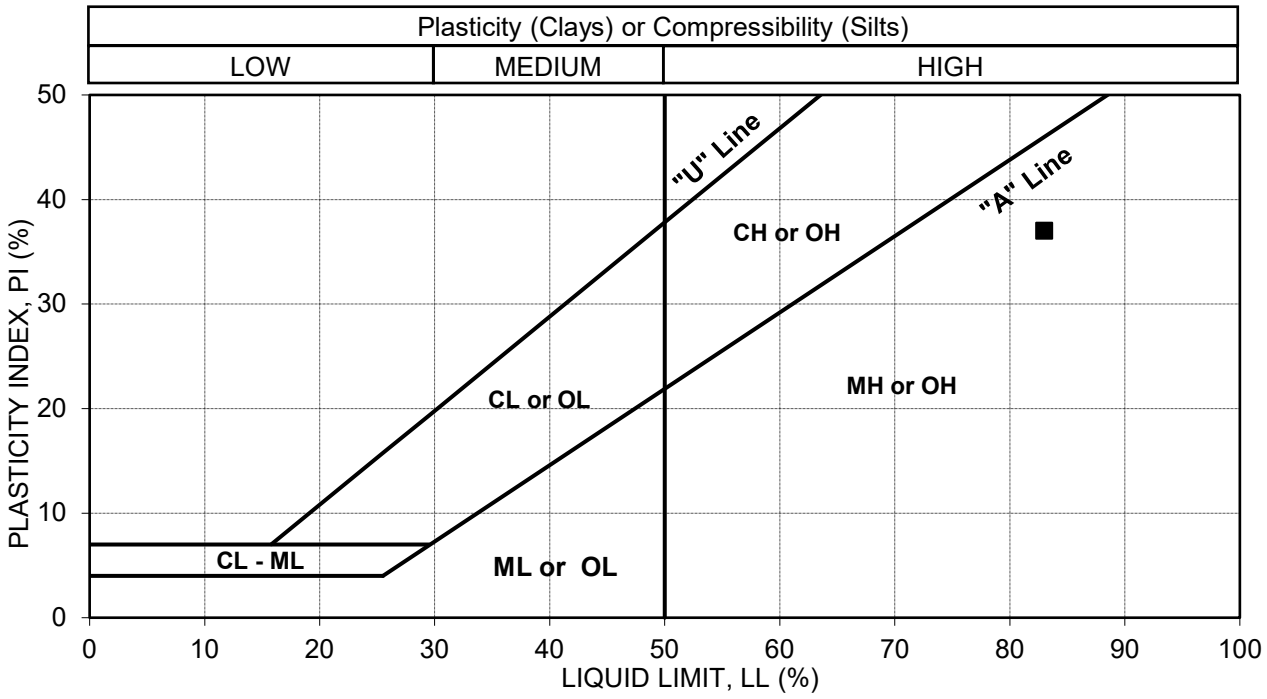
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**31**	**25**	**18**	-	-
Wt. of Wet Soil + Container	(g)	26.92	26.3	26.43	12.92	12.79
Wt. of Dry soil + Container	(g)	20.03	19.27	19.5	10.18	10.12
Wt. of Container	(g)	11.53	10.9	11.34	4.22	4.33
Water content	**(%)**	**81.1**	**84.0**	**84.9**	**46.0**	**46.1**

Liquid Limit (LL)	**83**
Plastic Limit (PL)	**46**
Plasticity Index (PI)	**37**
USCS	**MH**

Remarks:





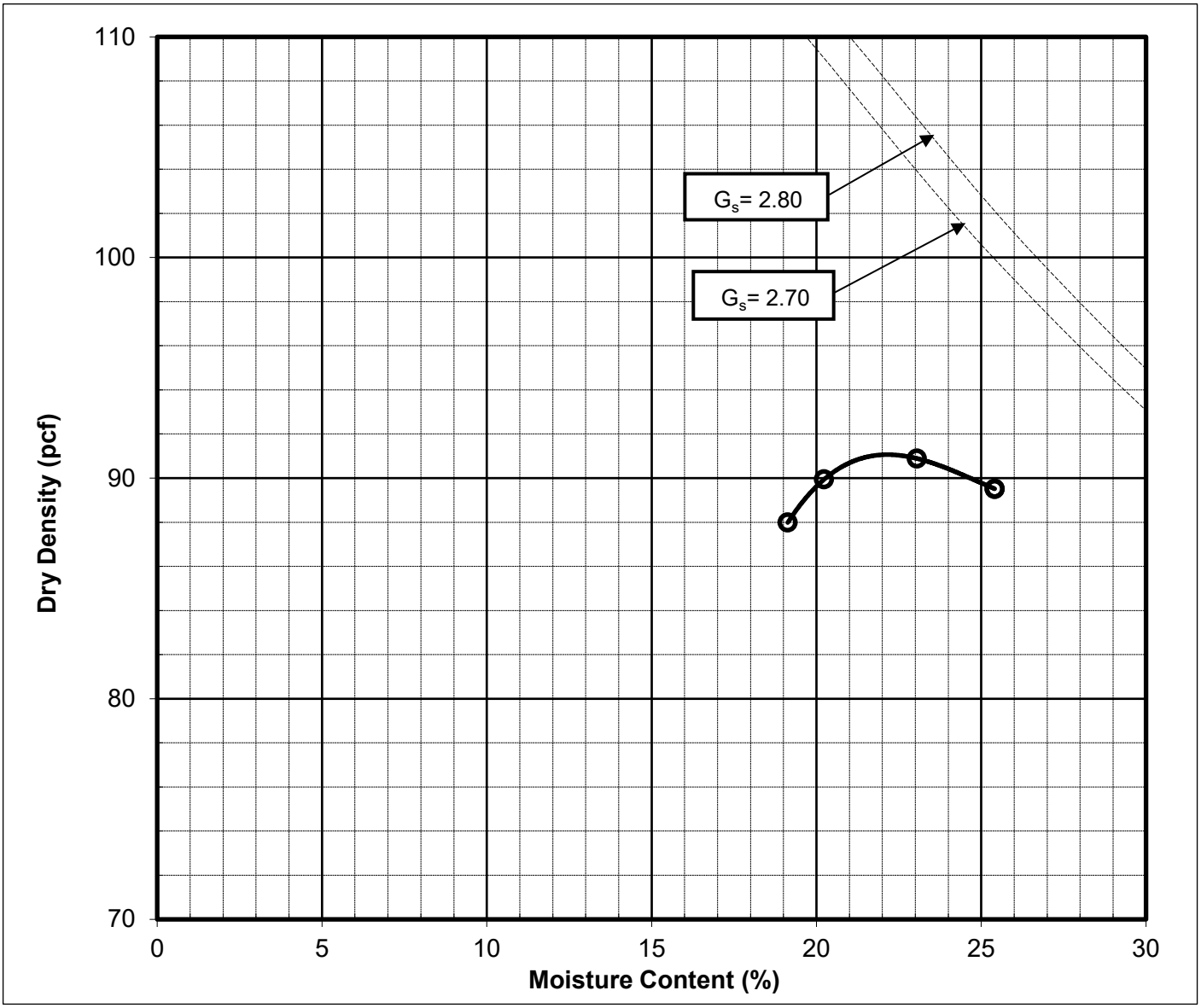
Compaction Characteristics of Soils Using Modified Effort

ASTM D1557

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring Number:	H-1	*Date:*	05/06/24
Sample Number:	B-1		
Depth (ft) :	0-5		
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Mold size (in)	4"
Procedure	B
Weight Retained on:	7.7
Remarks:	

Maximum Dry Density (pcf)	**91.1**
Optimum Moisture Content (%)	**11.7**
Corrected Maximum Dry Density (pcf)	**94.1**
Corrected Optimum Moisture Content (%)	**10.8**



EXPANSION INDEX

ASTM D4829

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-1	*Date:*	5/6/2024
Sample No.:	B-1		
Depth (ft):	0-5	*Apparatus No.:*	1
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Initial Specimen Info		
Wt. of wet soil + cont.	184.51	g
Wt. of dry soil + cont.	156.08	g
Wt. of container	11.29	g
Wt. of water	28.43	g
Wt. of dry soil	144.79	g
Moisture Content	**19.6**	**%**

Final Specimen Info		
Wt. of wet soil + cont.	594.84	g
Wt. of dry soil + cont.	472.51	g
Wt. of container	206.54	g
Wt. of water	122.33	g
Wt. of dry soil	265.97	g
Moisture Content	**46.0**	**%**

Wt. of wet soil + ring	528.85	g
Wt. of ring	206.54	g
Wt. of wet soil	322.31	g
Wet density of soil	98.8	pcf
Dry density of soil	82.6	pcf
Specific gravity of soil	2.68	-
Saturation	**51.4**	**%**

Date & Time	**Elapsed Time (min)**	**Dial Reading**	**Δh, Expansion**
5/17/2024 10:25	0	0	0
5/17/2024 10:35	10	0.0000	0
Add Distilled Water to Sample			
5/18/2024 10:25	1440	0.0909	0.0909

Expansion Index = **91** **High**

EXPANSION INDEX

ASTM D4829

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-4	*Date:*	5/6/2024
Sample No.:	B-1		
Depth (ft):	0-5	*Apparatus No.:*	2
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Initial Specimen Info		
Wt. of wet soil + cont.	163.33	g
Wt. of dry soil + cont.	138.46	g
Wt. of container	23.29	g
Wt. of water	24.87	g
Wt. of dry soil	115.17	g
Moisture Content	**21.6**	**%**

Final Specimen Info		
Wt. of wet soil + cont.	582.98	g
Wt. of dry soil + cont.	45395.00	g
Wt. of container	206.33	g
Wt. of water	-44812.02	g
Wt. of dry soil	45188.67	g
Moisture Content	**-99.2**	**%**

Wt. of wet soil + ring	511.95	g
Wt. of ring	206.33	g
Wt. of wet soil	305.62	g
Wet density of soil	95.2	pcf
Dry density of soil	78.3	pcf
Specific gravity of soil	2.68	-
Saturation	**50.9**	**%**

Date & Time	**Elapsed Time (min)**	**Dial Reading**	**Δh, Expansion**
5/17/2024 11:00	0	0	0
5/17/2024 11:10	10	0.0000	0
Add Distilled Water to Sample			
5/18/2024 11:00	1440	0.1036	0.1036

Expansion Index = **104** **High**

HUSHMAND ASSOCIATES, INC.
Geotechnical and Earthquake Engineers

DIRECT SHEAR TEST

ASTM D3080

HAI Project No.: SAG-24-018-2

Tested by: GA

Checked by: KL

Date: 5/6/2024

Client: SA Geotechnical, Inc

Project Name: 95 Argonaut

Project Number: 24059-01

Boring No.: H-1

Sample No.: D-2

Sample Type: Undisturbed Ring

Depth (ft): 5

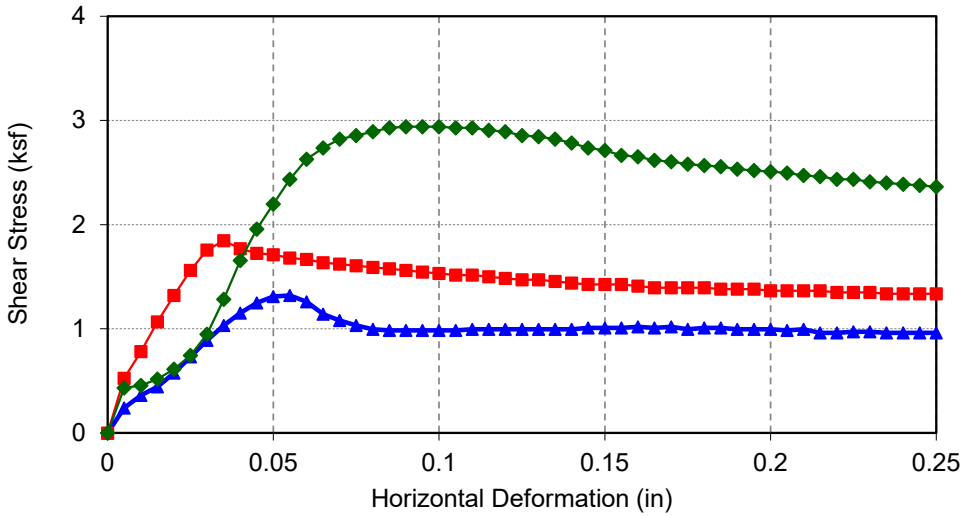
Soil Description: Olive Gray, Elastic Silt with Sand (MH)

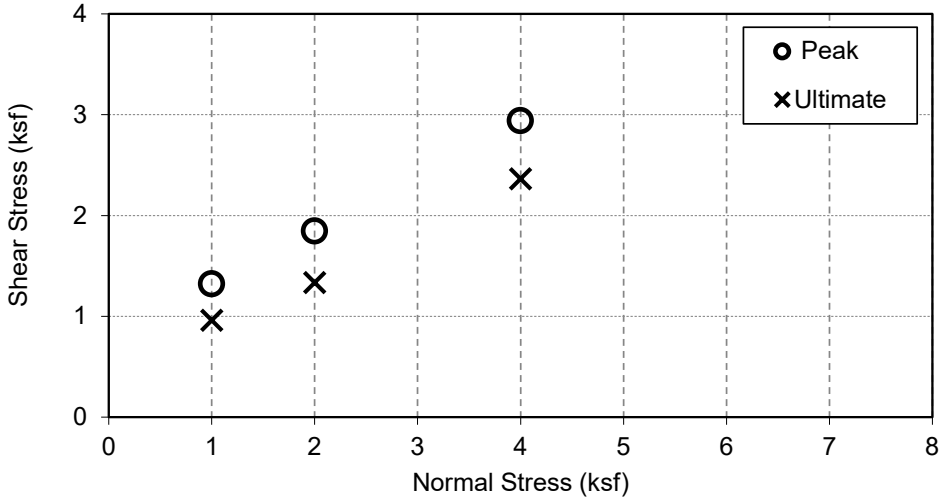
Type of test: **Consolidated, Drained**

Test No.	1	2	3
Symbol	▲	■	◆
Normal Stress (ksf)	**1**	**2**	**4**
Deformation Rate (in/min)	**0.002**	**0.002**	**0.002**

Peak Shear Stress (ksf)	**O**	**1.32**	**1.85**	**2.94**
Shear Stress @ End of Test (ksf)	**X**	**0.96**	**1.34**	**2.36**

Initial Height of Sample (in)	1.000	1.000	1.000
Height of Sample before Shear (in)	0.9998	0.9936	0.9883
Diameter of Sample (in)	2.416	2.416	2.416
Initial Moisture Content (%)	**43.8**	**43.8**	**43.8**
Final Moisture Content (%)	**54.3**	**52.5**	**50.4**
Dry Density (pcf)	**71.1**	**71.4**	**72.3**





DIRECT SHEAR TEST

ASTM D3080

HUSHMAND ASSOCIATES, INC.
Geotechnical and Earthquake Engineers

HAI Project No.: SAG-24-018-2

Client: SA Geotechnical, Inc
Project Name: 95 Argonaut
Project Number: 24059-01
Boring No.: H-4
Sample No.: D-1
Sample Type: Undisturbed Ring
Depth (ft): 2.5
Soil Description: Olive Gray, Elastic Silt with Sand (MH)

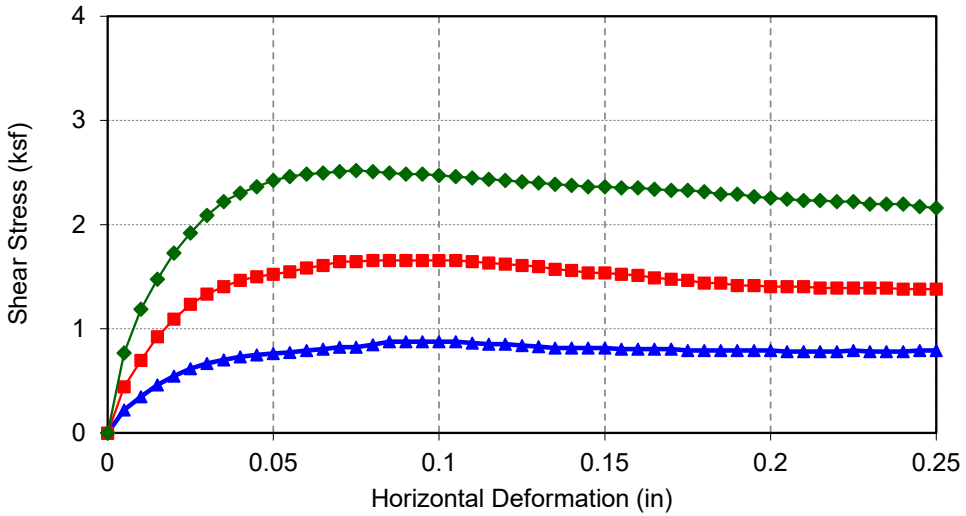
Tested by: GA
Checked by: KL
Date: 5/6/2024

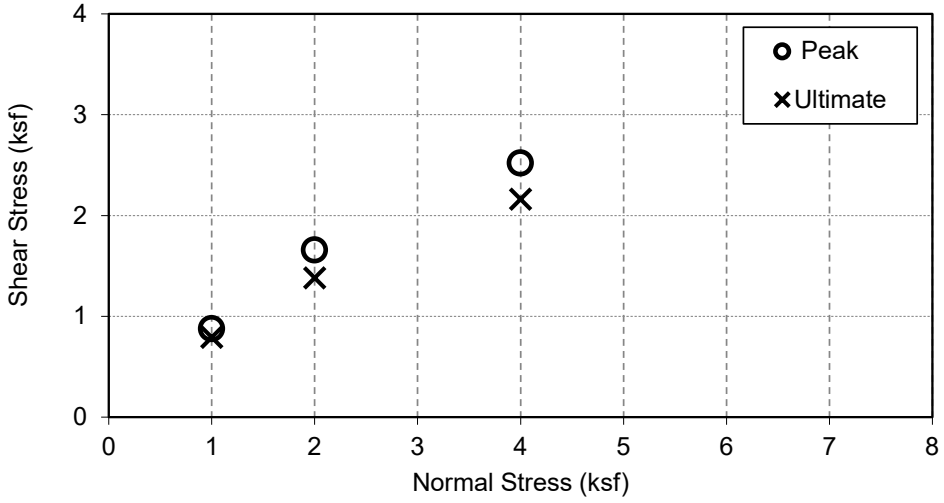
Type of test: **Consolidated, Drained**

Test No.	1	2	3
Symbol	▲	■	◆
Normal Stress (ksf)	**1**	**2**	**4**
Deformation Rate (in/min)	**0.002**	**0.002**	**0.002**

Peak Shear Stress (ksf)	**O**	**0.88**	**1.66**	**2.52**
Shear Stress @ End of Test (ksf)	**X**	**0.79**	**1.38**	**2.16**

Initial Height of Sample (in)	1.000	1.000	1.000
Height of Sample before Shear (in)	1.0004	0.9954	0.9909
Diameter of Sample (in)	2.416	2.416	2.416
Initial Moisture Content (%)	**56.4**	**56.4**	**56.4**
Final Moisture Content (%)	**68.8**	**61.8**	**52.6**
Dry Density (pcf)	**61.0**	**62.8**	**65.8**





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-1		
Type of Sample:	Undisturbed ring		
Depth (ft):	2.5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
112.80	108.29	66.73

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.900
Height of Solids	H_s	(in)	0.324	0.324
Height of Water	H_w	(in)	0.613	0.553
Height of Air	H_a	(in)	0.063	0.023
Dry Density		**(pcf)**	**55.4**	**68.4**
Water Content		**(%)**	**69.0**	**62.3**
Saturation		**(%)**	**90.7**	**96.1**

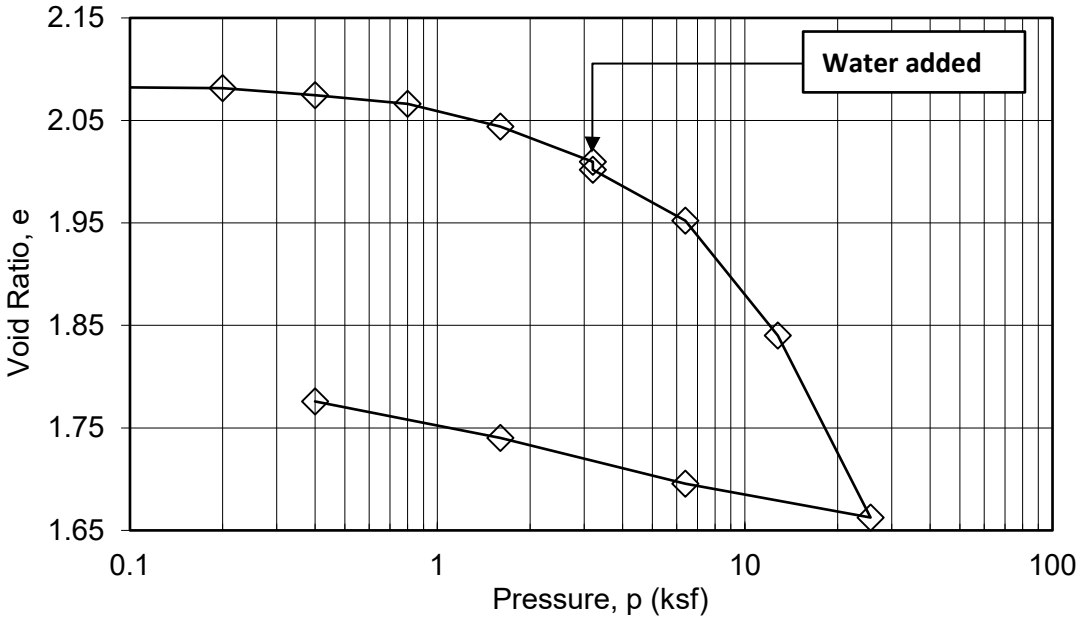
* Saturation is calculated based on Gs= 2.74

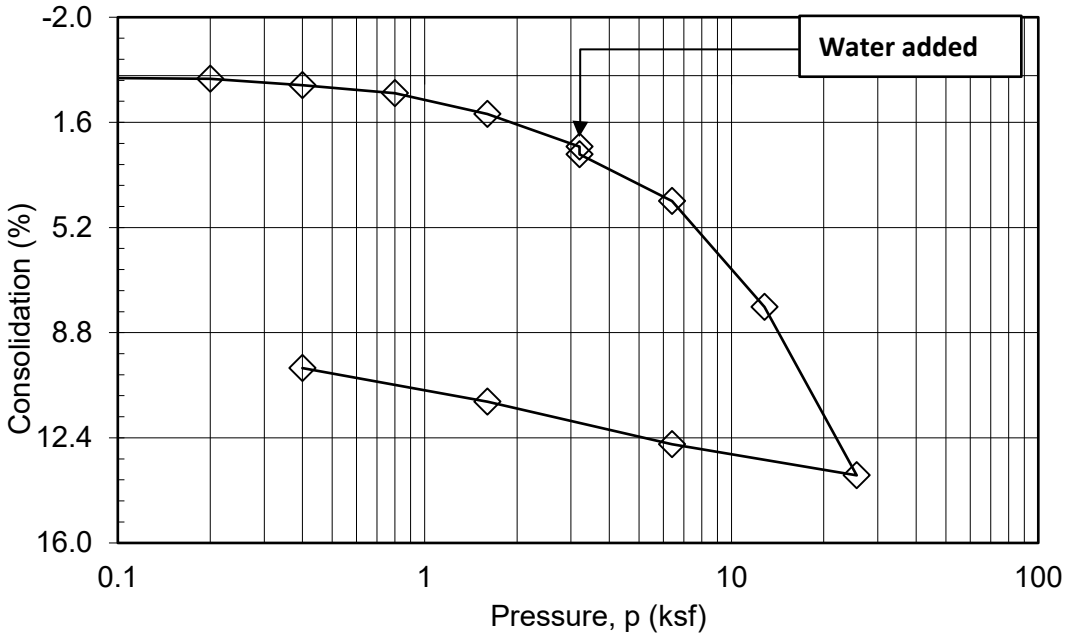
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.676	2.085	0			
0.2	0.0011	0.9990	0.675	2.081	0.1	1.7E-02	5.5E-03	
0.4	0.0033	0.9967	0.673	2.075	0.3	3.5E-02	1.1E-02	
0.8	0.0060	0.9940	0.670	2.066	0.6	2.1E-02	6.8E-03	
1.6	0.0132	0.9869	0.663	2.044	1.3	2.8E-02	9.1E-03	
3.2	0.0244	0.9757	0.651	2.010	2.4	2.2E-02	7.2E-03	
3.2	0.0269	0.9731	0.649	2.002	2.7	Water Added		
6.4	0.0430	0.9571	0.633	1.952	4.3	1.5E-02	5.2E-03	
12.8	0.0793	0.9208	0.597	1.840	7.9	1.7E-02	6.2E-03	
25.6	0.1369	0.8632	0.539	1.663	13.7	1.4E-02	5.2E-03	
6.4	0.1262	0.8739	0.550	1.696	12.6	Unloaded		
1.6	0.1117	0.8884	0.564	1.740	11.2			
0.4	0.1001	0.8999	0.576	1.776	10.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-1		
Type of Sample:	Undisturbed ring		
Depth (ft):	2.5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-5		
Type of Sample:	Undisturbed ring		
Depth (ft):	15		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
117.41	112.21	70.29

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.915
Height of Solids	H_s	(in)	0.341	0.341
Height of Water	H_w	(in)	0.627	0.558
Height of Air	H_a	(in)	0.031	0.015
Dry Density		**(pcf)**	**58.4**	**69.8**
Water Content		**(%)**	**67.0**	**59.6**
Saturation		**(%)**	**95.2**	**97.3**

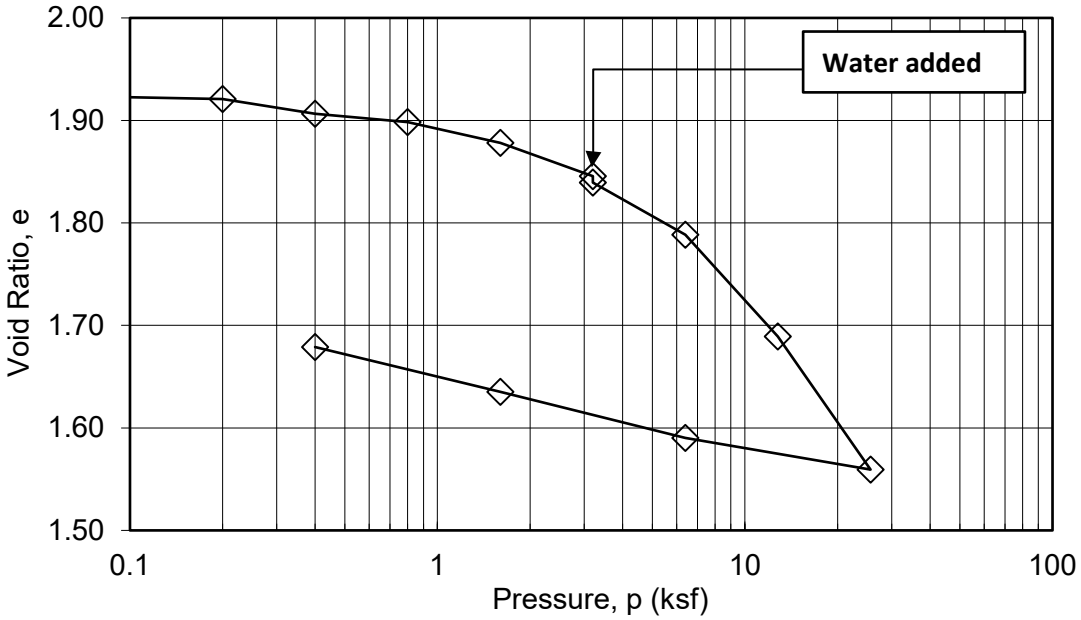
* Saturation is calculated based on Gs= 2.74

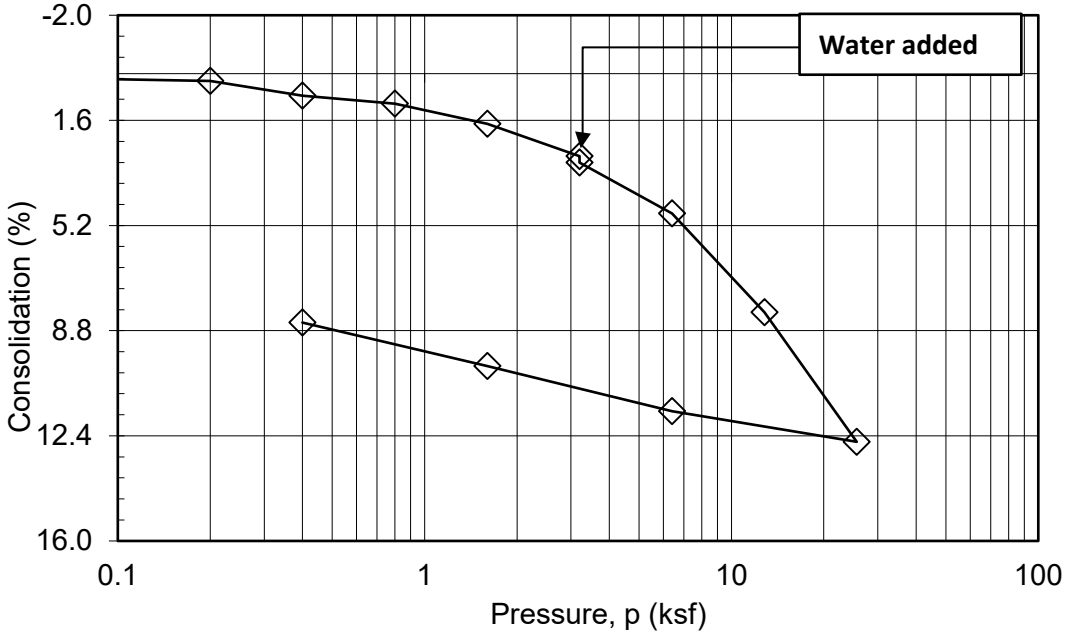
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.659	1.928	0			
0.2	0.0025	0.9975	0.656	1.921	0.3	3.9E-02	1.3E-02	
0.4	0.0075	0.9925	0.651	1.907	0.8	7.2E-02	2.5E-02	
0.8	0.0103	0.9897	0.648	1.898	1.0	2.0E-02	7.1E-03	
1.6	0.0172	0.9828	0.641	1.878	1.7	2.5E-02	8.8E-03	
3.2	0.0283	0.9717	0.630	1.846	2.8	2.0E-02	7.1E-03	
3.2	0.0304	0.9696	0.628	1.839	3.0	Water Added		
6.4	0.0479	0.9522	0.611	1.788	4.8	1.6E-02	5.7E-03	
12.8	0.0818	0.9183	0.577	1.689	8.2	1.6E-02	5.8E-03	
25.6	0.1261	0.8740	0.532	1.559	12.6	1.0E-02	4.0E-03	
6.4	0.1156	0.8845	0.543	1.590	11.6	Unloaded		
1.6	0.1001	0.8999	0.558	1.635	10.0			
0.4	0.0852	0.9148	0.573	1.679	8.5			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-5		
Type of Sample:	Undisturbed ring		
Depth (ft):	15		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-3	*Date:*	05/06/24
Sample No.:	D-2		
Type of Sample:	Undisturbed ring		
Depth (ft):	5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
108.17	103.32	58.52

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.900
Height of Solids	H_s	(in)	0.284	0.284
Height of Water	H_w	(in)	0.661	0.596
Height of Air	H_a	(in)	0.055	0.020
Dry Density		**(pcf)**	**48.6**	**60.0**
Water Content		**(%)**	**84.8**	**76.6**
Saturation		**(%)**	**92.3**	**96.8**

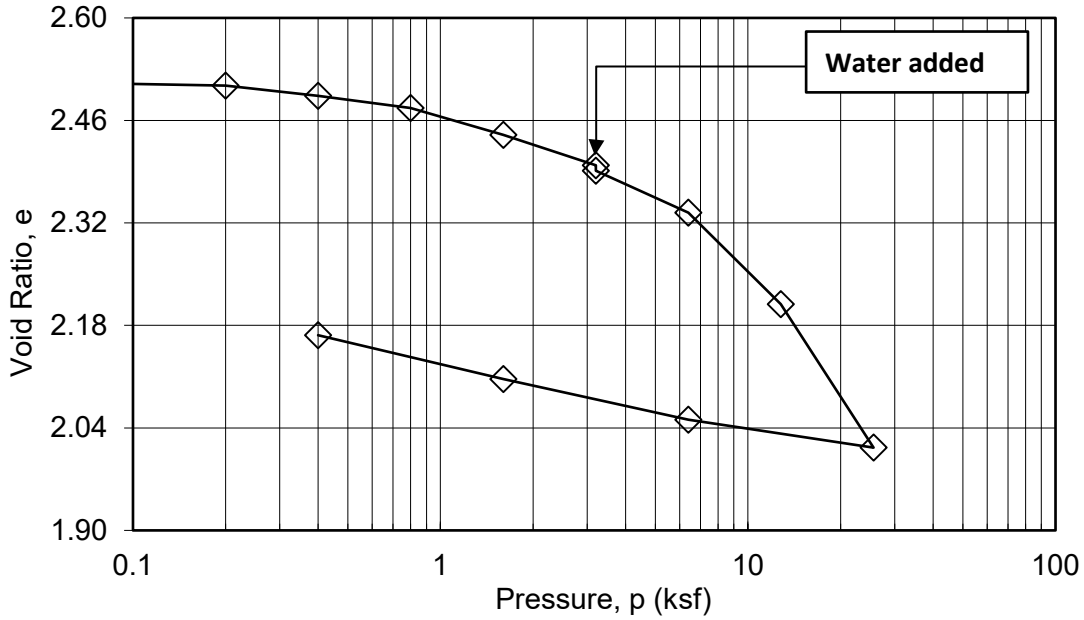
* Saturation is calculated based on Gs= 2.74

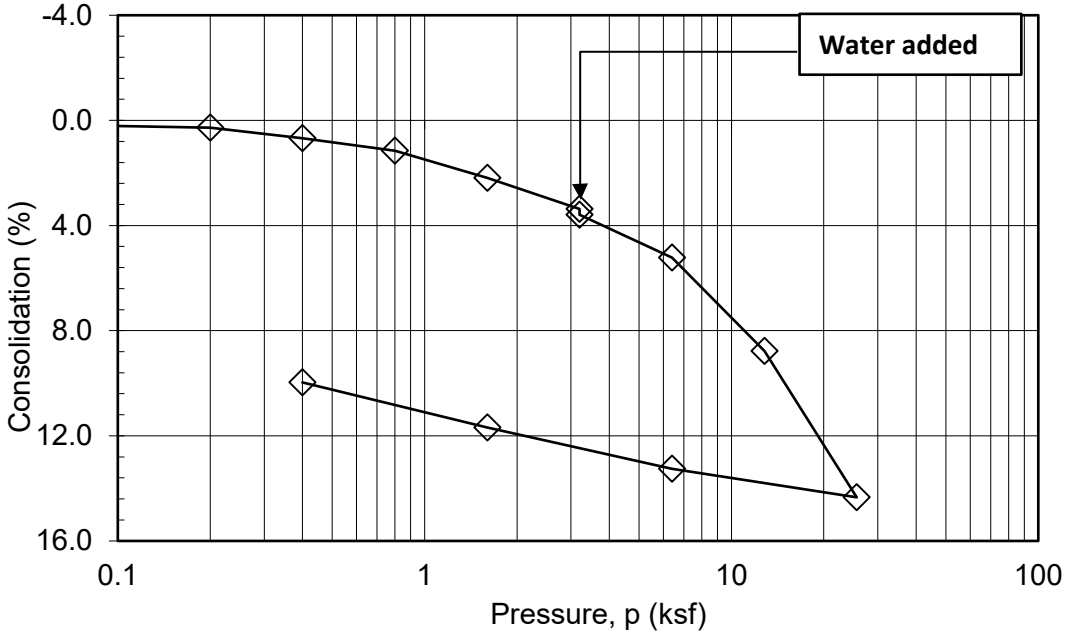
Load (ksf)	δH (in)	H (in)	Voids (in)	e	Consol. (%)	a_v (ksf^{-1})	M_v (ksf^{-1})	Comment
0.01	-------	1.0000	0.716	2.517	0			
0.2	0.0028	0.9972	0.713	2.508	0.3	5.2E-02	1.5E-02	
0.4	0.0068	0.9932	0.709	2.494	0.7	7.0E-02	2.0E-02	
0.8	0.0115	0.9885	0.704	2.477	1.1	4.1E-02	1.2E-02	
1.6	0.0219	0.9781	0.694	2.440	2.2	4.6E-02	1.3E-02	
3.2	0.0338	0.9663	0.682	2.399	3.4	2.6E-02	7.7E-03	
3.2	0.0359	0.9641	0.680	2.391	3.6	Water Added		
6.4	0.0522	0.9479	0.664	2.334	5.2	1.8E-02	5.4E-03	
12.8	0.0878	0.9123	0.628	2.209	8.8	2.0E-02	6.1E-03	
25.6	0.1434	0.8566	0.572	2.013	14.3	1.5E-02	5.1E-03	
6.4	0.1326	0.8675	0.583	2.051	13.3	Unloaded		
1.6	0.1168	0.8832	0.599	2.107	11.7			
0.4	0.0997	0.9003	0.616	2.167	10.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-3	*Date:*	05/06/24
Sample No.:	D-2		
Type of Sample:	Undisturbed ring		
Depth (ft):	5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	D-4		
Type of Sample:	Undisturbed ring		
Depth (ft):	10		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
111.40	103.94	59.64

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.880
Height of Solids	H_s	(in)	0.290	0.290
Height of Water	H_w	(in)	0.689	0.590
Height of Air	H_a	(in)	0.021	0.000
Dry Density		**(pcf)**	**49.5**	**64.0**
Water Content		**(%)**	**86.8**	**74.3**
Saturation		**(%)**	**97.0**	**99.9**

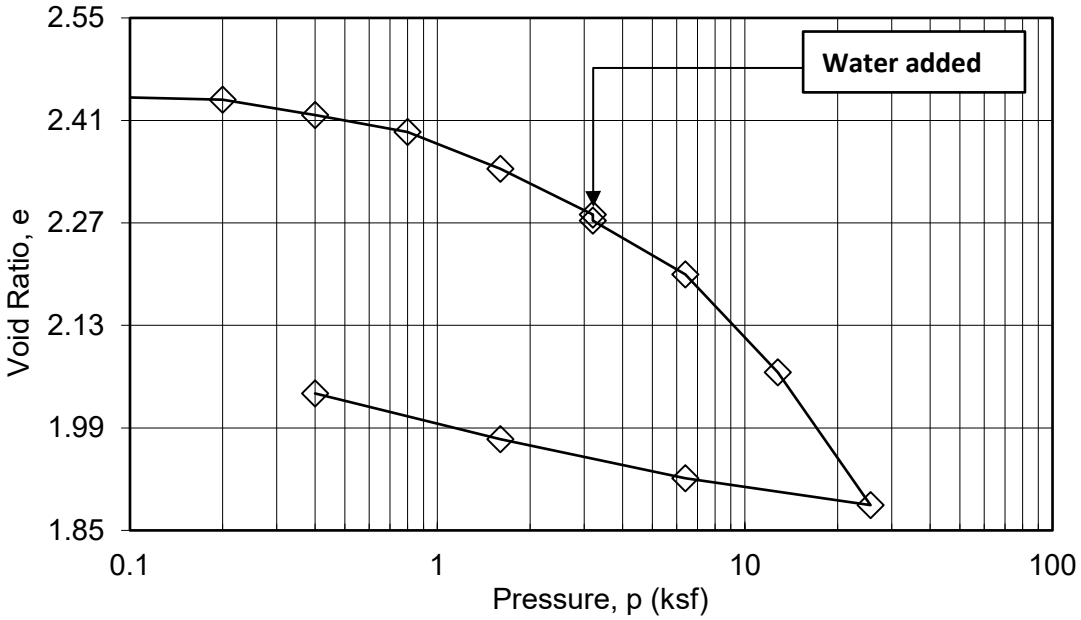
* Saturation is calculated based on Gs= 2.74

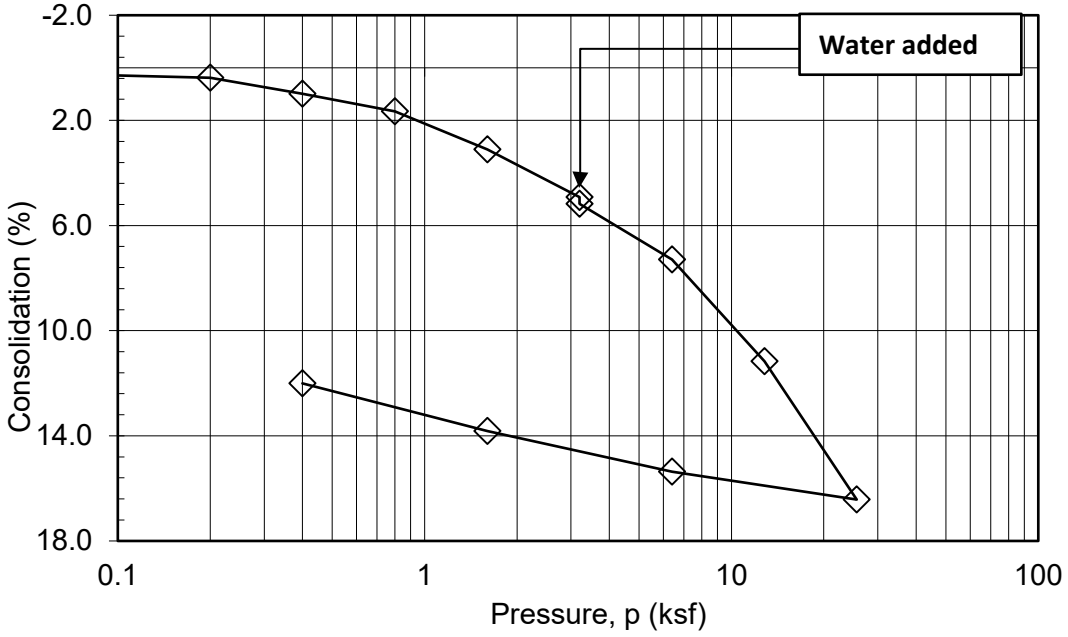
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.710	2.451	0			
0.2	0.0038	0.9963	0.707	2.438	0.4	6.8E-02	2.0E-02	
0.4	0.0099	0.9901	0.700	2.417	1.0	1.1E-01	3.1E-02	
0.8	0.0166	0.9834	0.694	2.394	1.7	5.8E-02	1.7E-02	
1.6	0.0311	0.9689	0.679	2.344	3.1	6.3E-02	1.9E-02	
3.2	0.0492	0.9508	0.661	2.282	4.9	3.9E-02	1.2E-02	
3.2	0.0517	0.9483	0.659	2.273	5.2	Water Added		
6.4	0.0729	0.9271	0.637	2.200	7.3	2.3E-02	7.1E-03	
12.8	0.1117	0.8883	0.599	2.066	11.2	2.1E-02	6.8E-03	
25.6	0.1643	0.8358	0.546	1.885	16.4	1.4E-02	4.9E-03	
6.4	0.1536	0.8464	0.557	1.921	15.4	Unloaded		
1.6	0.1382	0.8618	0.572	1.974	13.8			
0.4	0.1201	0.8799	0.590	2.037	12.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	D-4		
Type of Sample:	Undisturbed ring		
Depth (ft):	10		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





Soil Analysis Lab Results

Client: HAI
Job Name: 95 Argonaut
Client Job Number: SAG-24-018-2 / 24059-01
Project X Job Number: S240515F
May 17, 2024

	Method	ASTM D4327		ASTM D4327	
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-	
	(ft)	**(mg/kg)**	**(wt%)**	**(mg/kg)**	**(wt%)**
H-1 B-1	0-5	768.4	0.0768	156.2	0.0156
H-4 B-1	0-5	713.1	0.0713	82.9	0.0083

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

Note: Sometimes a bad sulfate hit is a contaminated spot. Typical fertilizers are Potassium chloride, ammonium sulfate or ammonium sulfate nitrate (ASN). So this is another reason why testing full corrosion series is good because we then have the data to see if those other ingredients are present meaning the soil sample is just fertilizer-contaminated soil. This can happen often when the soil samples collected are simply surface scoops. This is why it's best to dig in a foot, throw away the top and test the deeper stuff. Dairy farms are also notorious for these items.

If one sample pops up much more corrosive than all others, we would recommend collecting more samples surrounding the problem sample location to determine if the peak is isolated to it. This allows us to conclude it was a contaminated sample and able to declare it an outlier.

Try out our new online forms: SOIL CORROSIVITY & THERMAL RESISTIVITY LAB REQUEST FORM & IN-SITU WENNER 4 PIN QUOTE REQUEST FORM

Appendix D

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

95 Argonaut, Aliso Viejo, CA 92656, USA

Latitude, Longitude: 33.5945973, -117.7242937



Date	4/26/2024, 3:23:29 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.218	MCE_R ground motion. (for 0.2 second period)
S_1	0.438	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.233	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.822	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.013	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.515	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.566	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.218	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.304	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.489	Factored deterministic acceleration value. (0.2 second)
S1RT	0.438	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.468	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.82	Factored deterministic acceleration value. (1.0 second)
PGAd	1.017	Factored deterministic acceleration value. (Peak Ground Acceleration)

Type	Value	Description
PGA_{UH}	0.515	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.934	Mapped value of the risk coefficient at short periods
C_{R1}	0.934	Mapped value of the risk coefficient at a period of 1 s
C_V	1.344	Vertical coefficient

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new USGS Earthquake Hazard Toolbox for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

Input

Edition

Dynamic: Conterminous U.S. 2014 (u…

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

33.5945973

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-117.7242937

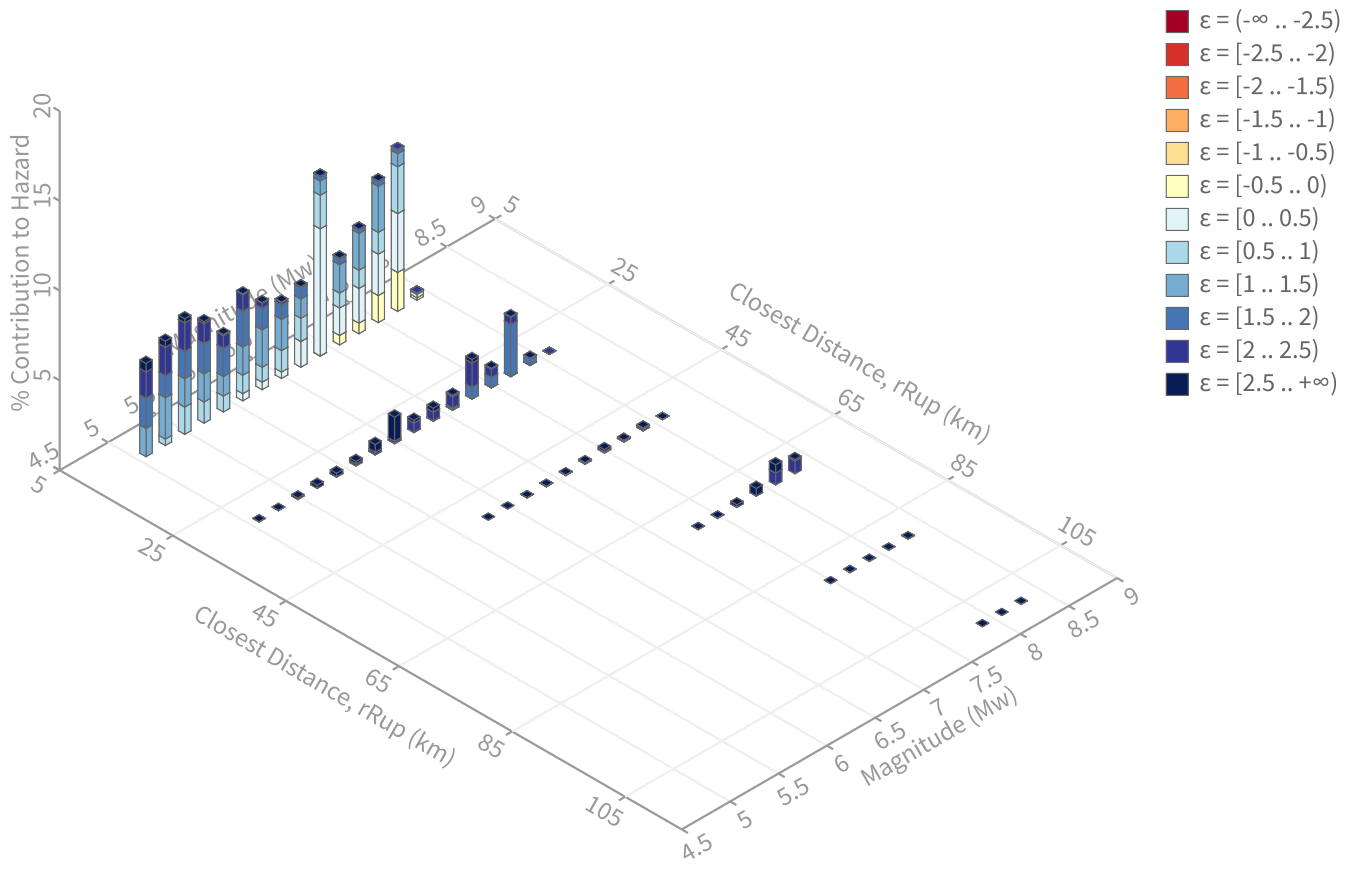
Site Class

259 m/s (Site class D)

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.61392295 g

Recovered targets

Return period: 2880.4914 yrs
Exceedance rate: 0.00034716298 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.07 %

Mean (over all sources)

m: 6.63
r: 12.23 km
ε_0: 1.22 σ

Mode (largest m-r bin)

m: 6.89
r: 4.51 km
ε_0: 0.41 σ
Contribution: 10.02 %

Mode (largest m-r-ε_0 bin)

m: 6.89
r: 3.48 km
ε_0: 0.2 σ
Contribution: 7.08 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM32	System							29.04
San Joaquin Hills [2]		3.26	7.11	0.23	117.713°W	33.600°N	60.23	14.88
Newport-Inglewood (Offshore) [2]		11.85	7.31	1.21	117.806°W	33.513°N	219.82	4.79
Elsinore (Glen Ivy) rev [1]		28.83	7.28	2.11	117.509°W	33.782°N	43.62	2.57
UC33brAvg_FM31	System							25.52
San Joaquin Hills [2]		3.26	7.52	0.18	117.713°W	33.600°N	60.23	9.28
Newport-Inglewood (Offshore) [2]		11.85	7.31	1.21	117.806°W	33.513°N	219.82	5.04
Oceanside alt1 [6]		8.12	7.00	0.62	117.802°W	33.514°N	218.97	3.06
Elsinore (Glen Ivy) rev [1]		28.83	7.26	2.12	117.509°W	33.782°N	43.62	2.52
UC33brAvg_FM31 (opt)	Grid							22.81
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.14
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.14
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.79
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.79
UC33brAvg_FM32 (opt)	Grid							22.63
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.11
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.11
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.76
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.76

Appendix E

Summary of Slope Stability Analysis

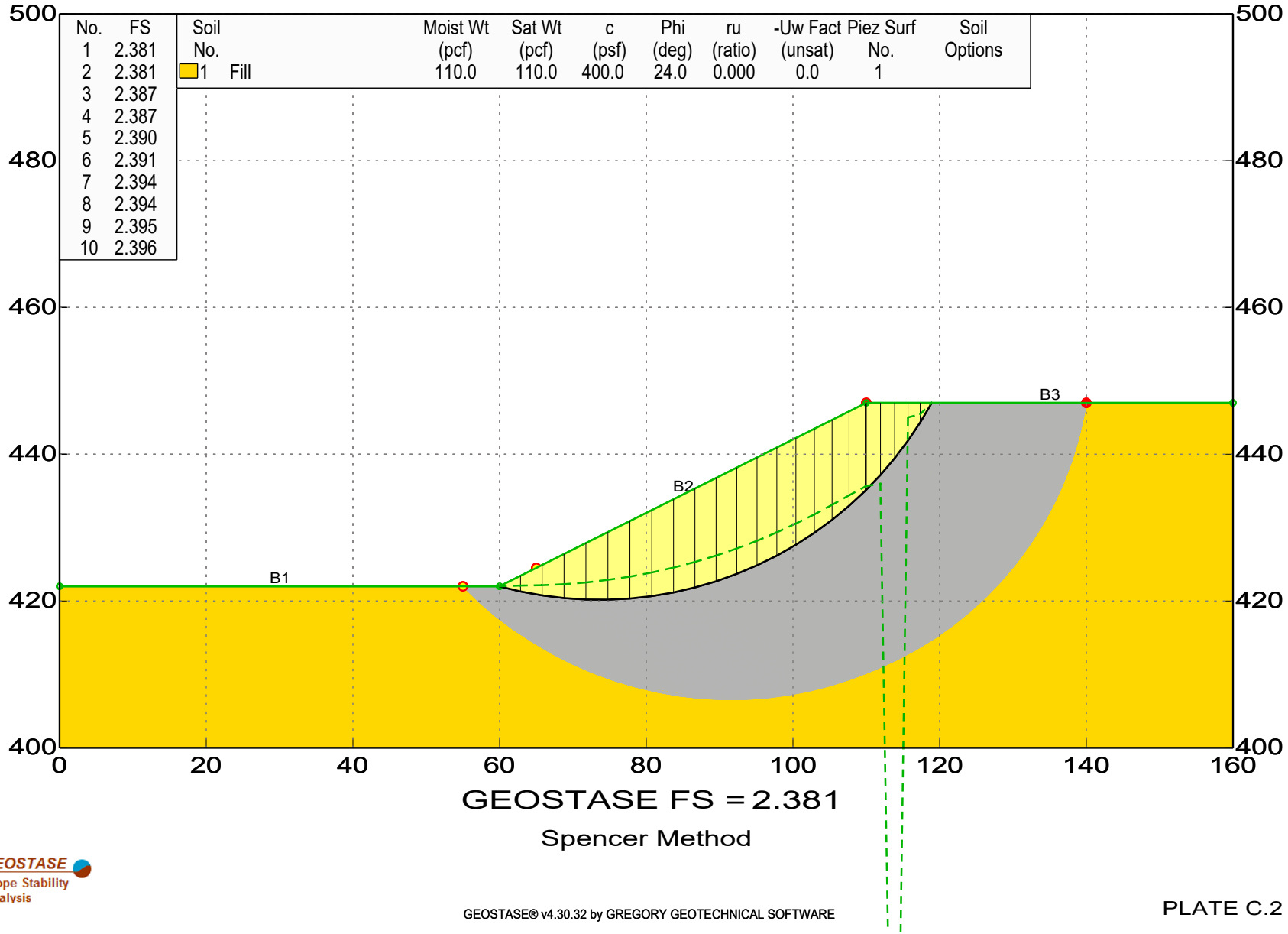
Filename	Description	Factor of Safety (FS)	
		Static	*Pseudostatic*
01, 01p	Global Stability of 25-foot High Fill Slope	2.38	1.46

Project No.: 24059-01

Project Name: Meritage/ 95 Argonaut, Aliso Viejo

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes

S:\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd



GEOSTASE FS = 2.381

Spencer Method

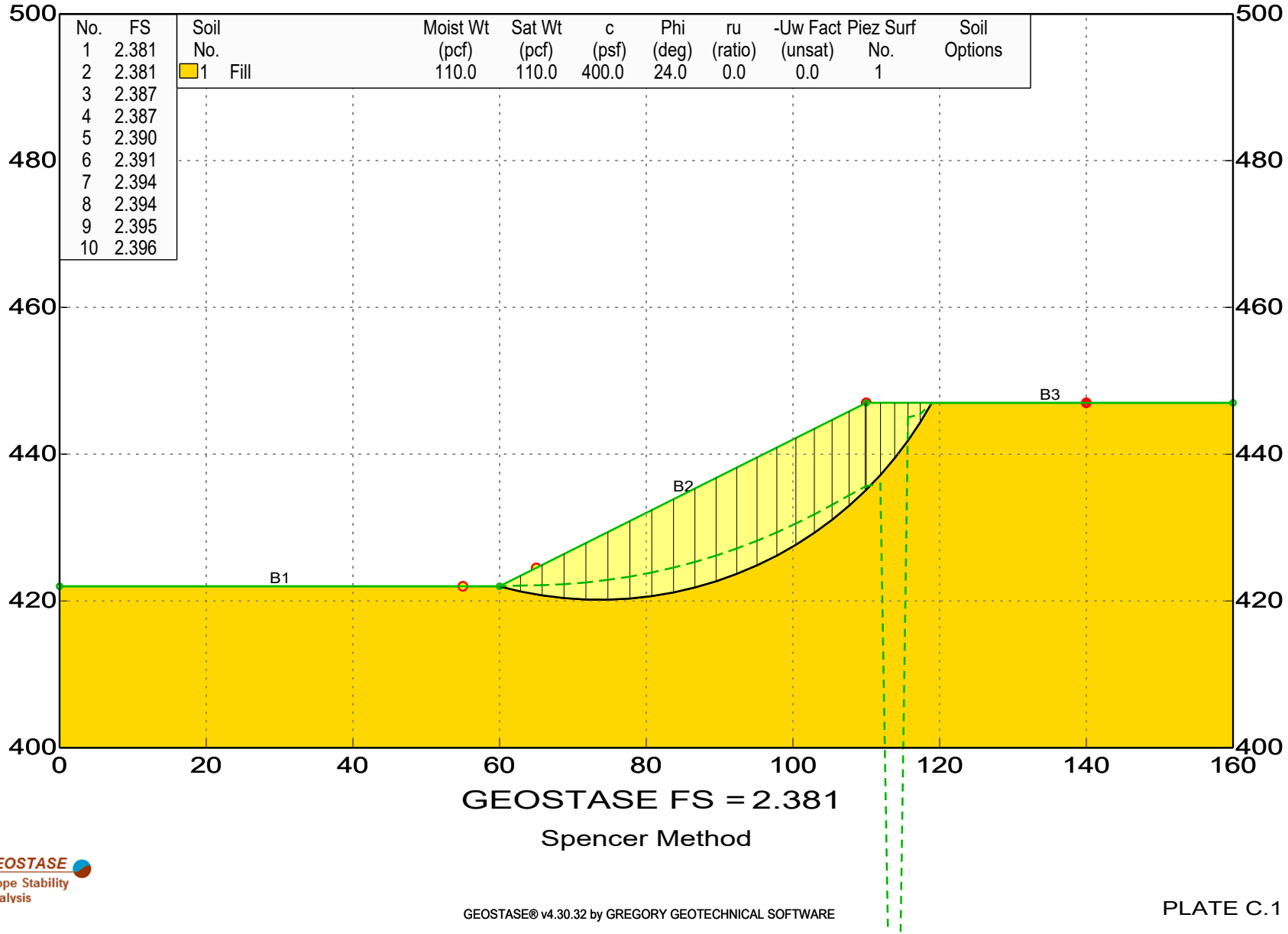
GEOSTASE
Slope Stability Analysis

GEOSTASE® v4.30.32 by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.2

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes

SA Geotechnical, Inc\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd



GEOSTASE FS = 2.381

Spencer Method

GEOSTASE
Slope Stability Analysis

GEOSTASE® v4.30.32 by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D.,P.E.,S.E.,BC.GE **

** Current Version 4.30.32-Double Precision, Sept 2023 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE (2D & 3D)
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 5/ 28/ 2024
Analysis Time:
Analysis By: SA Geotechnical, Inc.

Input File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd

Output File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.OUT

Unit System: English

PROJECT: 95 Argonaut. Aliso Viejo

DESCRIPTION: Global Stability of 25' High Slopes

PROFILE BOUNDARY DATA

3 Surface Boundaries
3 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	422.000	60.000	422.000	1
2	60.000	422.000	110.000	447.000	1
3	110.000	447.000	160.000	447.000	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 400.000(ft)

SURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD
1	0.000	422.000
2	60.000	422.000
3	110.000	447.000
4	160.000	447.000

SUBSURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD

PROFILE BOUNDARY SLOPES AND ANGLES

BND No.	Slope	Angle(Deg.)
1	0.000	0.000
2	0.500	26.565
3	0.000	0.000

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	(-Uw) Fact.	Water Surface No.	Water Option
1 Fill	110.0	110.0	400.00	24.00	0.000	0.0	1	0

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.0600(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 55.00(ft)
and X = 65.00(ft)

Each Surface ends within a Range Between X = 110.00(ft)
and X = 140.00(ft)

All surfaces are generated left to right for both a left and right sliding slope.

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 400.00(ft)

Specified Maximum Radius = 100000.000(ft)

3.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Constant (1.0)

```
SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS =  1.500
FS tolerance =  0.000001000
Initial estimate of theta(deg) =  15.00
Theta tolerance(radians) =  0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) =  45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance  = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient =  1.00

Specified Tension Crack Water Depth Factor =   0.000

Total Number of Trial Surfaces Attempted = 2000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.


Number of Trial Surfaces with Non-Converged FS = 242

Number of Trial Surfaces With Valid FS = 1758


Percentage of Trial Surfaces With Non-Converged and/or
Non-Valid FS Solutions of the Total Attempted =  12.1 %

Statistical Data On All Valid FS Values:
   FS Max =   7.876   FS Min =   2.381   FS Ave =   2.890
   Standard Deviation =    0.400   Coefficient of Variation =   13.85 %


Critical Surface is Sequence Number     860 of Those Analyzed.


*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****
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BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 73.583338(ft) ; Y = 471.872496(ft); and Radius = 51.705663(ft)

Circular Trial Failure Surface Generated With 25 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	59.93747	422.00000
2	62.85286	421.29254
3	65.80437	420.75534
4	68.78207	420.39023
5	71.77593	420.19843
6	74.77588	420.18059
7	77.77181	420.33676
8	80.75364	420.66642
9	83.71134	421.16846
10	86.63494	421.84119
11	89.51460	422.68235
12	92.34063	423.68910
13	95.10352	424.85806
14	97.79396	426.18528
15	100.40290	427.66631
16	102.92155	429.29615
17	105.34144	431.06933
18	107.65441	432.97986
19	109.85270	435.02132
20	111.92888	437.18684
21	113.87598	439.46912
22	115.68743	441.86048
23	117.35715	444.35288
24	118.87950	446.93792
25	118.91136	447.00000

Iter. No.	Theta (deg)	FS (Moment)	FS (Force)

	(fx=1.0)			Lambda	Delta FS
1	15.0000	2.446791	2.358132	0.268	0.8865890E-01
2	19.9500	2.277947	2.410070	0.363	0.1321227E+00
3	16.9874	2.389777	2.378405	0.305	0.1137135E-01
4	17.2227	2.382173	2.380855	0.310	0.1318158E-02
5	17.2535	2.381161	2.381176	0.311	0.1509128E-04
6	17.2532	2.381173	2.381173	0.311	0.2018040E-07

Factor Of Safety For The Preceding Specified Surface = 2.381
Theta (fx = 1.0) = 17.25 Deg Lambda = 0.311

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000 (0.00% Filled)

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 11.199(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)
1	60.00	422.00	1.000+	14.21	1.000	17.25	4.2
2	62.85	422.10	0.376	846.01	1.000	17.25	250.9
3	65.80	422.15	0.336	1938.72	1.000	17.25	575.0
4	68.78	422.29	0.316	3153.82	1.000	17.25	935.4
5	71.78	422.53	0.303	4386.02	1.000	17.25	1300.9
6	74.78	422.87	0.292	5547.84	1.000	17.25	1645.5
7	77.77	423.32	0.283	6568.74	1.000	17.25	1948.3
8	80.75	423.88	0.275	7394.31	1.000	17.25	2193.1
9	83.71	424.55	0.266	7985.59	1.000	17.25	2368.5
10	86.63	425.32	0.258	8318.33	1.000	17.25	2467.2
11	89.51	426.18	0.249	8382.18	1.000	17.25	2486.1
12	92.34	427.15	0.239	8179.80	1.000	17.25	2426.1
13	95.10	428.20	0.227	7725.88	1.000	17.25	2291.5
14	97.79	429.33	0.214	7045.96	1.000	17.25	2089.8
15	100.40	430.54	0.198	6175.20	1.000	17.25	1831.5
16	102.92	431.81	0.177	5156.95	1.000	17.25	1529.5
17	105.34	433.11	0.150	4041.22	1.000	17.25	1198.6
18	107.65	434.41	0.111	2883.00	1.000	17.25	855.1
19	109.85	435.58	0.047	1740.49	1.000	17.25	516.2
20	110.00	435.65	0.040	1659.55	1.000	17.25	492.2
21	111.93	435.96	0.000-	735.94	1.000	17.25	218.3
22	113.88	319.35	0.000-	12.72	1.000	17.25	3.8
23	115.69	445.03	0.616	-377.52	1.000	17.25	-112.0
24	117.36	445.45	0.413	-395.07	1.000	17.25	-117.2
25	118.88	446.96	0.419	-13.96	1.000	17.25	-4.1

26	118.91	447.00	0.000	0.00	1.000	17.25	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 26 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	0.06	0.01	59.97	421.99	422.00	-13.64	0.00	0.06
2	2.85	1.07	61.43	421.64	422.71	-13.64	26.57	2.94
3	2.95	3.14	64.33	421.02	424.16	-10.32	26.57	3.00
4	2.98	5.07	67.29	420.57	425.65	-6.99	26.57	3.00
5	2.99	6.85	70.28	420.29	427.14	-3.67	26.57	3.00
6	3.00	8.45	73.28	420.19	428.64	-0.34	26.57	3.00
7	3.00	9.88	76.27	420.26	430.14	2.98	26.57	3.00
8	2.98	11.13	79.26	420.50	431.63	6.31	26.57	3.00
9	2.96	12.20	82.23	420.92	433.12	9.63	26.57	3.00
10	2.92	13.08	85.17	421.50	434.59	12.96	26.57	3.00
11	2.88	13.78	88.07	422.26	436.04	16.28	26.57	3.00
12	2.83	14.28	90.93	423.19	437.46	19.61	26.57	3.00
13	2.76	14.59	93.72	424.27	438.86	22.93	26.57	3.00
14	2.69	14.70	96.45	425.52	440.22	26.26	26.57	3.00
15	2.61	14.62	99.10	426.93	441.55	29.58	26.57	3.00
16	2.52	14.35	101.66	428.48	442.83	32.91	26.57	3.00
17	2.42	13.88	104.13	430.18	444.07	36.23	26.57	3.00
18	2.31	13.22	106.50	432.02	445.25	39.56	26.57	3.00
19	2.20	12.38	108.75	434.00	446.38	42.88	26.57	3.00
20	0.15	11.87	109.93	435.10	446.96	46.21	26.57	0.21
21	1.93	10.82	110.96	436.18	447.00	46.21	0.00	2.79
22	1.95	8.67	112.90	438.33	447.00	49.53	0.00	3.00
23	1.81	6.34	114.78	440.66	447.00	52.86	0.00	3.00
24	1.67	3.89	116.52	443.11	447.00	56.18	0.00	3.00
25	1.52	1.35	118.12	445.65	447.00	59.51	0.00	3.00

26	0.03	0.03	118.90	446.97	447.00	62.83	0.00	0.07

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	59.937469	422.000000
2	60.000000	421.984826
3	62.852858	421.292536
4	65.804370	420.755344
5	68.782070	420.390233
6	71.775932	420.198432
7	74.775879	420.180587
8	77.771811	420.336758
9	80.753644	420.666419
10	83.711338	421.168461
11	86.634937	421.841192
12	89.514599	422.682350
13	92.340630	423.689101
14	95.103517	424.858057
15	97.793958	426.185283
16	100.402896	427.666310
17	102.921548	429.296153
18	105.341437	431.069325
19	107.654415	432.979858
20	109.852695	435.021318
21	110.000000	435.174961
22	111.928879	437.186835
23	113.875975	439.469118
24	115.687431	441.860483
25	117.357147	444.352881
26	118.879503	446.937922
27	118.911365	447.000000

Table 3 - Force and Pore Pressure Data On The 26 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	-Uw (psf)	Earthquake Force Horiz (lbs)	Earthquake Force Vert (lbs)	Distributed Load (psf)
1	0.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
2	337.2	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
3	1019.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
4	1661.9	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
5	2254.3	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
6	2787.9	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
7	3255.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
8	3650.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
9	3968.8	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
10	4207.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
11	4363.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
12	4438.5	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
13	4433.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
14	4351.2	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
15	4196.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
16	3975.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
17	3695.5	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
18	3364.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
19	2992.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
20	192.3	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
21	2295.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
22	1857.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
23	1262.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
24	715.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
25	226.8	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
26	0.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 65504.32(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 65504.32(lbs)

TOTAL AREA OF SLIDING MASS = 595.49(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 26 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	400.00	24.00	
2	1	400.00	24.00	
3	1	400.00	24.00	
4	1	400.00	24.00	
5	1	400.00	24.00	
6	1	400.00	24.00	
7	1	400.00	24.00	
8	1	400.00	24.00	
9	1	400.00	24.00	
10	1	400.00	24.00	
11	1	400.00	24.00	
12	1	400.00	24.00	
13	1	400.00	24.00	
14	1	400.00	24.00	
15	1	400.00	24.00	
16	1	400.00	24.00	
17	1	400.00	24.00	
18	1	400.00	24.00	
19	1	400.00	24.00	
20	1	400.00	24.00	
21	1	400.00	24.00	
22	1	400.00	24.00	
23	1	400.00	24.00	
24	1	400.00	24.00	
25	1	400.00	24.00	
26	1	400.00	24.00	

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH

N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
S = SHANSEP UNDRAINED SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-13.64	59.97	0.06	114.19	0.83	136.820
2	-13.64	61.43	2.94	257.11	118.20	2.175
3	-10.32	64.33	3.00	502.93	345.44	1.456
4	-6.99	67.29	3.00	716.17	558.12	1.283
5	-3.67	70.28	3.00	896.54	752.97	1.191
6	-0.34	73.28	3.00	1046.36	929.33	1.126
7	2.98	76.27	3.00	1167.54	1086.61	1.074
8	6.31	79.26	3.00	1261.74	1224.28	1.031
9	9.63	82.23	3.00	1330.42	1341.87	0.991
10	12.96	85.17	3.00	1374.94	1438.99	0.955
11	16.28	88.07	3.00	1396.55	1515.32	0.922
12	19.61	90.93	3.00	1396.49	1570.59	0.889
13	22.93	93.72	3.00	1375.97	1604.62	0.858
14	26.26	96.45	3.00	1336.22	1617.30	0.826
15	29.58	99.10	3.00	1278.52	1608.58	0.795
16	32.91	101.66	3.00	1204.17	1578.49	0.763
17	36.23	104.13	3.00	1114.58	1527.13	0.730
18	39.56	106.50	3.00	1011.23	1454.68	0.695
19	42.88	108.75	3.00	895.70	1361.38	0.658
20	46.21	109.93	0.21	809.17	1305.15	0.620
21	46.21	110.96	2.79	730.42	1190.10	0.614
22	49.53	112.90	3.00	530.57	953.92	0.556
23	52.86	114.78	3.00	329.81	696.87	0.473
24	56.18	116.52	3.00	136.34	428.26	0.318

25	59.51	118.12	3.00	-47.05	149.01	-0.316
26	62.83	118.90	0.07	-142.16	3.41	-41.635

TABLE 5A - Total Base Force Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-13.64	59.97	0.06	7.35	0.05	140.790
2	-13.64	61.43	2.94	754.77	337.20	2.238
3	-10.32	64.33	3.00	1508.80	1019.57	1.480
4	-6.99	67.29	3.00	2148.50	1661.91	1.293
5	-3.67	70.28	3.00	2689.62	2254.28	1.193
6	-0.34	73.28	3.00	3139.07	2787.94	1.126
7	2.98	76.27	3.00	3502.62	3255.40	1.076
8	6.31	79.26	3.00	3785.22	3650.58	1.037
9	9.63	82.23	3.00	3991.27	3968.84	1.006
10	12.96	85.17	3.00	4124.81	4207.03	0.980
11	16.28	88.07	3.00	4189.65	4363.60	0.960
12	19.61	90.93	3.00	4189.46	4438.53	0.944
13	22.93	93.72	3.00	4127.90	4433.38	0.931
14	26.26	96.45	3.00	4008.67	4351.24	0.921
15	29.58	99.10	3.00	3835.55	4196.67	0.914
16	32.91	101.66	3.00	3612.52	3975.66	0.909
17	36.23	104.13	3.00	3343.75	3695.49	0.905
18	39.56	106.50	3.00	3033.68	3364.64	0.902
19	42.88	108.75	3.00	2687.10	2992.70	0.898
20	46.21	109.93	0.21	172.23	192.26	0.896
21	46.21	110.96	2.79	2035.79	2295.56	0.887
22	49.53	112.90	3.00	1591.72	1857.38	0.857
23	52.86	114.78	3.00	989.42	1262.35	0.784
24	56.18	116.52	3.00	409.02	715.08	0.572
25	59.51	118.12	3.00	-141.15	226.84	-0.622
26	62.83	118.90	0.07	-9.92	0.11	-91.181

TABLE 6 - Effective and Base Shear Stress Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-13.64	59.97	0.06	114.19	450.84	189.33
2	-13.64	61.43	2.94	257.11	514.47	216.06
3	-10.32	64.33	3.00	502.93	623.92	262.02
4	-6.99	67.29	3.00	716.17	718.86	301.89
5	-3.67	70.28	3.00	896.54	799.17	335.62
6	-0.34	73.28	3.00	1046.36	865.87	363.63
7	2.98	76.27	3.00	1167.54	919.82	386.29
8	6.31	79.26	3.00	1261.74	961.76	403.90
9	9.63	82.23	3.00	1330.42	992.34	416.75
10	12.96	85.17	3.00	1374.94	1012.16	425.07
11	16.28	88.07	3.00	1396.55	1021.78	429.11
12	19.61	90.93	3.00	1396.49	1021.76	429.10
13	22.93	93.72	3.00	1375.97	1012.62	425.26
14	26.26	96.45	3.00	1336.22	994.92	417.83
15	29.58	99.10	3.00	1278.52	969.23	407.04
16	32.91	101.66	3.00	1204.17	936.13	393.14
17	36.23	104.13	3.00	1114.58	896.24	376.39
18	39.56	106.50	3.00	1011.23	850.23	357.06
19	42.88	108.75	3.00	895.70	798.79	335.46
20	46.21	109.93	0.21	809.17	760.27	319.28
21	46.21	110.96	2.79	730.42	725.20	304.56
22	49.53	112.90	3.00	530.57	636.23	267.19
23	52.86	114.78	3.00	329.81	546.84	229.65
24	56.18	116.52	3.00	136.34	460.70	193.48
25	59.51	118.12	3.00	-47.05	379.05	159.19
26	62.83	118.90	0.07	-142.16	336.71	141.40

TABLE 6A - Effective and Base Shear Force Data on the 26 Slices

Slice	Alpha	X-Coord.	Base	Effective	Available	Mobilized

No. *	(deg)	Slice Cntr (ft)	Leng. (ft)	Normal Force (lbs)	Shear Force (lbs)	Shear Force (lbs)
1	-13.64	59.97	0.06	7.35	29.01	12.18
2	-13.64	61.43	2.94	754.77	1510.31	634.27
3	-10.32	64.33	3.00	1508.80	1871.76	786.07
4	-6.99	67.29	3.00	2148.50	2156.57	905.68
5	-3.67	70.28	3.00	2689.62	2397.50	1006.86
6	-0.34	73.28	3.00	3139.07	2597.60	1090.89
7	2.98	76.27	3.00	3502.62	2759.47	1158.87
8	6.31	79.26	3.00	3785.22	2885.29	1211.71
9	9.63	82.23	3.00	3991.27	2977.03	1250.24
10	12.96	85.17	3.00	4124.81	3036.48	1275.21
11	16.28	88.07	3.00	4189.65	3065.35	1287.33
12	19.61	90.93	3.00	4189.46	3065.27	1287.29
13	22.93	93.72	3.00	4127.90	3037.86	1275.78
14	26.26	96.45	3.00	4008.67	2984.77	1253.49
15	29.58	99.10	3.00	3835.55	2907.70	1221.12
16	32.91	101.66	3.00	3612.52	2808.40	1179.42
17	36.23	104.13	3.00	3343.75	2688.73	1129.16
18	39.56	106.50	3.00	3033.68	2550.68	1071.19
19	42.88	108.75	3.00	2687.10	2396.38	1006.38
20	46.21	109.93	0.21	172.23	161.82	67.96
21	46.21	110.96	2.79	2035.79	2021.25	848.85
22	49.53	112.90	3.00	1591.72	1908.68	801.57
23	52.86	114.78	3.00	989.42	1640.52	688.95
24	56.18	116.52	3.00	409.02	1382.11	580.43
25	59.51	118.12	3.00	-141.15	1137.16	477.56
26	62.83	118.90	0.07	-9.92	23.49	9.87

Average Effective Normal Stress = 922.6529(psf)
Average Available Shear Strength = 810.7915(psf)
Total Length of Failure Surface = 69.0698(ft)

INPUT PARAMETERS FOR SIMPLIFIED 3D ANALYSIS

Composite Phi (deg)= 41.308
3D Depth (Vertical difference between ends of Slip Surface) = 25.00(ft)

```
     L/D(1): L = 25.00(ft) L/D(2): L = 50.00(ft) L/D(3): L = 75.00(ft)
     L/D(4): L = 100.00(ft) L/D(5): L = 125.00(ft) L/D(6): L = 150.00(ft)

SUM OF MOMENTS =  -0.109727E-03 (ft/lbs);Imbalance (Fraction of Total Weight) =  -0.1675105E-08
SUM OF FORCES = -.762124E-06 (lbs);Imbalance (Fraction of Total Weight) =   -0.1163472E-10

Sum of Available Shear Forces =   56001.19(lbs)

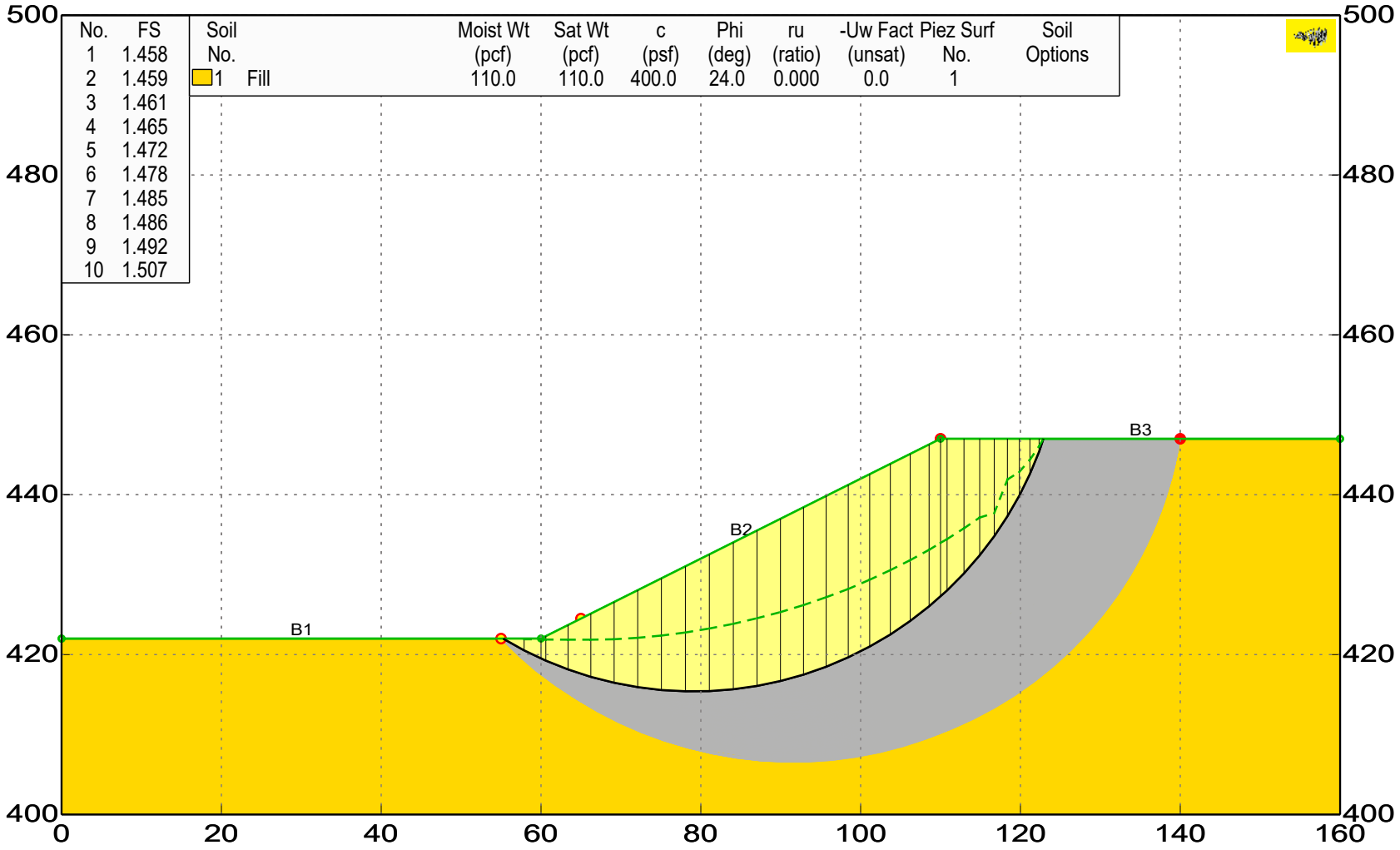
Sum of Mobilized Shear Forces =   23518.32(lbs)

FS Balance Check: FS =  2.381173

                    **** END OF GEOSTASE OUTPUT ****
```

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes (Pseudo-Static)

SA Geotechnical, Inc. \01p.gsd



GEOSTASE FS = 1.458

Spencer Method

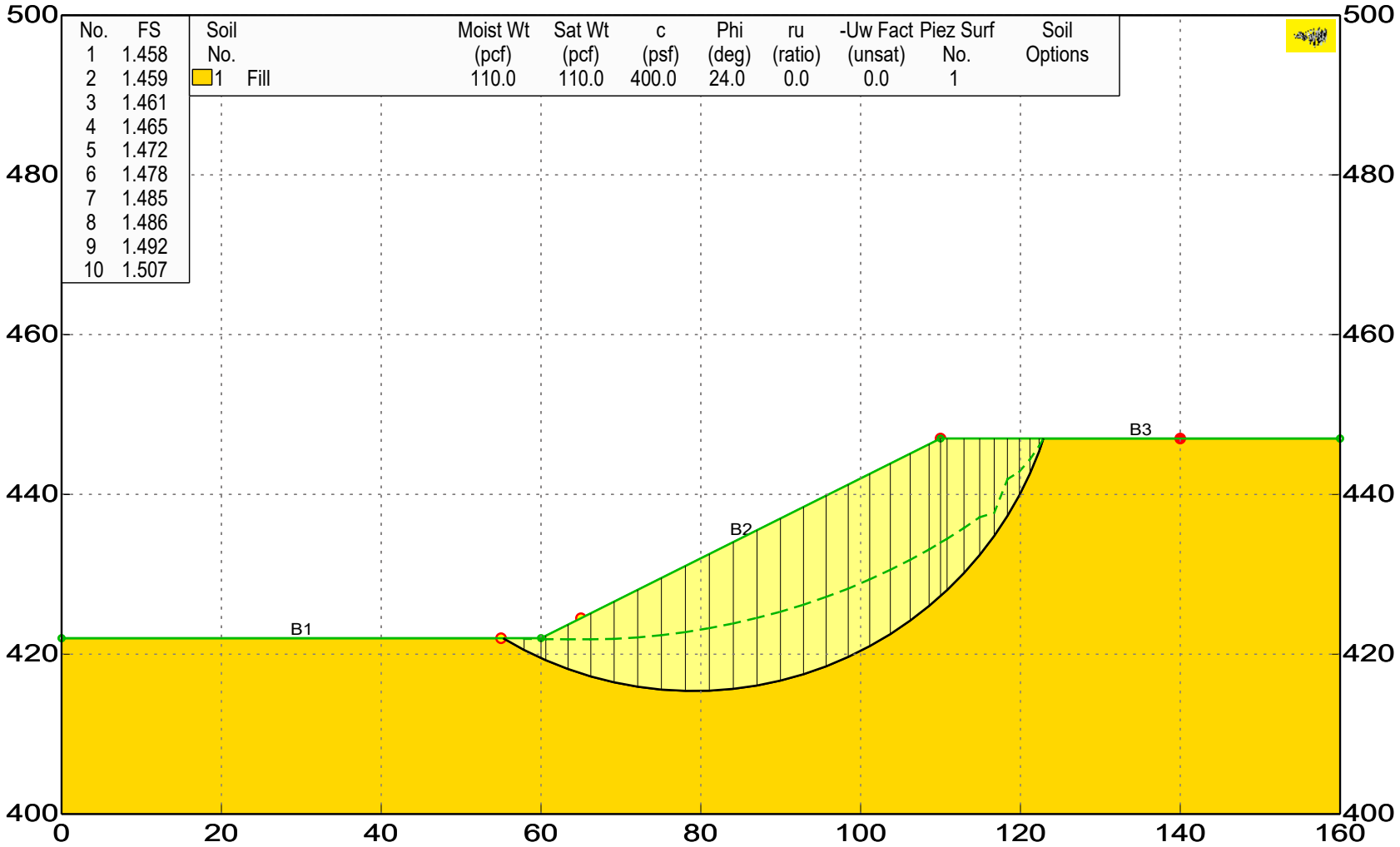
kh = 0.29000

GEOSTASE Slope Stability Analysis

PLATE C.2

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes (Pseudo-Static)

SA Geotechnical, Inc. \01p.gsd



GEOSTASE FS = 1.458

Spencer Method

kh = 0.29000

GEOSTASE Slope Stability Analysis

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D.,P.E.,S.E.,BC.GE **

** Current Version 4.30.32-Double Precision, Sept 2023 **

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****

SLOPE STABILITY ANALYSIS SOFTWARE (2D & 3D)

Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.

(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)

Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads

Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads

Nonlinear Undrained Shear Strength, Curved Strength Envelope,

Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown

2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

****

Analysis Date: 5/ 28/ 2024

Analysis Time:

Analysis By: SA Geotechnical, Inc.

Input File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01p.gsd

Output File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01p.OUT

Unit System: English

PROJECT: 95 Argonaut. Aliso Viejo

DESCRIPTION: Global Stability of 25' High Slopes (Pseudo-Static)

PROFILE BOUNDARY DATA

3 Surface Boundaries
3 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	422.000	60.000	422.000	1
2	60.000	422.000	110.000	447.000	1
3	110.000	447.000	160.000	447.000	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 400.000(ft)

SURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD
1	0.000	422.000
2	60.000	422.000
3	110.000	447.000
4	160.000	447.000

SUBSURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD

PROFILE BOUNDARY SLOPES AND ANGLES

BND No.	Slope	Angle(Deg.)
1	0.000	0.000
2	0.500	26.565
3	0.000	0.000

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	(-Uw) Fact.	Water Surface No.	Water Option
1 Fill	110.0	110.0	400.00	24.00	0.000	0.0	1	0

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.290(g)
Default Velocity = 1.450(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.29000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.0600(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 55.00(ft)
and X = 65.00(ft)

Each Surface ends within a Range Between X = 110.00(ft)
and X = 140.00(ft)

All surfaces are generated left to right for both a left and right sliding slope.

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 400.00(ft)

Specified Maximum Radius = 100000.000(ft)

3.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Specified Tension Crack Water Depth Factor = 0.000

Total Number of Trial Surfaces Attempted = 2000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.

Number of Trial Surfaces with Non-Converged FS = 1779

Number of Trial Surfaces With Valid FS = 221

Percentage of Trial Surfaces With Non-Converged and/or

Non-Valid FS Solutions of the Total Attempted = 89.0 %

Statistical Data On All Valid FS Values:
FS Max = 1.907 FS Min = 1.458 FS Ave = 1.673
Standard Deviation = 0.100 Coefficient of Variation = 5.97 %

Critical Surface is Sequence Number 8 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 79.072422(ft) ; Y = 461.584595(ft); and Radius = 46.189706(ft)

Circular Trial Failure Surface Generated With 29 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	55.27014	422.00000
2	57.88998	420.53836
3	60.59919	419.24987
4	63.38632	418.13997
5	66.23963	417.21334
6	69.14707	416.47388
7	72.09638	415.92472
8	75.07512	415.56818
9	78.07072	415.40575
10	81.07054	415.43813
11	84.06194	415.66517
12	87.03229	416.08592
13	89.96906	416.69860
14	92.85986	417.50063
15	95.69250	418.48863
16	98.45503	419.65843
17	101.13580	421.00509
18	103.72349	422.52293

19	106.20720	424.20555
20	108.57643	426.04585
21	110.82121	428.03607
22	112.93206	430.16782
23	114.90007	432.43209
24	116.71694	434.81934
25	118.37502	437.31950
26	119.86730	439.92202
27	121.18748	442.61592
28	122.33001	445.38984
29	122.87389	447.00000

Iter. No.	Theta (deg) (fx=1.0)	FS (Moment)	FS (Force)	Lambda	Delta FS
1	15.0000	1.669854	1.332393	0.268	0.3374611E+00
2	19.9500	1.647384	1.378190	0.363	0.2691943E+00
3	39.4653	9.550143	1.745311	0.823	0.7804832E+01
4	19.2530	1.653452	1.371193	0.349	0.2822590E+00
5	18.4988	1.658690	1.363842	0.335	0.2948478E+00
6	36.1598	0.000000	1.641211	0.731	0.1641211E+01
7	21.1879	1.633066	1.391134	0.388	0.2419319E+00
8	23.1140	1.598474	1.412737	0.427	0.1857370E+00
9	29.4789	0.000000	1.501027	0.565	0.1501027E+01
10	23.8147	1.580714	1.421087	0.441	0.1596267E+00
11	24.3602	1.564324	1.427786	0.453	0.1365382E+00
12	27.5854	1.384097	1.471473	0.522	0.8737655E-01
13	26.3271	1.478043	1.453533	0.495	0.2451021E-01
14	26.6029	1.461048	1.457360	0.501	0.3687567E-02
15	26.6518	1.457865	1.458044	0.502	0.1790882E-03
16	26.6495	1.458014	1.458012	0.502	0.1202523E-05
17	26.6495	1.458013	1.458013	0.502	0.3293546E-07

Factor Of Safety For The Preceding Specified Surface = 1.458
Theta (fx = 1.0) = 26.65 Deg Lambda = 0.502

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000 (0.00% Filled)

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 11.199(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)

1	57.89	421.93	0.950	3030.29	1.000	26.65	1359.2
2	60.00	421.91	0.965	5333.39	1.000	26.65	2392.2
3	60.60	421.88	0.863	6054.86	1.000	26.65	2715.8
4	63.39	421.85	0.668	9202.53	1.000	26.65	4127.6
5	66.24	421.85	0.586	12349.95	1.000	26.65	5539.3
6	69.15	421.93	0.540	15298.87	1.000	26.65	6862.0
7	72.10	422.10	0.510	17906.63	1.000	26.65	8031.7
8	75.08	422.38	0.488	20071.76	1.000	26.65	9002.8
9	78.07	422.76	0.471	21725.73	1.000	26.65	9744.7
10	81.07	423.25	0.457	22827.80	1.000	26.65	10239.0
11	84.06	423.84	0.445	23361.35	1.000	26.65	10478.3
12	87.03	424.53	0.435	23331.13	1.000	26.65	10464.7
13	89.97	425.32	0.425	22760.74	1.000	26.65	10208.9
14	92.86	426.20	0.416	21690.43	1.000	26.65	9728.8
15	95.69	427.17	0.407	20174.76	1.000	26.65	9049.0
16	98.46	428.23	0.397	18280.37	1.000	26.65	8199.3
17	101.14	429.36	0.387	16083.52	1.000	26.65	7214.0
18	103.72	430.56	0.377	13667.69	1.000	26.65	6130.4
19	106.21	431.82	0.364	11120.94	1.000	26.65	4988.1
20	108.58	433.12	0.350	8533.38	1.000	26.65	3827.5
21	110.00	433.97	0.339	6906.36	1.000	26.65	3097.7
22	110.82	434.45	0.338	6007.06	1.000	26.65	2694.4
23	112.93	435.81	0.335	3761.86	1.000	26.65	1687.3
24	114.90	437.13	0.323	1902.94	1.000	26.65	853.5
25	116.72	437.71	0.237	481.61	1.000	26.65	216.0
26	118.38	441.92	0.476	-468.44	1.000	26.65	-210.1
27	119.87	442.85	0.413	-932.69	1.000	26.65	-418.3
28	121.19	444.38	0.403	-917.26	1.000	26.65	-411.4
29	122.33	446.06	0.415	-450.28	1.000	26.65	-202.0
30	122.87	447.00	0.000	0.00	1.000	26.65	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 30 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	2.62	0.73	56.58	421.27	422.00	-29.16	0.00	3.00
2	2.11	1.96	58.94	420.04	422.00	-25.44	0.00	2.34
3	0.60	2.76	60.30	419.39	422.15	-25.44	26.57	0.66
4	2.79	4.30	61.99	418.69	423.00	-21.71	26.57	3.00
5	2.85	6.73	64.81	417.68	424.41	-17.99	26.57	3.00
6	2.91	9.00	67.69	416.84	425.85	-14.27	26.57	3.00
7	2.95	11.11	70.62	416.20	427.31	-10.55	26.57	3.00
8	2.98	13.05	73.59	415.75	428.79	-6.83	26.57	3.00
9	3.00	14.80	76.57	415.49	430.29	-3.10	26.57	3.00
10	3.00	16.36	79.57	415.42	431.79	0.62	26.57	3.00
11	2.99	17.73	82.57	415.55	433.28	4.34	26.57	3.00
12	2.97	18.90	85.55	415.88	434.77	8.06	26.57	3.00
13	2.94	19.86	88.50	416.39	436.25	11.78	26.57	3.00
14	2.89	20.61	91.41	417.10	437.71	15.51	26.57	3.00
15	2.83	21.14	94.28	417.99	439.14	19.23	26.57	3.00
16	2.76	21.46	97.07	419.07	440.54	22.95	26.57	3.00
17	2.68	21.57	99.80	420.33	441.90	26.67	26.57	3.00
18	2.59	21.45	102.43	421.76	443.21	30.39	26.57	3.00
19	2.48	21.12	104.97	423.36	444.48	34.12	26.57	3.00
20	2.37	20.57	107.39	425.13	445.70	37.84	26.57	3.00
21	1.42	19.97	109.29	426.68	446.64	41.56	26.57	1.90
22	0.82	19.33	110.41	427.67	447.00	41.56	0.00	1.10
23	2.11	17.90	111.88	429.10	447.00	45.28	0.00	3.00
24	1.97	15.70	113.92	431.30	447.00	49.00	0.00	3.00
25	1.82	13.37	115.81	433.63	447.00	52.73	0.00	3.00
26	1.66	10.93	117.55	436.07	447.00	56.45	0.00	3.00
27	1.49	8.38	119.12	438.62	447.00	60.17	0.00	3.00
28	1.32	5.73	120.53	441.27	447.00	63.89	0.00	3.00
29	1.14	3.00	121.76	444.00	447.00	67.61	0.00	3.00
30	0.54	0.81	122.60	446.19	447.00	71.34	0.00	1.70

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	55.270135	422.000000
2	57.889984	420.538361
3	60.000000	419.534845
4	60.599191	419.249872
5	63.386325	418.139971
6	66.239630	417.213338
7	69.147070	416.473882
8	72.096379	415.924724
9	75.075116	415.568179
10	78.070716	415.405751
11	81.070541	415.438127
12	84.061938	415.665168
13	87.032286	416.085918
14	89.969056	416.698602
15	92.859860	417.500635
16	95.692501	418.488633
17	98.455032	419.658429
18	101.135799	421.005088
19	103.723492	422.522929
20	106.207197	424.205550
21	108.576434	426.045852
22	110.000000	427.307986
23	110.821211	428.036073
24	112.932058	430.167815
25	114.900069	432.432088
26	116.716944	434.819339
27	118.375017	437.319497
28	119.867295	439.922017
29	121.187482	442.615918
30	122.330009	445.389838
31	122.873887	447.000000

Table 3 - Force and Pore Pressure Data On The 30 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	-Uw (psf)	Earthquake Force Horiz (lbs)	Earthquake Force Vert (lbs)	Distributed Load (psf)
1	210.6	0.0	0.0	0.0	0.00	0.00	61.1	0.0	0.00
2	455.7	0.0	0.0	0.0	0.00	0.00	132.2	0.0	0.00
3	181.7	0.0	0.0	0.0	0.00	0.00	52.7	0.0	0.00
4	1318.8	0.0	0.0	0.0	0.00	0.00	382.4	0.0	0.00
5	2112.3	0.0	0.0	0.0	0.00	0.00	612.6	0.0	0.00
6	2879.3	0.0	0.0	0.0	0.00	0.00	835.0	0.0	0.00
7	3604.9	0.0	0.0	0.0	0.00	0.00	1045.4	0.0	0.00
8	4274.8	0.0	0.0	0.0	0.00	0.00	1239.7	0.0	0.00
9	4876.7	0.0	0.0	0.0	0.00	0.00	1414.2	0.0	0.00
10	5399.6	0.0	0.0	0.0	0.00	0.00	1565.9	0.0	0.00
11	5834.6	0.0	0.0	0.0	0.00	0.00	1692.0	0.0	0.00
12	6174.7	0.0	0.0	0.0	0.00	0.00	1790.7	0.0	0.00
13	6415.0	0.0	0.0	0.0	0.00	0.00	1860.4	0.0	0.00
14	6553.0	0.0	0.0	0.0	0.00	0.00	1900.4	0.0	0.00
15	6588.1	0.0	0.0	0.0	0.00	0.00	1910.5	0.0	0.00
16	6522.2	0.0	0.0	0.0	0.00	0.00	1891.5	0.0	0.00
17	6359.5	0.0	0.0	0.0	0.00	0.00	1844.2	0.0	0.00
18	6105.9	0.0	0.0	0.0	0.00	0.00	1770.7	0.0	0.00
19	5769.7	0.0	0.0	0.0	0.00	0.00	1673.2	0.0	0.00
20	5360.9	0.0	0.0	0.0	0.00	0.00	1554.7	0.0	0.00
21	3126.7	0.0	0.0	0.0	0.00	0.00	906.7	0.0	0.00
22	1746.0	0.0	0.0	0.0	0.00	0.00	506.3	0.0	0.00
23	4155.8	0.0	0.0	0.0	0.00	0.00	1205.2	0.0	0.00
24	3398.8	0.0	0.0	0.0	0.00	0.00	985.6	0.0	0.00
25	2672.9	0.0	0.0	0.0	0.00	0.00	775.2	0.0	0.00
26	1993.6	0.0	0.0	0.0	0.00	0.00	578.1	0.0	0.00
27	1375.5	0.0	0.0	0.0	0.00	0.00	398.9	0.0	0.00
28	832.3	0.0	0.0	0.0	0.00	0.00	241.4	0.0	0.00
29	376.7	0.0	0.0	0.0	0.00	0.00	109.2	0.0	0.00
30	48.2	0.0	0.0	0.0	0.00	0.00	14.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 106724.37(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 106724.37(lbs)

TOTAL AREA OF SLIDING MASS = 970.22(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 30 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	400.00	24.00	
2	1	400.00	24.00	
3	1	400.00	24.00	
4	1	400.00	24.00	
5	1	400.00	24.00	
6	1	400.00	24.00	
7	1	400.00	24.00	
8	1	400.00	24.00	
9	1	400.00	24.00	
10	1	400.00	24.00	
11	1	400.00	24.00	
12	1	400.00	24.00	
13	1	400.00	24.00	
14	1	400.00	24.00	
15	1	400.00	24.00	
16	1	400.00	24.00	
17	1	400.00	24.00	
18	1	400.00	24.00	
19	1	400.00	24.00	
20	1	400.00	24.00	
21	1	400.00	24.00	
22	1	400.00	24.00	
23	1	400.00	24.00	
24	1	400.00	24.00	
25	1	400.00	24.00	
26	1	400.00	24.00	
27	1	400.00	24.00	
28	1	400.00	24.00	
29	1	400.00	24.00	

30 1 400.00 24.00

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH
N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
S = SHANSEP UNDRAINED SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-29.16	56.58	3.00	906.73	80.39	11.279
2	-25.44	58.94	2.34	978.07	215.97	4.529
3	-25.44	60.30	0.66	1139.32	303.32	3.756
4	-21.71	61.99	3.00	1239.72	473.16	2.620
5	-17.99	64.81	3.00	1469.91	740.28	1.986
6	-14.27	67.69	3.00	1642.62	990.34	1.659
7	-10.55	70.62	3.00	1770.62	1222.27	1.449
8	-6.83	73.59	3.00	1862.02	1435.11	1.297
9	-3.10	76.57	3.00	1922.30	1627.94	1.181
10	0.62	79.57	3.00	1955.35	1799.97	1.086
11	4.34	82.57	3.00	1964.12	1950.46	1.007
12	8.06	85.55	3.00	1950.97	2078.78	0.939
13	11.78	88.50	3.00	1917.86	2184.39	0.878
14	15.51	91.41	3.00	1866.52	2266.84	0.823
15	19.23	94.28	3.00	1798.53	2325.78	0.773
16	22.95	97.07	3.00	1715.40	2360.97	0.727
17	26.67	99.80	3.00	1618.59	2372.25	0.682

18	30.39	102.43	3.00	1509.54	2359.59	0.640
19	34.12	104.97	3.00	1389.75	2323.03	0.598
20	37.84	107.39	3.00	1260.73	2262.72	0.557
21	41.56	109.29	1.90	1133.61	2196.39	0.516
22	41.56	110.41	1.10	1095.16	2126.08	0.515
23	45.28	111.88	3.00	928.35	1968.79	0.472
24	49.00	113.92	3.00	730.90	1727.01	0.423
25	52.73	115.81	3.00	542.25	1471.17	0.369
26	56.45	117.55	3.00	364.05	1202.36	0.303
27	60.17	119.12	3.00	198.18	921.72	0.215
28	63.89	120.53	3.00	46.73	630.41	0.074
29	67.61	121.76	3.00	-87.90	329.68	-0.267
30	71.34	122.60	1.70	-185.03	88.56	-2.089

TABLE 5A - Total Base Force Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-29.16	56.58	3.00	2720.19	210.61	12.916
2	-25.44	58.94	2.34	2285.27	455.71	5.015
3	-25.44	60.30	0.66	755.95	181.75	4.159
4	-21.71	61.99	3.00	3719.16	1318.76	2.820
5	-17.99	64.81	3.00	4409.74	2112.25	2.088
6	-14.27	67.69	3.00	4927.85	2879.35	1.711
7	-10.55	70.62	3.00	5311.86	3604.86	1.474
8	-6.83	73.59	3.00	5586.07	4274.81	1.307
9	-3.10	76.57	3.00	5766.89	4876.67	1.183
10	0.62	79.57	3.00	5866.04	5399.60	1.086
11	4.34	82.57	3.00	5892.36	5834.60	1.010
12	8.06	85.55	3.00	5852.90	6174.70	0.948
13	11.78	88.50	3.00	5753.57	6415.05	0.897
14	15.51	91.41	3.00	5599.56	6552.98	0.855
15	19.23	94.28	3.00	5395.60	6588.10	0.819
16	22.95	97.07	3.00	5146.21	6522.25	0.789
17	26.67	99.80	3.00	4855.76	6359.46	0.764

18	30.39	102.43	3.00	4528.62	6105.89	0.742
19	34.12	104.97	3.00	4169.24	5769.71	0.723
20	37.84	107.39	3.00	3782.18	5360.93	0.706
21	41.56	109.29	1.90	2156.70	3126.71	0.690
22	41.56	110.41	1.10	1201.93	1745.96	0.688
23	45.28	111.88	3.00	2785.05	4155.81	0.670
24	49.00	113.92	3.00	2192.70	3398.77	0.645
25	52.73	115.81	3.00	1626.75	2672.93	0.609
26	56.45	117.55	3.00	1092.16	1993.61	0.548
27	60.17	119.12	3.00	594.53	1375.46	0.432
28	63.89	120.53	3.00	140.18	832.26	0.168
29	67.61	121.76	3.00	-263.70	376.67	-0.700
30	71.34	122.60	1.70	-314.47	48.17	-6.529

TABLE 6 - Effective and Base Shear Stress Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-29.16	56.58	3.00	906.73	803.70	551.23
2	-25.44	58.94	2.34	978.07	835.47	573.02
3	-25.44	60.30	0.66	1139.32	907.26	622.26
4	-21.71	61.99	3.00	1239.72	951.96	652.92
5	-17.99	64.81	3.00	1469.91	1054.45	723.21
6	-14.27	67.69	3.00	1642.62	1131.34	775.95
7	-10.55	70.62	3.00	1770.62	1188.33	815.03
8	-6.83	73.59	3.00	1862.02	1229.03	842.95
9	-3.10	76.57	3.00	1922.30	1255.86	861.35
10	0.62	79.57	3.00	1955.35	1270.58	871.44
11	4.34	82.57	3.00	1964.12	1274.48	874.12
12	8.06	85.55	3.00	1950.97	1268.63	870.11
13	11.78	88.50	3.00	1917.86	1253.88	860.00
14	15.51	91.41	3.00	1866.52	1231.03	844.32
15	19.23	94.28	3.00	1798.53	1200.76	823.56
16	22.95	97.07	3.00	1715.40	1163.75	798.17
17	26.67	99.80	3.00	1618.59	1120.64	768.61

18	30.39	102.43	3.00	1509.54	1072.09	735.31
19	34.12	104.97	3.00	1389.75	1018.76	698.73
20	37.84	107.39	3.00	1260.73	961.31	659.33
21	41.56	109.29	1.90	1133.61	904.72	620.51
22	41.56	110.41	1.10	1095.16	887.60	608.77
23	45.28	111.88	3.00	928.35	813.33	557.83
24	49.00	113.92	3.00	730.90	725.42	497.54
25	52.73	115.81	3.00	542.25	641.42	439.93
26	56.45	117.55	3.00	364.05	562.09	385.52
27	60.17	119.12	3.00	198.18	488.23	334.86
28	63.89	120.53	3.00	46.73	420.80	288.61
29	67.61	121.76	3.00	-87.90	360.86	247.50
30	71.34	122.60	1.70	-185.03	317.62	217.84



TABLE 6A - Effective and Base Shear Force Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-29.16	56.58	3.00	2720.19	2411.11	1653.69
2	-25.44	58.94	2.34	2285.27	1952.06	1338.85
3	-25.44	60.30	0.66	755.95	601.97	412.87
4	-21.71	61.99	3.00	3719.16	2855.88	1958.75
5	-17.99	64.81	3.00	4409.74	3163.34	2169.63
6	-14.27	67.69	3.00	4927.85	3394.02	2327.84
7	-10.55	70.62	3.00	5311.86	3564.99	2445.10
8	-6.83	73.59	3.00	5586.07	3687.08	2528.84
9	-3.10	76.57	3.00	5766.89	3767.59	2584.06
10	0.62	79.57	3.00	5866.04	3811.73	2614.33
11	4.34	82.57	3.00	5892.36	3823.45	2622.37
12	8.06	85.55	3.00	5852.90	3805.88	2610.32
13	11.78	88.50	3.00	5753.57	3761.65	2579.99
14	15.51	91.41	3.00	5599.56	3693.08	2532.96
15	19.23	94.28	3.00	5395.60	3602.28	2470.68
16	22.95	97.07	3.00	5146.21	3491.24	2394.52
17	26.67	99.80	3.00	4855.76	3361.92	2305.83

18	30.39	102.43	3.00	4528.62	3216.27	2205.93
19	34.12	104.97	3.00	4169.24	3056.27	2096.19
20	37.84	107.39	3.00	3782.18	2883.93	1977.99
21	41.56	109.29	1.90	2156.70	1721.23	1180.53
22	41.56	110.41	1.10	1201.93	974.13	668.12
23	45.28	111.88	3.00	2785.05	2439.98	1673.50
24	49.00	113.92	3.00	2192.70	2176.25	1492.62
25	52.73	115.81	3.00	1626.75	1924.27	1319.79
26	56.45	117.55	3.00	1092.16	1686.26	1156.55
27	60.17	119.12	3.00	594.53	1464.70	1004.59
28	63.89	120.53	3.00	140.18	1262.41	865.84
29	67.61	121.76	3.00	-263.70	1082.59	742.51
30	71.34	122.60	1.70	-314.47	539.80	370.23

Average Effective Normal Stress = 1251.9641(psf)
Average Available Shear Strength = 957.4103(psf)
Total Length of Failure Surface = 82.6995(ft)

INPUT PARAMETERS FOR SIMPLIFIED 3D ANALYSIS

Composite Phi (deg)= 37.406
3D Depth (Vertical difference between ends of Slip Surface) = 25.00(ft)
L/D(1): L = 25.00(ft) L/D(2): L = 50.00(ft) L/D(3): L = 75.00(ft)
L/D(4): L = 100.00(ft) L/D(5): L = 125.00(ft) L/D(6): L = 150.00(ft)

Average Elevation of Point of Application of kh on Sliding Mass = 430.801(ft)

SUM OF MOMENTS = -0.324693E-03 (ft/lbs);Imbalance (Fraction of Total Weight) = -0.3042346E-08
SUM OF FORCES = -.196472E-04 (lbs);Imbalance (Fraction of Total Weight) = -0.1840930E-09

Sum of Available Shear Forces = 79177.39(lbs)

Sum of Mobilized Shear Forces = 54305.01(lbs)

FS Balance Check: FS = 1.458013

**** END OF GEOSTASE OUTPUT ****

Appendix F

APPENDIX E

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

1.0 GENERAL

1.1 **Intent:** These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these general Specifications. Observations of the earthwork by the project Geotechnical Consultant during grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 **Geotechnical Consultant:** Prior to commencement of work, the project owner shall employ a geotechnical consultant. The geotechnical consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all keyway bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of subgrade and fill materials and perform adequate relative compaction testing of fill to determine the attained level of compaction and assess if, in their opinion, if the work was performed in substantial compliance

with the geotechnical report(s) and these specifications. The Geotechnical Consultant shall provide test results to the owner on a routine and frequent basis.

1.3 The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with applicable grading codes, the project plans, and these specifications.

The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork planned for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are corrected.

2.0 PREPARATION OF FILL AREAS

2.1 Clearing and Grubbing: Areas to be excavated and filled shall be cleared and grubbed. Vegetation, such as brush, grass, roots, and other deleterious material, man-made structures, and similar debris shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant. Borrow areas shall be cleared and grubbed to the extent necessary to provide a suitable fill material.

Concrete fragments that are free of reinforcing street may be placed in fills, provided they are placed in accordance with Section 3 and 4. Earth fill material

shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent organic matter. Nesting of organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area. As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, etc.) have chemical constituents that are considered hazardous waste. As such, the indiscriminate dumping or spillage of such fluids may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

The Geotechnical Consultant shall not be responsible for the identification or analysis of potentially hazardous materials; however, if observations, odors, or soil discoloration are suspect, the Geotechnical Consultant may request from the owner the termination of grading operations until such materials are deemed not hazardous as defined by applicable laws and regulations.

2.2 **Evaluation/Acceptance of Fill Areas:** All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

2.3 **Processing:** Ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Ground that is not satisfactory shall be removed/overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction. After scarification, the surface should be moisture conditioned, as necessary, to achieve the proper moisture content and compacted in accordance with Section 4 of these specifications.

2.4 **Overexcavation:** In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured, or otherwise unsuitable ground shall be overexcavated to competent ground as recommended by the Geotechnical Consultant during grading.

2.5 **Benching:** Fills to be placed on ground sloping steeper than 5H:1V (horizontal to vertical units) shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for fill placement.

3.0 FILL MATERIAL

3.1 **General:** Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 **Oversize:** Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 12 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or other underground construction.

3.3 **Import:** If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1 and/or requirements defined in the project geotechnical report(s). The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before import begins so that suitability can be determined, and appropriate laboratory tests performed.

4.0 FILL PLACEMENT AND COMPACTION

4.1 **Fill Layers:** Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 **Fill Moisture Conditioning:** Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with ASTM International (ASTM Test Method D1557).

4.3 **Compaction of Fill:** After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction and uniformity.

Compaction of Fill Slopes: In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.4 **Compaction Testing:** Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.5 **Frequency of Compaction Testing:** Tests shall be taken at intervals required by the governing agency and as deemed necessary by the Geotechnical Consultant in order to adequately qualify the fill material. In general, it should be anticipated that tests will be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill, unless recommended otherwise by the Geotechnical Consultant. In addition, test(s) shall be taken on slope faces and/or each 10 feet of vertical height of slope as deemed necessary by the Geotechnical Consultant. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.6 **Compaction Test Locations:** The Geotechnical Consultant shall document the approximate elevation and location of each compaction test. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided. Alternatively, GPS units may be used to determine the approximate location/coordinates of the field density tests.

5.0 SUBDRAIN INSTALLATION

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and standard details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys. The Contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The Contractor is responsible for the performance of subdrains.

6.0 EXCAVATION

Excavations, including over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical report(s) and plans are estimates. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 TRENCH BACKFILLS

7.1 Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

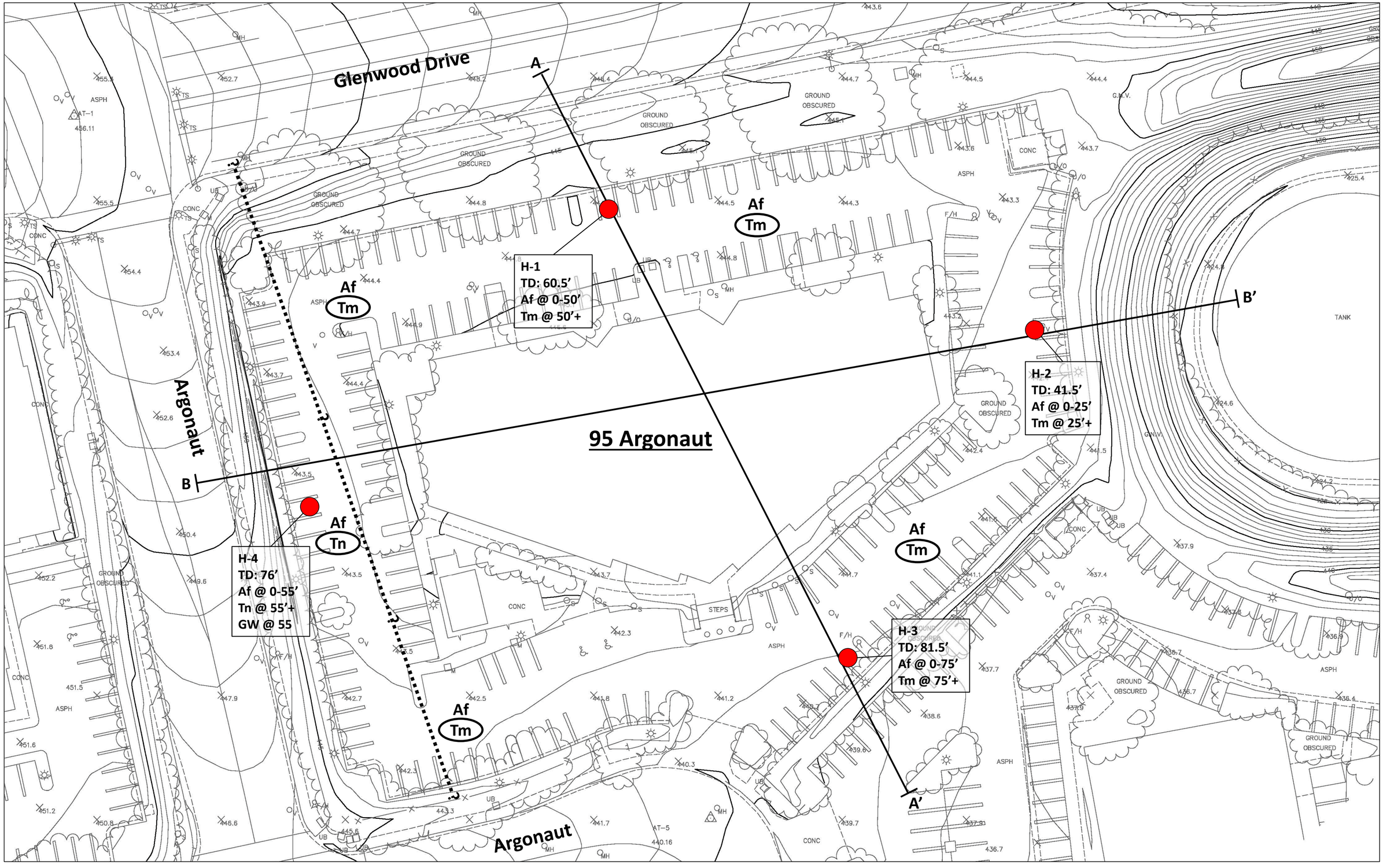
7.2 Bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum 90 percent of maximum from 1 foot above the top of the conduit to the surface, except in traveled ways (see Section 7.6 below).

7.3 Jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

7.4 Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill, unless required differently by the governing agency or the Geotechnical Consultant.

7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

7.6 Trench backfill in the upper foot measured from finish grade within existing or future traveled way, shoulder, and other paved areas (or areas to receive pavement) should be placed to a minimum 95 percent relative compaction.



Basemap Source: X Engineering & Consulting (May 2024)

LEGEND

H-4
TD: 76'
Af @ 0-55'
Tn @ 55'+
GW @ 55'

Approximate Location of Hollow Stem Auger Boring, Showing Total Depth, Depth to Earth Units, and Depth to Groundwater in Feet.

B — **B'** Geotechnical Cross-Section

Earth Units - *Circled Where Buried*

Af Artificial Fill
Tm Monterey Formation
Tn Niguel Formation

Symbols – *Locations are Approximate*

— — ····· Fault, Dotted Where Buried

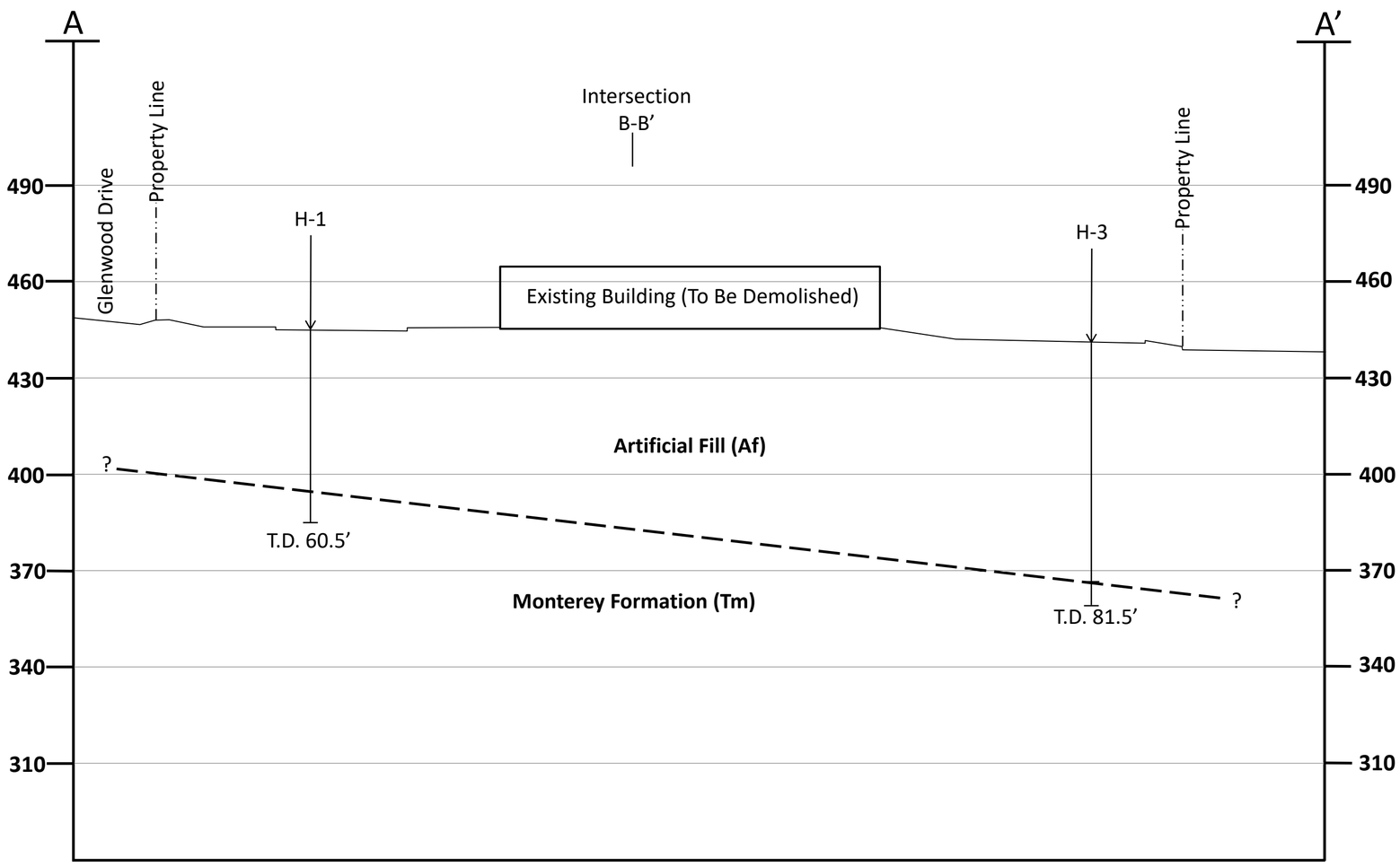
North
Scale: 1" = 30'
(On 18"x24" Plot)

GEOTECHNICAL MAP

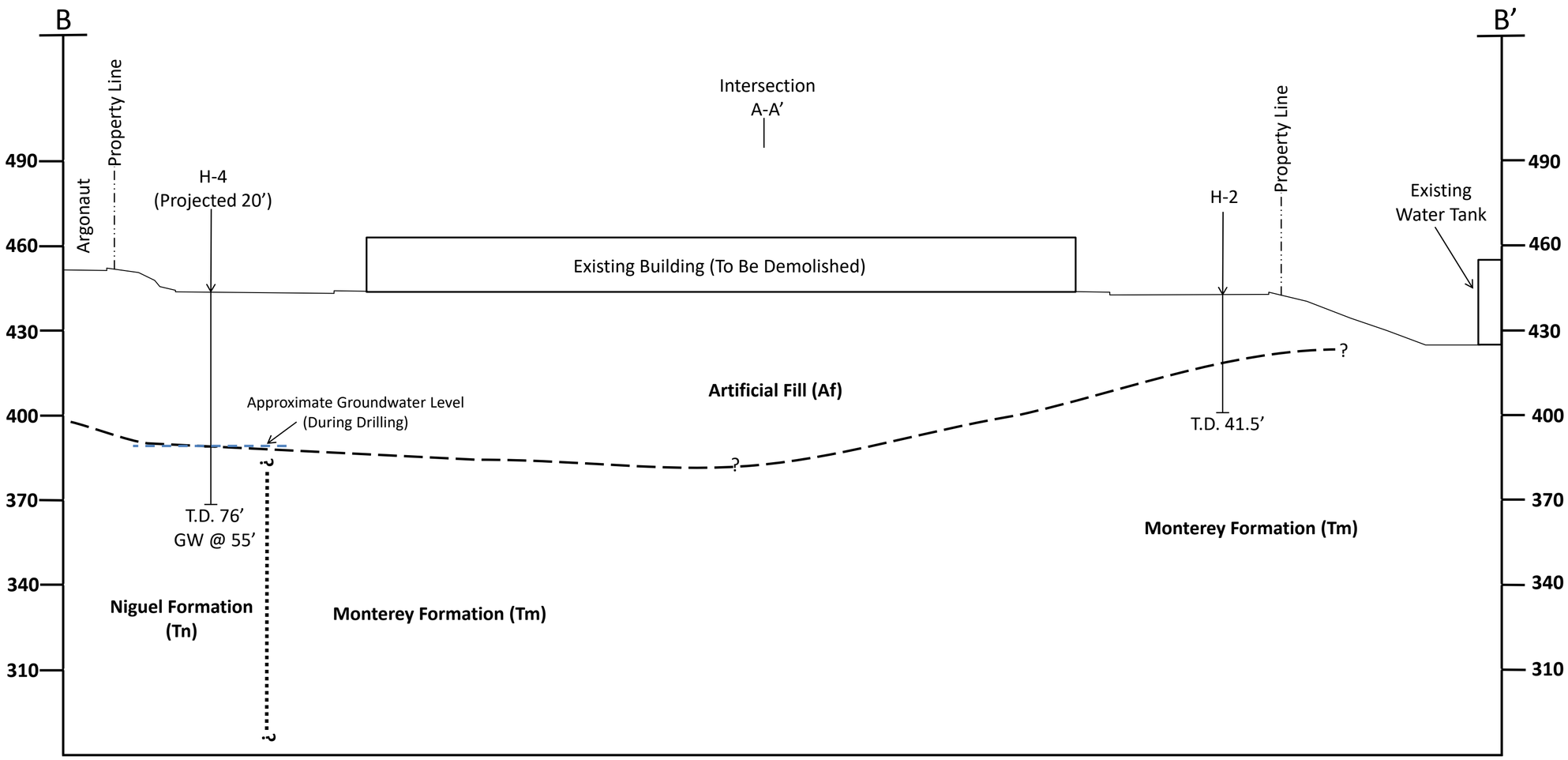
Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01
Date: May 31, 2024
Plate 1

S A



Legend	Geotechnical Cross-Section A-A'	
N27W Scale: 1 inch=30 feet	Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Plate 2



Legend	Geotechnical Cross-Section B-B'	
N80E →	Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Plate 3
Scale: 1 inch=30 feet		

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APPENDIX E:

Phase I Environmental Site Assessment

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HILLMANN
CONSULTING

PHASE I ENVIRONMENTAL SITE ASSESSMENT



MAKING A BETTER FUTURE FOR ALL THE COMMUNITIES WE TOUCH

95 Argonaut

Aliso Viejo, California 92656

PREPARED FOR:

MLC HOLDINGS, INC.
5 PETERS CANYON ROAD, SUITE 310
IRVINE, CALIFORNIA 92606

HILLMANN PROJECT NUMBER: C3-9987
APRIL 24, 2024

HILLMANN
CONSULTING

April 24, 2024

Ms. Emma Hill
MLC Holdings, Inc.
5 Peters Canyon Road, Suite 310
Irvine, California 92606

RE: Phase I Environmental Site Assessment
95 Argonaut
Aliso Viejo, California 92656
Hillmann Project No: C3-9987

Dear Ms. Emma Hill:

Hillmann Consulting LLC has completed a Phase I Environmental Site Assessment at the above referenced site. This assessment was performed in conformance with the scope and limitations of ASTM E1527-21, which is the latest version of the E1527 standard published by the ASTM.

We appreciate the opportunity to provide environmental consulting services. If you have any questions concerning this report, or if we can assist you in any other matter, please contact our office at 714-634-9500.

Sincerely,

Hillmann Consulting LLC

Vivianne Bisson
Senior Project Manager - Due Diligence

Ryan Terwilliger
Regional Manager

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LIST OF ACRONYMS/ABBREVIATIONS

Hillmann may use the following abbreviations and acronyms for common terminology described in our report. Not all abbreviations or acronyms may be applicable to this report:

AOC	-Area of Concern
AST	-Above Ground Storage Tank
ASTM	-American Society for Testing Materials
BER	-Business Environmental Risk
CERCLA	-Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	-Comprehensive Environmental Response Compensation and Liability Information System
CESQG	-Conditionally Exempt Small Quantity Generator
COC	-Chemicals of Concern
CORRACTS	-Corrective Action Sites
CREC	-Controlled Recognized Environmental Condition
DEC	-Department of Environmental Conservation
DEP	-Department of Environmental Protection
DHS	-Department of Health Services
DNPL	-Delisted National Priority List
DOB	-Department of Buildings
DOH	-Department of Health
DOT	-Department of Transportation
EPA	-Environmental Protection Agency
ERNS	-Emergency Response Notification System
FD	-Fire Department
FOI/FOIA/FOIL	-Freedom of Information / Freedom of Information Act / Freedom of Information Letter
HVAC	-Heating Ventilation & Air Conditioning
HREC	-Historical Recognized Environmental Condition
IAQ	-Indoor Air Quality
ISRA	-Industrial Site Recovery Act
LBP	-Lead-Based Paint
LCP	-Lead-Containing Paint
LQG	-Large Quantity Generator
LTANK	-Leaking Storage Tank
LUST	-Leaking Underground Storage Tank
SDS/MSDS	-Safety Data Sheet / Material Safety Data Sheet
NA	-Not Applicable
NFA	-No Further Action
NFRAP	-No Further Remedial Actions Planned
NPDES	-National Pollutant Discharge Elimination System
NPL	-National Priorities List
OPRA	-Open Public Records Act
PAH	-Polycyclic Aromatic Hydrocarbon
PCE	-Perchloroethylene
RAO	-Response Action Outcome
RCRA	-Resource Conservation and Recovery Act
RCRIS	-Resource Conservation and Recovery Information System
REC	-Recognized Environmental Concern
SDG	-Significant Data Gap
SEMS	-Superfund Enterprise Management System
SRP	-Site Remediation Program
SQG	-Small Quantity Generator
SVOC	-Semi-Volatile Organic Compound
TCE	-Trichloroethylene
TSDF	-Treatment Storage and/or Disposal Facility
UST	-Underground Storage Tank
VEC	-Vapor Encroachment Condition
VOC	-Volatile Organic Compound

1.0 INTRODUCTION

1.1 Executive Summary

Hillmann Consulting LLC (Hillmann) has performed a Phase I Environmental Site Assessment (ESA) of 95 Argonaut, Aliso Viejo, California (the Subject Property) in accordance with our contracted scope of work and the ASTM Standard Practice E 1527-21 for Phase I Environmental Site Assessments and All Appropriate Inquiries (AAI) Final Rule 40 CFR Part 312. This section contains a summary of findings, opinions and conclusions made by this assessment. However, this section, alone, does not constitute the complete assessment. The report must be read in its entirety.

Summary of Project Details

Primary Street Address:	95 Argonaut				
City:	Aliso Viejo	County:	Orange	State:	California
Tax ID/Parcel Number:	623-091-01; Per Assessor				
Property Owner:	Argonaut Offices LLC (per the RealQuest.com and Lightbox)				
Zoning Designation:	Commercial; Per Assessor				
Approx. Property Area:	2.85 acres (per Assessor)				
Buildings:	One (1)				
Approx. Building Size:	49,975 feet (per Assessor)				
Approx. Year Built:	1989 (per Assessor)				
Commercial Occupants:	Various commercial office tenants-see rent roll attached in Appendix C				
Current Use:	Commercial Office				
Site Visit Personnel:	Vivianne Bisson				
Site Contact/Company:	Emma Hill / Meritage Homes				
Site Escort/Company:	Mayroth Urias / Lincoln Property Company				
Inspection Date:	April 16, 2024				
Weather Conditions:	70° F / clear				

Findings Summary Table

Assessment Subject	No REC	REC	CREC	HREC	SDG	Rpt. Ref.
Regulatory Records Review:	✔					4.1
Historical Records Review:	✔					4.2
Bulk Petroleum Storage:	✔					6.3
On-Site Operations:	✔					6.3
On-Site Haz-Mat Storage/Use/Spills:	✔					6.3
Transformers/Hydraulic Systems:	✔					6.3
Waste Discharges:	✔					6.3
Interviews:	✔					5.0
Adjoining/Surrounding Area:	✔					4.0 6.2
Prior Env. Reports/User Provided Info:	✔					3.0

1.2 Findings, Opinions and Conclusions

Recognized Environmental Conditions & Significant Data Gaps

Hillmann has performed a Phase I Environmental Site Assessment in accordance with the scope and limitations of ASTM Practice E 1527-21 of the Subject Property as described in Section 2.2 of this report. Any additions to, exceptions to, or deletions from this practice are also described in Section 2 of this report.

This assessment has revealed no recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs) or significant data gaps (SDGs) in connection with the Subject Property.

RECOGNIZED ENVIRONMENTAL CONDITIONS
No RECs were identified.
CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS
No CRECs were identified.
SIGNIFICANT DATA GAPS
No SDGs were identified.
RECOMMENDATIONS
Based on the finding of no RECs, CRECs or SGDs, it is Hillmann's opinion that no additional action or investigation is warranted at this time.

Historical Recognized Environmental Conditions (HRECs)

If identified, *historical recognized environmental conditions* (HRECs) in connection with the Subject Property are described below:

HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS
No HRECs were identified.

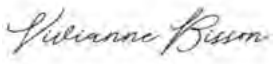
De Minimis and Other Environmental Conditions

If identified, *de minimis* and other environmental conditions are described below:

OTHER ENVIRONMENTAL CONDITIONS / DE MINIMIS CONDITIONS
The Property appears to have been developed as agricultural land from at least 1938 to 1981. Given the 43 years since any agricultural use as well as the grading activities of current development, it is Hillmann's opinion that any remaining pesticide contamination is unlikely and therefore this is not considered to be a REC in connection with the Property.

Environmental Professional Statement

I/We declare that, to the best of my professional knowledge and belief, I/we meet the definition of Environmental professional as defined in § 312.10 of 40 C.F.R. 312. I/we have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I/We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 C.F.R. Part 312.



Vivianne Bisson
Environmental Professional



David Rutherford
Environmental Professional

1.3 Business Environmental Risks / Non-ASTM Scope

Hillmann has performed a limited review of the following potential *business environmental risks* (BER), also known as "*Non-ASTM Scope*" concerns, in accordance with the contracted scope of work scope for this assessment. Additional details of the scope of work and findings are included in Sections 2 and 7.

Subject	Findings	Not Appl.	Rpt. Ref.
Asbestos	Suspected ACM noted within the accessed building areas included drywall materials, vinyl floor tiles, ceiling tiles and mastic. Although not observed, roofing materials are also assumed ACM.		7.1
Lead Paint	No residential buildings built prior to 1978 were present at the Property.		7.2
Radon	Property is located in the USEPA radon designation Zone 2 or 'moderate risk' area for radon.		7.3
Mold/ Microbial Damage	No evidence of significant problems with moisture intrusion or mold/ microbial growth was noted at the Subject Property.		7.4
NWI Wetlands	A review of NWI Wetlands Mapper did not indicate regulated wetland areas on the Property.		7.5
Lead in Drinking Water	Potable water service at the Property is provided by a utility connection with Moulton Niguel Water District. A recently published water quality report from the utility indicated compliance with USEPA water quality standards for lead in drinking water.		7.6

2.0 GENERAL

2.1 Purpose and Scope

This assessment was conducted utilizing generally accepted Phase I ESA industry standards in accordance with the ASTM Standard Practice E 1527-21. The ASTM describes these methodologies as representing good commercial and customary practice for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. § 9601) and petroleum products. This practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner or bona fide prospective purchaser limitations on CERCLA liability ("landowner liability protections," or "LLPs"): that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the Subject Property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35) (B). The goal of the processes established by ASTM E1527-21 is to identify *recognized environmental conditions* in connection with the Subject Property.

The term *recognized environmental condition* (REC) is defined by ASTM E1527-21 as "*(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.*"

The term *controlled recognized environmental condition* (CREC) is a type of recognized environmental condition and defined by ASTM E1527-21 as a "*recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations).*"

The term *historical recognized environmental condition* (HREC) is defined as a "*previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations).*" The ASTM E1527-21 standard has clarified that a historical recognized environmental condition is not a recognized environmental condition.

The term *de minimis condition* is defined by the ASTM, "*…a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.*" A condition determined to be a de minimis condition is not REC nor a CREC.

The chief components of this assessment are generally described as follows:

- A non-invasive visual reconnaissance of the Subject Property and adjoining properties in accordance with ASTM guidelines for evidence of RECs.

- Interviews of past and present owners and occupants and state and local government officials, seeking information related to the potential presence of RECs at the Subject Property.

- A review of standard physical record sources for available topographic, geologic and groundwater data.

- A review of standard historical record sources, such as fire insurance maps, city directories, aerial photographs, prior reports and interviews, etc., to determine prior uses of the Subject Property from the present, back to the Subject Property's first developed use, or back to 1940, whichever is earlier.

- A review of standard environmental record sources including federal and state environmental databases, and additional environmental record sources, to identify potential regulatory concerns with the Subject Property, adjoining properties and properties located within the surrounding area.

An evaluation of environmental or other regulatory compliance matters is excluded from the scope of this assessment.

These methodologies are described as representing good commercial and customary practice for conducting an Environmental Site Assessment of a property for the purpose of identifying recognized environmental conditions.

Business Environmental Risks/Non-ASTM Scope Considerations

Hillmann has performed a limited review of the following potential *business environmental risks* (BER), also known as "*Non-ASTM Scope*" concerns, in accordance with the contracted scope of work scope for this assessment. BER is defined by ASTM E 1527-21 as *"a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice."*

- Asbestos-Containing Materials (ACM): A cursory non-intrusive visual screening for the presence of suspect ACM within the accessed areas of buildings built prior to 1990 on the Subject Property. If the Subject Property contains buildings built in 1990 or later, the contracted scope of work excludes a cursory non-intrusive visual screening or any other level of evaluation for suspect ACM; however, the exclusion for buildings built ≥1990 should not be interpreted to suggest that any such buildings are free of ACM or would not warrant evaluation of building materials for ACM prior to disturbance. It is emphasized that this cursory non-intrusive visual screening does not constitute an asbestos survey/inspection of the premises. An asbestos survey/inspection should be sought by the report User(s) if a greater certainty is desired regarding ACM and potential asbestos hazards at the Subject Property. Furthermore, a review of regulatory compliance matters pertaining to asbestos is excluded from the scope of work.

- Lead-Based Paint (LBP): A cursory non-intrusive visual screening of the condition of painted surfaces in the accessed areas of residential buildings/units built prior to 1980 on the Subject Property. If the Subject Property contains buildings built in 1980 or later, the contracted scope of work excludes any cursory non-intrusive visual screening or other level of evaluation for suspect LPB; however, the scope of work exclusion for building built ≥1980 should not

be interpreted to suggest that any such buildings are free of LPB or other lead hazards. It is emphasized that this cursory non-intrusive visual screening does not constitute a comprehensive survey for LBP or potential lead hazards. A comprehensive inspection should be sought by the report User(s) if more certainty is desired regarding LBP at the Subject Property. Furthermore, a review of regulatory compliance matters pertaining to lead-based paint is excluded from the scope of work.

- USEPA Designated Radon Potential: Review of general non-site specific data published by the USEPA regarding the Radon Zone classification for the area of the Subject Property.

- Mold/Microbial Damage: A cursory non-intrusive visual screening within the accessed areas of buildings on the Subject Property for evidence of systemic microbial problems, including visible mold growth, water damaged building materials or musty odors. It is emphasized that this cursory non-intrusive visual screening does not constitute a comprehensive survey for moisture/mold/microbial damage. A more comprehensive inspection should be sought by the report User(s) if more certainty is desired regarding the potential for moisture/mold/microbial damages at the Subject Property.

- NWI Wetlands: The Subject Property has been reviewed for jurisdictional wetlands using the National Wetlands Inventory-Wetland Mapper to determine whether mapped federal wetlands have been indicated on the Subject Property. Any further evaluation or legal delineation of regulated wetlands areas is excluded from the scope of work. It is also emphasized that a field delineation of regulated wetlands by a qualified professional would be warranted to more fully determine the presence or absence of regulated wetlands at the Subject Property.

- Lead in Drinking Water: Review of the potential for elevated levels of lead in the drinking water by determining the source of the drinking water supply and a review of available testing or compliance data reports.

2.2 Property Location/Legal Description

Property location and legal description details are described as follows:

Primary Street Address:	95 Argonaut				
City:	Aliso Viejo	County:	Orange	State:	California
Tax ID/Parcel Number:	623-091-01; Per Assessor				
Approx. Land Area:	2.85 acres (per Assessor)				
Apprx. Latitude/Longitude:	North 33.5945930 - 33˚35’ 40.53” degrees/West 117.7244490 - 117˚43’ 28.01” degrees				
Additional Details (if appl.)	N/A				
Property Owner:	Argonaut Offices LLC (per the RealQuest.com and Lightbox)				
Zoning Designation:	Commercial; Per Assessor				

2.3 Data Gaps

A *data gap* is defined by the ASTM as a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap and the ability to determine the presence or absence of recognized environmental conditions. The following table summarizes data gaps encountered during the assessment as well as a discussion of their significance.

Data Gap:	Significant (Yes/No)?	Discussion
Historical records data failure	No	Records gaps exceeding five years were encountered; however, no significant site use changes are suspected during these intervals.

2.4 ESA Report Component Dates/Viability

The ASTM E1527-21 standard states that an environmental site assessment (ESA) is presumed to be viable when it is conducted within 180 days prior to the date of acquisition of the Subject Property (or, for transactions not involving an acquisition such as a lease or refinance, the date of the intended transaction). Specifically, all of the following components must be conducted or updated within 180 days prior to the date of acquisition or prior to the date of the transaction. The following table summarizes the component completion dates:

ESA Component	Completion Date
Interviews:	April 15, 2024
Env. Lien Search:	Excluded from report scope.
Government Records Review:	April 11, 2024
Visual Inspections:	April 16, 2024
Env. Professional Declaration:	April 24, 2024

2.5 User Reliance

This report is for the exclusive use of MLC Holdings, Inc. and additional relying entities, if any, named on the front cover. No additional individuals or entities shall be permitted to rely upon any data, interpretation, reports or other information or documentation contained in this report, without first obtaining the consent of MLC Holdings, Inc.; and without obtaining written consent from Hillmann in the form of a reliance agreement/letter.

Hillmann may, in its sole discretion, withhold its consent to additional reliance and/or Hillmann may condition consent for reliance upon payment of a fee or other conditions.

2.6 Significant Assumptions

The following significant assumptions are made:

- The site operations at the time of the site visit are assumed to reflect typical site conditions relative to potential environmental conditions and that no concealment of environmental conditions or releases by site owners or occupants has occurred. Likewise, it is assumed that no areas of the Subject Property with potential environmental concerns or RECs were concealed or otherwise not reported, intentionally or unknowingly, by the Subject Property owners/occupants and/or site escort at the time of the site visit.

- For the purpose of estimating the approximate direction of groundwater flow in the absence of site-specific groundwater data, unless indicated otherwise, an assumption has been made that the gradient of groundwater flow follows the surface topography of the Subject Property and immediate surrounding area.

2.7 General Limitations and Exceptions

Limitations

The report turnaround time specified by the contract agreement for this assessment may present a limitation to the availability of pertinent regulatory agency records. Such limitations, if encountered, would be further specified in Section 4.1.

Significant limitations related to the condition or accessibility of the Subject Property at the time of the site reconnaissance, if encountered, are reported in Section 6.1.

Other Exceptions or Deletions

No other exceptions or deletions from the ASTM Standard E 1527-21 are reported.

Special Terms and Conditions

This Phase I Environmental Site Assessment has been prepared using reasonable efforts in each phase of its work to identify recognized environmental conditions associated with hazardous substances, wastes and petroleum products at the Subject Property. Findings within this report are based on information collected from observations made on the day of the site reconnaissance and from reasonably ascertainable information obtained from governing public agencies and private sources.

This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, site development, redevelopment, or other construction purposes. No representation or warranty is made that the past or current operations at the Subject Property are, or have been, in compliance with all applicable federal, state and local laws, regulations and codes.

Findings, conclusions and recommendations presented in this report are based on visual observations of the Subject Property, interviews conducted, the records reviewed, information provided by the Client, and/or a review of readily available and supplied drawings and documents.

No warranty or guarantee is made of the accuracy or completeness of information that was obtained from ostensibly knowledgeable individuals, regulatory agency representatives or other secondary sources, including information obtained during the assessment, whether written, graphic or verbal, provided by the Subject Property contact(s) or as shown on any documents reviewed or received from the Subject Property contact, owner or agent, or government agency source. Independent verification of the accuracy or completeness of all information reviewed or received during the course of this assessment is not made and excluded from the scope of work for this assessment.

Regardless of the findings stated in this report, Hillmann is not responsible for consequences or conditions arising from facts that were concealed, withheld or not fully disclosed at the time the assessment was conducted.

This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

The regulatory database report provided is based on an evaluation of the data collected and compiled by a contracted data research company. Hillmann can neither warrant nor guarantee the accuracy or completeness of the information obtained from the regulatory database report provider during the course of this assessment.

Subsurface conditions may differ from the conditions implied by the surface observations and can only be reliably evaluated through intrusive techniques.

Reasonable efforts have been made during this assessment to identify aboveground and underground storage tanks and ancillary equipment. Reasonable efforts are limited to information gained from visual observation of largely unobstructed areas, recorded database information held in public record and available information gathered from interviews. Such methods may not identify surficial and subsurface features that may have been hidden from view due to parked automobiles and other vehicles, snow cover, vegetative growth, pavement, construction or debris pile storage or incorrect information from sources.

No guarantee, explicit or implied, is made that the records pertaining to historical ownership or occupancy which were reviewed represent a comprehensive or precise delineation of past Property ownership or tenancy for legal purposes.

The ASTM E1527-21 standard states that recommendations are not required to be included in a Phase I ESA report; however, further that recommendations are an additional service that may be useful in the User's analysis of landowner liability protections or business environmental risks; and that the User should consider whether recommendations for additional inquiries or other services are desired.

Recommended response actions offered in Section 1.3, if any, are provided as an option to the Client, and may have taken into account the Client's relation to the Subject Property and/or their intended purpose of this assessment. If included, it is not intended by Hillmann to represent the only course(s) of action, or inaction, to take. Furthermore, it is emphasized that additional response actions may become advisable depending on the outcome of the initial action(s) taken. Hillmann advises that Client and any additional authorized relying parties as specified on the report Cover and Section 2.5, or via letter of reliance extension, undertake consultation with

legal counsel familiar with environmental and real estate law would be beneficial to the decision making process for the type and timing of a response action to identified RECs or Business Environmental Risks, if any.

Due to the limited nature of our review of potential Business Environmental Risks, the User(s) of the report should consider whether to take additional action(s) to further define, properly manage and/or mitigate potential BERs.

The User(s) assumes responsibility for business decisions that it makes utilizing information in the report provided by Hillmann. Hillmann shall not be responsible for any conclusions, interpretations and/or decisions of the User(s).

In the event of any conflict between the terms and conditions of this report and the terms and conditions of the consulting services agreement for this project, the consulting services agreement shall control.

3.0 USER PROVIDED INFORMATION

The term "User" is defined by ASTM as the party seeking to use Practice E1527 to complete an environmental site assessment of the Subject Property; specifically, the entity or entities named on the front cover to which the report has been addressed.

3.1 Prior Environmental Reports/Documentation

No prior environmental reports/documentation were provided.

3.2 User Responsibilities

A User Questionnaire was provided to the User to assist in gathering information, as detailed below, that is required for disclosure during the assessment to meet All Appropriate Inquiry requirements. If completed and returned to Hillmann, a copy of the Questionnaire has been included in Appendix C.

A completed questionnaire was received by Hillmann. The following is a summary of the User's responses:

Question:	Yes/No:	Detail:
1. Search of Land Title and Judicial Records: Has the User performed a search of land title records and judicial records for environmental liens and/or Activity and Use Limitations (AULs) filed or recorded against the Subject Property?	No	N/A
1.a. If yes to Question 1: Did the search identify any environmental liens or Activity and Use Limitations (AUL), such as engineering controls, land use restrictions or institutional controls that are in place at the Subject Property and/or have been filed or recorded against the Subject Property under federal, tribal, state or local law?	N/A	N/A
1.b. If yes to Question 1: Has the User provided the result of the search of land title and judicial records to Hillmann?	N/A	N/A
2. Specialized knowledge or experience of the person seeking to qualify for the LLP: Do you have any specialized knowledge or experience related to the Subject Property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the Subject Property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	No	N/A
3. Relationship of the purchase price to the fair market value of the Subject Property if it were not contaminated: Does the purchase price being paid for this property reasonably reflect the fair market value of the Subject Property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the Subject Property?	Yes	N/A
4. Commonly Known or Reasonably Ascertainable Information: Are you aware of commonly known or reasonably ascertainable information about the Subject Property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example:	No	None.
4.a. Do you know the past uses of the Subject Property?	Yes	Office Space

4.b. Do you know of specific chemicals that are present or were once present at the Subject Property?	No	N/A
4.c. Do you know of spills or other chemical releases that have taken place at the Subject Property?	No	N/A
4.d. Do you know of any environmental cleanups that have taken place at the Subject Property?	No	N/A
5. The degree of obviousness of the presence or likely presence of contamination at the Subject Property, and the ability to detect the contamination by appropriate investigation: Based on your knowledge and experience related to the Subject Property are there any obvious indicators that point to the presence or likely presence of releases at the Subject Property?	No	N/A
6. Litigation, Administrative Proceedings, Government Notices: As the User of this ESA, do you have knowledge of (1) any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Subject Property; (2) any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the Subject Property; and (3) any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	No	N/A
7. User's Reason/Purpose for Performing Phase I ESA:	For due diligence of a future residential development.	

4.0 RECORDS REVIEW

4.1 Environmental Information

Physical Setting

Source	Discussion
USGS 7.5 minute Topo Map:	The Subject Property lies at an elevation of approximately 397 feet above mean sea level. An interpretation of topographic contour lines as well as a review of the EDR Geocheck-General Topographic Gradient suggested terrain sloping downward towards the southeast.
USDA Soil Data: (EDR GeoCheck)	The soil type at the Subject Property is classified as: Colleguas; well-drained, clay loam and sandy loam.
Geologic Data: (EDR GeoCheck)	The geologic formation in the vicinity of the Property is described as, Cenozoic Tertiary; Stratified Sequence
Prior Env. Reports: (Section 3.2)	Not applicable - no prior reports available.
Additional Sources/ Data:	No additional physical setting sources or data was obtained.
Groundwater Flow Discussion:	Based on a review of the above information as well as observation of the site, the direction of shallow groundwater flow at the site is inferred to be towards the southeast.

Federal, State and Tribal Environmental Record Sources

Standard government records were obtained and reviewed primarily via a third-party regulatory database report, titled EDR Radius Map™ Report, prepared by Environmental Data Resources of Shelton, CT. The report provided government records from the standard environmental resources and within minimum search distances specified by Section 8.2.2-Table 2 of the ASTM E1527-21; and were reviewed for the purpose of identifying potential RECs in connection with the Subject Property. Additional detail of the source and significance of the regulatory databases can be found in the regulatory database report in Appendix E. Hillmann has also included discussion of records pertaining to the Subject Property from other government record sources not specifically listed under Table 2, as applicable.

Reported distances for adjoining property listings, if applicable, are approximate and indicative of the presence of a public roadway or right-of-way between the adjoining site and Property.

The reported gradients have been estimated based on a number of factors including but not necessarily limited to field observation, review of topographic maps, database listing details and/or site specific geo-technical data.

Limited analysis of the details of on-site, adjoining and vicinity database sites was conducted to identify potential sources of sub-surface vapor encroachment. This review was based on elements of the ASTM “Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions” (ASTM E 2600-15); and also on elements of “Methodology for Identifying the Area of Concern Around a Property Potentially Impacted by Vapor Migration from Nearby Contaminated Sources” (Buonicore, 2011-S-103-AWMA). Vicinity database sites

pertaining to non-petroleum product releases within 1,760 feet of the Subject Property in the up-gradient direction, 365 feet of the Subject Property in the cross gradient direction and 100 feet of the Subject Property in the down gradient direction; and vicinity database sites pertaining to petroleum product releases within 528 feet of the Subject Property in the up-gradient direction, 165 feet of the Subject Property in the cross gradient direction and 100 feet of the Subject Property in the down gradient direction were reviewed to identify active contamination sites with the potential to affect subsurface vapor conditions at the Subject Property. The potential for vapor encroachment was considered in assessing whether or not a REC exists in connection with the Subject Property when reviewing applicable sites within those distances.

Regulatory database sites with active petroleum or non-petroleum releases that are considered to constitute a vapor encroachment condition (VEC) to the Subject Property, if any, are identified and discussed in this section.

The EDR Radius Map report is attached in Appendix D.

Subject Property Listings

The following listings of the Subject Property were identified:

Name/Address:	SUN ALLIANCE/95 ARGONAUT
Database(s):	HWTS
Data Discussion:	The site is listed in HWTS database from 1998 to 2000; EPA ID: "CAL000188181. " The status is listed as "Inactive." No other pertinent information is listed.
REC Discussion:	The listing does not represent a release to the site. Based on the details provided above, a REC is not suspected in connection with the Subject Property.
VEC Discussion:	Based on the reviewed data, a VEC is not suspected.

Adjoining Property Listings

The following adjoining property listings were identified.

Name/Address:	INCEPTUS MEDICAL/ 8 Argonaut, suite 100
Database(s):	RCRA NonGen / NLR
Dist./Dir./Gradient:	242 feet/SW/down and cross-gradient
Data Discussion:	EPA number: "CAL000188181." Opened on 02/23/1998, Closed on 06/30/2000. Status is listed as "Inactive". No violations reported. No other pertinent information given.
REC Discussion:	This listing is not an indication of a hazardous materials release to the environment and is down-gradient from the Subject Property. Based on the details provided above, a REC is not suspected in connection with the Subject Property.

VEC Discussion:	This listing is not an indication of a hazardous materials release to the environment and is down-gradient from the Subject Property. Based on the reviewed data, a VEC is not suspected.

Name/Address:	SOFT HEALTH TECHNOLO/ 8 Argonaut, suite 170
Database(s):	RCRA NonGen / NLR
Dist./Dir./Gradient:	242 feet/SW/down and cross-gradient
Data Discussion:	EPA number: "CAL000472373." No violations reported. NAICS Description: ALL OTHER MISCELLANEOUS MANUFACTURING. No other pertinent information given.
REC Discussion:	This listing is not an indication of a hazardous materials release to the environment and is down-gradient from the Subject Property. Based on the details provided above, a REC is not suspected in connection with the Subject Property.
VEC Discussion:	This listing is not an indication of a hazardous materials release to the environment and is down-gradient from the Subject Property. Based on the reviewed data, a VEC is not suspected.

Surrounding Area Findings

The following is a discussion of non-adjoining sites identified as located within the ASTM specified search distance surrounding the Subject Property. In order to keep this discussion informative and concise, discussion(s) is/are provided of the listed site(s) for each database category that appears most likely to impact the Subject Property based on distance, area topography and/or regulatory status. Listings of sites within the applicable search distances not specifically discussed below were reviewed and concluded not to be RECs in connection with the Subject Property or VECs based on various factors including distance, area topography, known or inferred groundwater flow direction and/or regulatory status.

Federal - NPL

ASTM Search Distance:	1-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

Federal - Delisted NPL

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			

VEC Discussion:	

Federal - SEMS

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

Federal - SEMS Archive

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

Federal - CORRACTS

ASTM Search Distance:	1-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

Federal - RCRA-TSD

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

State/Tribal - Superfund / Hazardous Waste Sites

ASTM Search Distance:	1-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		

Dist/Dir/Gradient:	
Details:	
REC Discussion:	
VEC Discussion:	

State/Tribal - Landfill / Solid Waste Disposal

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

State/Tribal - Leaking Storage Tanks

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	1
Notable Listing:	LUST		
Dist/Dir/Gradient:	2,223 feet/SW/down and cross-gradient		
Details:	United Parcel Service located at 22 Brookline Aliso Viejo, CA 92656. "Completed - Case Closed" on 01/04/1996, Diesel, Gasoline.		
REC Discussion:	Based on the details provided above, a REC is not suspected in connection with the Subject Property. The site is "Case Closed" and is down/cross gradient of the subject Property.		
VEC Discussion:	Based on the reviewed data, a VEC is not suspected. The site is "Case Closed" and is down/cross gradient of the Subject Property.		

State/Tribal - Voluntary Cleanup Sites

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			
REC Discussion:			
VEC Discussion:			

State/Tribal - Brownfields

ASTM Search Distance:	1/2-mile	Number of listings within ASTM Search Distance:	0
Notable Listing:	No listings were identified within the search distance.		
Dist/Dir/Gradient:			
Details:			

REC Discussion:	
VEC Discussion:	

Unmapped/Orphan List Sites

Hillmann has also reviewed a list of unmapped sites (a.k.a. “Orphan List” sites) indicated by the database report. Unmapped sites that were identified as falling within an applicable specific search distance or warranting discussion have either been discussed in the preceding tables or are detailed below:

Name/Address:	• Artistic Maintenance Inc/ SE Corner Moulton & Ridge Rout • Golden Rain Foundation of Lag Hill/ 24401 Moulton PKY
Database(s):	• CPS-SLIC, respectively • LUST, EMI, respectively
Dist./Dir./Gradient:	• Approximately, 10,560 feet northeast, respectively • Approximately, 15,840 feet northeast, respectively
Data Discussion:	• Artistic Maintenance is listed as a "Completed - Case Closed" release site, dated 1995. No other pertinent information is given. • Golden Rain Foundation of Lag Hill is listed as a "Case Closed" release site, dated 1985; soils only; gasoline. It is also listed in 2002, 2003 and 2004 as emitting, Organic Hydrocarbon Gases, Reactive Organic Gases, Carbon Monoxide, NOX - Oxides of Nitrogen, SOX - Oxides of Sulphur, and Particulate Matter. No other pertinent information is given.
REC Discussion:	The site is "Inactive" and is "Case Closed." Based on the details provided above, a REC is not suspected in connection with the Subject Property.
VEC Discussion:	The site is "Inactive" and is "Case Closed." Based on the reviewed data, a VEC is not suspected.

Additional Environmental Record Sources

Requests have been submitted to local, municipal and state agencies for pertinent records pertaining to the Subject Property, particularly with regard to potential environmental concerns such as petroleum storage tanks, storage and usage of hazardous substances and petroleum products, and/or known or suspected environmental contamination. Where applicable, internet research of government environmental regulatory databases was also conducted, as well as a general cursory internet search of the Subject Property address, for information indicative of a REC. The following table summarizes the findings of the research:

Source	Type of Request	Outcome
Orange Co. Health Care Agency CUPA	FOI request	A records request was submitted on April 10, 2024. A response was received on April 17, 2024. No records for the Subject Property were located.
CA GeoTracker database (geotracker.waterboards.ca.gov/)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
CA DTSC Envirostor database (www.envirostor.dtsc.ca.gov/public/)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
CA DTSC	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
South Coast Air Quality Management District (SCAQMD)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
EPA Envirofacts (https://enviro.epa.gov/)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
Cal EPA Regulatory Site Portal (https://siteportal.calepa.ca.gov/nsite/map/help)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
DOGGR - Well Finder (https://maps.conservation.ca.gov/doggr/wellfinder/#openModal)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
NPMS - National Pipeline Mapping System (https://pvnpms.phmsa.dot.gov/PublicViewer/)	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.
SoCal Pipeline Mapping System (https://www.socalgas.com/stay-safe/	Online search	Hillmann searched online for records pertaining to the Subject Property. No records pertaining to the Subject Property are currently listed.

Source	Type of Request	Outcome
pipeline-and-storage-safety/ natural-gas-pipeline-map)		
FEMA Flood Maps (https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd)	Online search	Hillmann searched online for records pertaining to the Subject Property. The Subject Property is listed in Flood Zone X; AREA OF MINIMAL FLOOD ALISO HAZARD.
Local Building/ Code Enforcement (https://alisoviejoca-energovpub.tylerhost.net/apps/SelfService#/search)	Online search	Hillmann searched online for records pertaining to the Subject Property. The following pertinent information was listed: Four (4) permits are listed as follows: • "Demo and new construction of self-storage site prelim meeting". 9/28/2022. • "Building to self-storage facility, with additional exterior single-story self-storage units on site at 95". 7/5/2023. • "Pre-Application Review for a proposed town-home development (62 townhomes, 2.85 acres, 2-4 bedrooms) at 95". 3/25/2024. • "Pre-Application Review for a proposed housing development: 54, 3-story townhomes at 95 Argonaut" 1/18/2024.
Orange Co. Assessor/ Real Quest	Online search	Hillmann searched online for records pertaining to the Subject Property. The following pertinent information was listed: • APN: 623-091-01 • Constructed in 1989 • Commercial • Owner: Cathie D Feilberg • 2.85 acres

4.2 Historical Research

Historical records have been compiled and analyzed for historical property information and developing a history of previous uses of the Subject Property, adjoining properties and surrounding area. These records were reviewed for the purpose of identifying the likelihood of past uses having led to RECs in connection with the Subject Property.

The historical record sources listed below have been sought with the objective to document past uses of the Subject Property from the present back to the Subject Property's first developed use, or back to 1940, whichever is earlier. The term "developed use" includes agricultural use, placement of fill dirt and other uses that do not involve structures. Hillmann has sought to review historical records in minimum intervals of five years.

Fire Insurance Maps

A Certified Sanborn Map Report was obtained from EDR for a review of published historical fire insurance maps for the Subject Property and surrounding area. The following is a summary of site uses and notable details depicted by the available maps:

Year(s)	Subject Property	Adjoining Properties
N/A	NO COVERAGE.	NO COVERAGE.

A copy of the Certified Sanborn Map Report is attached in Appendix E.

City Directories

An EDR City Directory Abstract report was reviewed for data of prior occupants of the Subject Property's street address. The following is a generalized summary of the findings of city directory research for past occupants of the Subject Property.

Subject Property Use(s) / Occupant(s)	Years
No Listings	1920 to 1981
Numerous commercial office tenants	1982 to 2020

The EDR City Directory Abstract report was also reviewed for listings of prior occupants of the adjoining properties. The following is a generalized summary of the findings of city directory research for past occupants of the adjoining properties:

Adjoining Property Use(s) / Occupant(s)	Years
No listings	1920 to 1969
Numerous general office listings (SE; 85 Argonaut)	1992 to 2020
Numerous general office listings (SW; 92 Argonaut)	1992 to 2020
Numerous general office listings (West; 1 Argonaut)	1992 to 2020
Numerous general office listings (West; 5 Argonaut)	1992 to 2020
Water tanks (East; 25343 Cedarbrook)	Not listed
Community Park/ B- MA GICA L, MIND-BODY, MEDICINAE, BULENT GUNDOGAR (North; 118 Playa Circle)	2014, 2020

A copy of the EDR City Directory report is attached in Appendix E.

Historical Topographic Maps

Historical topographic maps of the Property and vicinity obtained from an EDR Historical Topographic Map report (as attached in Appendix E) have been reviewed. The following interpretation of land usage was made by review of the maps:

Year(s)	Subject Property	Adjoining Properties
2022, 2018, 2015, 2012, 1981, 1974, 1968, 1949, 1948, 1942, 1902	No structures depicted. An intermittent creek is depicted along north-central portion of the site.	No structures depicted.

If obtained, copies of historical aerial photographs have been included in Appendix E.

Historical Aerial Photographs

Historical aerial photographs of the Property and vicinity obtained from an EDR Aerial Photo Decade Package report, as attached in Appendix E, were reviewed. The following interpretation of land usage was made by review of the aerial photographs:

Year(s)	Subject Property	Adjoining Properties
1938, 1946, 1952, 1963, 1967, 1972, 1974 and 1981	Appears to be a combination of vacant, graded land and agricultural land.	Appears to be a combination of vacant, graded land and agricultural land.
1989	Appears to be graded land with the footprint of current improvements.	Appears to be current improvements to the east, south, and west. Across a roadway to the north, appears to be vacant, graded land.
1994	Appears to be current improvements.	Appears to be no significant changes from prior photograph.
2002	Appears to be no significant changes from prior photograph.	Appears to be no significant changes from prior photograph to the east, south, west and northeast. Across a roadway to the northeast, appears to be developed with a park, a commercial building and parking lot.
2005	Appears to be no significant changes from prior photograph.	Appears to be no significant changes from prior photograph to the east, south, west and northeast. Across a roadway to the northeast, appears to be developed with a park, three (3) additional commercial buildings and a parking lot.

Year(s)	Subject Property	Adjoining Properties
2009	Appears to be no significant changes from prior photograph.	Appears to be no significant changes from prior photograph to the east, south, west and northeast. To the northwest and northeast across a roadway appears to be graded land partially developed with current improvements.
2012 to 2020	Appears to be no significant changes from prior photograph.	Appears to be current improvements.

If obtained, copies of historical aerial photographs have been included in Appendix E.

EDR High-Risk Historical Records

The EDR Radius Map™ report, which is discussed in greater detail in Section 4.1 and attached in Appendix D, provided a search of proprietary databases of potential historical high-risk uses at or in the vicinity of the Subject Property. These databases include EDR Hist Cleaner – a database of property addresses with records of historical occupancy by suspected cleaners businesses; EDR Hist Auto – a database of property addresses with records of historical occupancy by potential automotive gas/filling stations and repair facilities; and EDR MGP- a proprietary database of sites historically occupied by manufactured gas plants and related facilities.

EDR Database	On-site Listings	Adjoining/Off-site Listings
EDR Hist Cleaner: (on-site/adjoining only)	None identified	None identified
EDR Hist Auto: (on-site/adjoining only)	Corte Fina Homeowners Assoc-95 Argonaut is listed for the years 2007 and 2008 as "Gasoline Service Stations, NEC". No other information is listed. The listing appears to be an administrative listing only and does not indicate that a historical auto station previously existed at the Subject Property.	None identified
EDR MGP: (1-mile distance)	None identified	None identified

Petroleum/Natural Gas Well Review

No record of any historical petroleum/natural gas wells at or adjoining the Property was identified.

Additional Historical Data

Where applicable, the following additional pertinent historical data was obtained:

Interviews/ Anecdotal:	No additional pertinent historical data was obtained.
Local Gov't Records:	No additional pertinent historical data was obtained.
Prior Env. Reports:	Not applicable; no prior reports were provided.
Site Observations:	Indications of historic uses of the Property or adjoining properties were not observed during the site reconnaissance.
Other Sources:	No additional pertinent historical data was obtained.

Summary of Identified Historical Uses

The following table presents a summary of the types and approximate date ranges of identified prior uses of the Subject Property:

Date Range	Subject Property Use(s)
1938 to 1988	Agricultural
1989 to Present	Commercial office building with parking lot.

The following table presents a summary of the types of identified prior uses of the adjoining properties:

Date Range	Adjoining Property Use(s)
1938 to 1989	Agricultural
1990 to Present	Single-family residential, office buildings, and a community park.

Historical Records Data Failure

The ASTM E1527-21 standard defines data failure as failure to achieve the historical research objective even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. The objective is to identify all obvious uses of the Subject Property from the present, back to the Subject Property's first developed use, or back to 1940, whichever is earlier. Furthermore, records of historical use/conditions were sought in intervals no less than approximately five years, unless the Subject Property conditions appear unchanged over a longer interval. In encountered, data failure and its significance as a data gap is discussed below:

Objective	Met?	Detail	Significant?
First developed use/ date determined?	No	The earliest documented use of the Property was agricultural land circa 1938.	No

Objective	Met?	Detail	Significant?
Record sources at 5-year intervals back to 1940 or first developed use?	No	Historical record gaps exceeding five years were encountered. However, significant site-use changes or undiscovered site uses appear unlikely to have occurred during the record gaps.	No
All obvious prior uses identified?	Yes	See Summary of Identified Past Uses of this section.	N/A

Please refer to Section 2.3 for additional discussion of data gaps and their significance to the findings of the assessment.

Historical Uses REC Discussion

The review of historical records did not indicate evidence of a REC in connection with the Property.

5.0 INTERVIEWS

5.1 Interviews with Owners, Operators and Occupants

Property Owner

Property Owner	Contact Name	Affiliation	Interview Type	Date
Argonaut Offices LLC (per the RealQuest.com and Lightbox)	Mayroth Urias	Owner's agent	Questionnaire	04/10/24
See Key Site Manager interview details below.				

Key Site Manager/Operator

Name	Company/Title	Yrs @ Site	Interview Type	Date
Mayroth Urias	Lincoln Property Company/Assistant Property Manager, Property Management	13	In person	04/16/24
An interview was conducted in person at the time of the site visit. Pertinent information, where applicable, is referenced in the appropriate sections of this report.				

Occupant(s)

Name	Company/Title	Yrs @ Site	Interview Type	Date
N/A				
No occupant interviews were conducted.				

Prior Owners/Operators/Occupant(s)

Name	Company/Title	Yrs @ Site	Interview Type	Date
N/A	N/A		N/A	
No interviews of prior owners, operators or occupants were conducted.				

Neighboring Property Owner(s)/Occupant(s)

Name	Company/Title	Yrs @ Site	Interview Type	Date
(none)	N/A		N/A	
The Subject Property was not an abandoned property with evidence of unauthorized uses or uncontrolled access; therefore, interviews with adjoining or nearby property owners or occupants were not conducted.				

5.2 Interviews with State and/or Local Government Officials

State and/or local governmental officials have been interviewed to obtain information of potential RECs in connection with the Subject Property. Many government agencies and their officials require submittal of written request for records in order to respond. The details in Section 4.1 list the various state and local government agencies contacted as part of this assessment, and the outcome of each inquiry. In addition, the details of regulatory database research in Section 4.1 may have included detail of interviews with officials pertinent to government records review and identification of RECs.

Additional interview of government officials not previously detailed in Sections 4.1 are discussed below, if applicable.

Name	Agency Name/Title	Interview Type
(None)	N/A	N/A
Interview Outcome/Findings:		
No additional local/state government officials were interviewed.		

6.0 SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

A site reconnaissance was conducted to collect information and make observations to help identify RECs in connection with the Subject Property. This included visual and/or physical observations of the Subject Property and its structures, adjoining properties as viewed from the Subject Property boundaries and the surrounding area based on visual observations from adjoining public thoroughfares and accessed Subject Property structures. Subject property building exteriors were observed at ground level, unless otherwise indicated. Where applicable, building interiors were accessed and observed to the extent they were made safely accessible with the cooperation of the site escort.

Site Inspection Personnel:	Vivianne Bisson
Property Escort/ Company:	Mayroth Urias/Lincoln Property Company
Inspection Date:	April 16, 2024
Weather Conditions:	70° F / clear

Significant Inaccessible Areas

No significant areas of the Property inaccessible at the time of the inspection were noted.

Significant Limiting Site Conditions

No significant limiting site conditions were noted at the time of the site reconnaissance.

6.2 General Site Setting

Site and Vicinity Characteristics

Abutting Roadways:	Glenwood Drive to the north; and Argonaut to the west
Current Property Use:	Commercial Office
Evidence of Past Property Uses:	None
Evidence of Past Adjoining Property Uses:	Office buildings
Surrounding Area Uses:	Office buildings, water tanks, single-family residential dwellings and a community park.

Current Adjoining Property Uses

Dir	Street Address	Description
N	118 Playa Circle	Park Glen Community Park
E	25343 Cedar Brook	Moulton Niguel Water District - community water tanks
SE	85 Argonaut	Commercial office building
SW	8 Argonaut	Multiple commercial/light industrial buildings
W	1 and 5 Argonaut	Commercial/light industrial building
NW	Playa Circle, various addresses	Multi-family residential complex
NE	72 to 80 Summerland Circle	Single family residential

Topographic Characteristics

Terrain:	Flat to gently sloping
Direction of Downward Slope:	Southeast
On-site Water Bodies:	None
Other Significant Features:	None

General Description of Structures and Improvements

Buildings:	One (1)
Approx. Building Size:	49,975 feet (per Assessor)
Approx. Year Built:	1989 (per Assessor)
Number of Stories:	Two (2)
Subgrade Levels:	Zero (0)
Exterior Ground Cover:	Aphalt paved parking
Ancillary Structures:	None
Sources of Heating and Cooling:	SoCal Gas
Potable Water/Sewage Disposal:	Moulton Niguel Water District

6.3 Site Features and Conditions

Storage/Usage of Hazardous Substances and Petroleum Products

The following approximate number of containers, and general description of their contents, capacity, container types and storage conditions, were observed to be stored and/or used at the Subject Property:

Occupant	Substance	Qty/Container Type	Storage Conditions
N/A	(none)	N/A	N/A

Bulk Petroleum/Hazardous Material Storage Tanks

If identified or suspected, storage tanks for bulk petroleum or hazardous material storage are described as follows:

AST/UST	Product	Capacity	Construction	Year Installed	Status	Location/Notes
N/A	N/A	N/A	N/A	N/A	N/A	No storage tanks were identified.

Strong, Pungent or Noxious Odors and their Sources

No strong, pungent or noxious odors were noted at the Subject Property.

Standing Surface Water/Pools & Sumps

No standing water, pools or sumps containing liquids likely to be hazardous substances or petroleum products were noted.

Drums, Totes and Intermediate Bulk Containers

No hazardous substance or petroleum product drums were noted.

Unidentified Substance Containers

No unidentified substance containers suspected of containing hazardous substance or petroleum product were noted.

PCBs in Oil Filled Electrical/Hydraulic Equipment

The following oil-filled electrical/hydraulic equipment was identified at the Property: Elevator and transformers.

It is noted that identification of PCB containing fluorescent light ballasts, caulk, paint, or other materials located inside and are part of the building or structure is outside of the scope of the ASTM E1527-21 standard and this assessment.

Stains or Corrosion on Floors, Walls or Ceilings

No stains or corrosion of floors, walls or ceilings, excluding any staining from water, were noted.

Drains and Sumps

No floor drains or sumps were noted at the Subject Property.

Pits/Ponds/Lagoons

No pits, ponds or lagoons were identified in connection with waste treatment or disposal.

Stained Soil, Pavement/Stressed Vegetation

No stained soil, pavement or stressed vegetation was observed.

On-Site Solid Waste Disposal/Fill Material

No evidence of on-site disposal of trash, construction debris, demolition debris or other solid waste was observed.

Waste Water

Sanitary sewage generated at the Subject Property is discharged via a connection to the local public sewer system.

Septic Systems/Cesspools

No septic systems or cesspools were identified at the Subject Property.

Wells

No wells (including any dry wells, irrigation wells, injection wells, abandoned wells, or other wells) were identified at the Subject Property.

Railroad Spurs

No railroad spurs were identified on the Subject Property.

7.0 BUSINESS ENVIRONMENTAL RISKS

In accordance with the contract agreement for this assessment, Hillmann has performed cursory reviews of several potential Business Environmental Risks (also known as “Non-Scope Considerations”). The ASTM E1527-21 standard defines the term business environmental risk (BER) as, “a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.”

7.1 Asbestos-Containing Material (ACM)

The contracted scope of work included a cursory visual screening of the accessed portions of buildings at the Subject Property built prior to 1990 for suspect asbestos containing materials (ACM). The information provided in this section, where applicable, is limited to identification of potential suspect materials in the readily accessible and observed areas of the building, and their general condition. This is not intended to be a comprehensive survey for the presence of ACM, and no testing has been conducted.

- Suspected ACM noted within the accessed building areas include: Acoustical ceiling tiles, adhesives/mastics, and drywall.

7.2 Lead-Based Paint

The contracted scope of work included a cursory visual screening of the condition of painted surfaces in the accessed areas of residential buildings/units built prior to 1980. This is not intended to constitute a comprehensive survey for LBP or potential lead hazards, and no testing has been conducted.

- No residential buildings were present at the Property.

7.3 Radon

Data compiled by the USEPA, as summarized by the regulatory database report, indicated that the Subject Property is located in an area classified as Zone 2 or 'moderate risk'. area for radon. Radon testing was not included in the scope of this assessment.

7.4 Mold/Microbial Damage

The contracted scope of work included a cursory visual screening of the accessed areas of the building for evidence of significant damage to building materials and finishes as result of moisture intrusion and/or mold/microbial growth.

- No evidence of significant problems with moisture intrusion or mold/microbial growth was noted at the Subject Property.

7.5 NWI Mapped Wetlands

The National Wetlands Inventory online Wetland Mapper was reviewed for indications of jurisdictional wetlands at or immediately adjoining the Subject Property. The scope of work for this assessment excluded a visual determination of regulated wetlands at the Subject Property. It is emphasized that, regardless of the data reviewed via the NWI Wetlands Mapper, a field delineation of regulated wetlands by a qualified professional would be warranted to determine the presence or absence of regulated wetlands at the Subject Property.

- A review of NWI Wetlands Mapper did not indicate regulated wetland areas on the Property.

7.6 Lead in Drinking Water

Potable water service at the Property is provided by a utility connection with *Moulton Niguel Water District*. The scope of work for this assessment included a review of the potential for elevated levels of lead in drinking water by determining the source of the drinking water supply and a review of available compliance or testing data.

8.0 REFERENCES

ASTM International, “Designation E1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”; ASTM, West Conshohocken, PA, 2021.

ASTM International, “Designation E2600-15-Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transaction”, ASTM, West Conshohocken, PA, 2015.

United States Environmental Protection Agency (USEPA), “EPA Map of Radon Zones by U.S. County, EPA 402/F19/004”, www.epa.gov/radon/epa-map-radon-zones, 2019

U.S. Fish and Wildlife Service – National Wetlands Inventory, “Wetlands Mapper”, fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/ 2024

Environmental Data Resources Inc. (EDR), “The EDR Radius Map™ Report with GeoCheck®”, EDR, Sheldon, CT, 2024.

EDR, “The EDR-City Directory Abstract”, EDR, Sheldon, CT, 2024.

EDR, “The EDR Aerial Photo Decade Package”, EDR, Sheldon, CT, 2024.

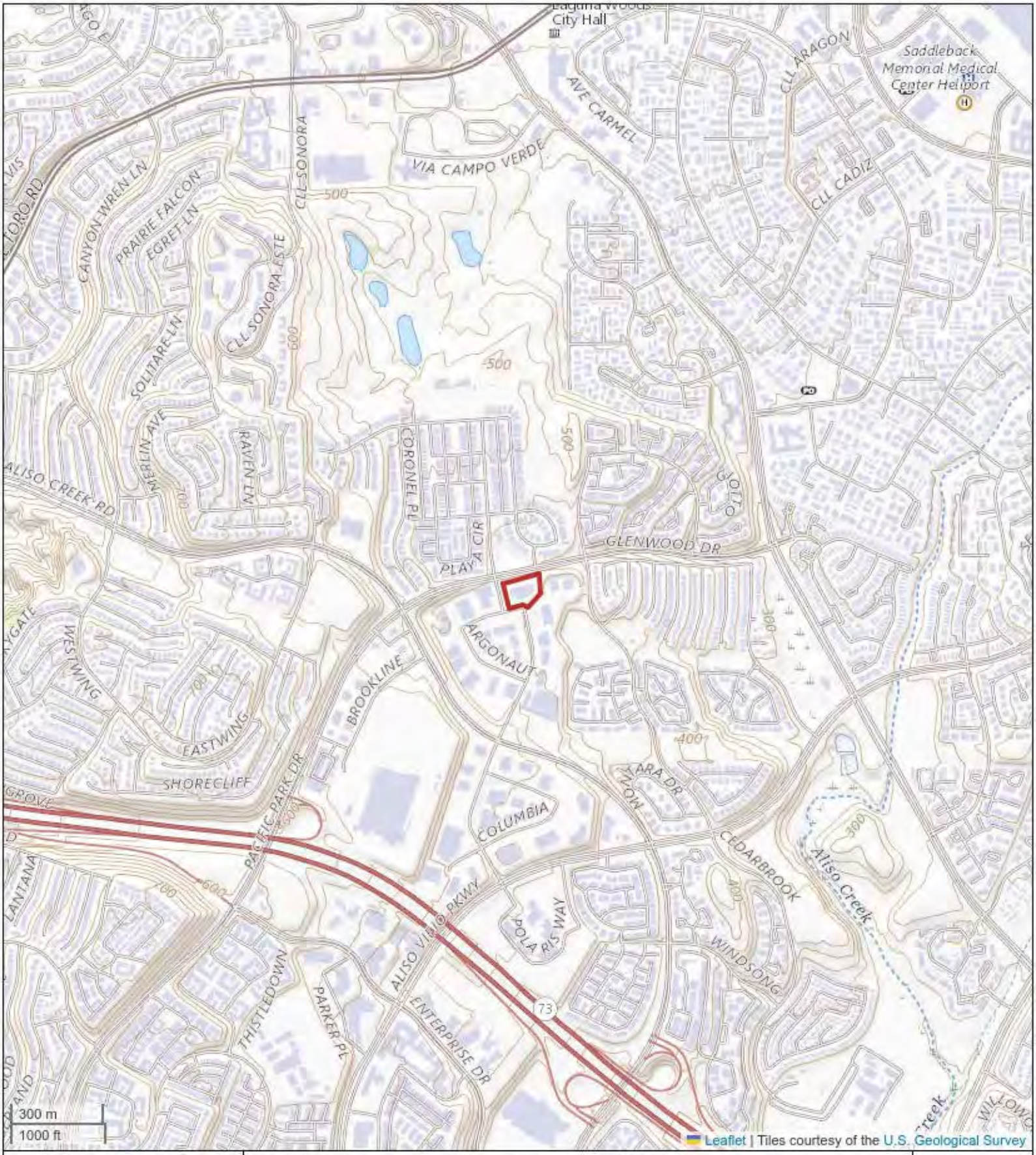
EDR, “Certified Sanborn Map Report”, EDR, Sheldon, CT, 2024.

EDR, “EDR Historical Topo Map Report with QuadMatch™”, EDR, Sheldon, CT, 2024.

Buonicore A., “Methodology for Identifying the Area of Concern Around a Property Potentially Impacted by Vapor Migration from Nearby Contaminated Sources, Paper 2011-A301-AWMA”, The Buonicore Group, Milford, CT, 2011.

APPENDIX A

Site Diagram/Vicinity Map



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Site Location Map

95 Argonaut
Aliso Viejo, California 92656

SCALE: (Not to scale)

PROJECT No: C#-9987

N



HILLMANN CONSULTING

Site Diagram

95 Argonaut
Aliso Viejo, California 92656

SCALE: (Not to scale)

PROJECT No: C#-9987

N

APPENDIX B

Site Photographs

SITE PHOTOGRAPHS



1. Front entrance along the south elevation of the Subject Property building.



2. North perimeter of the Subject Property.



3. View of east perimeter of the Subject Property (looking north).



4. View of southeast perimeter of the Subject Property (looking northeast).



5. South perimeter of the Subject Property.



6. Southwest perimeter of the Subject Property.

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SITE PHOTOGRAPHS



7. West perimeter of the Subject Property.



8. Glenwood Drive (looking west); to the right, community park.



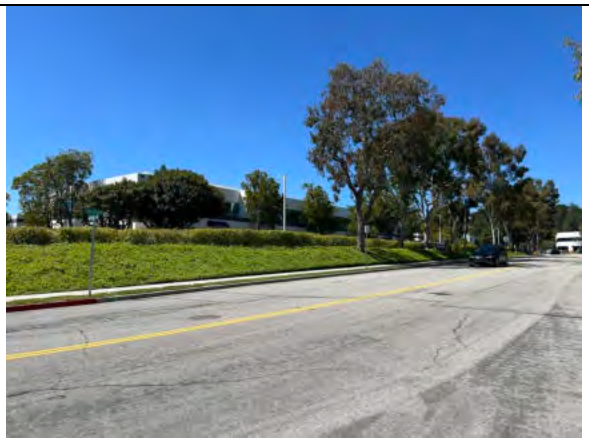
9. View of east adjoining water tanks.



10. Argonaut followed by south adjacent office building.



11. Argonaut followed by the southeast adjoining office building (85 Argonaut).



12. Argonaut followed by the west adjacent office building.

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SITE PHOTOGRAPHS



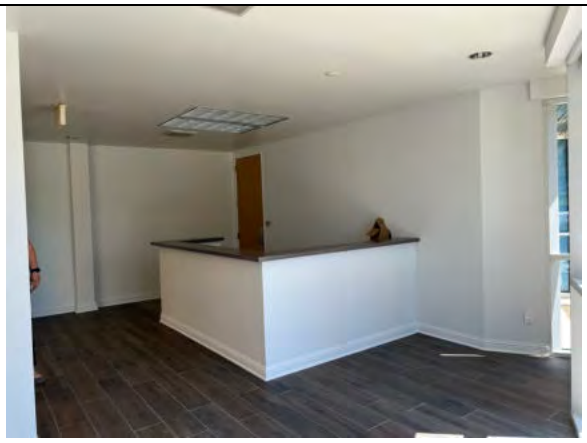
13. Intersection of Glenwood Drive and Argonaut followed by the northwest adjacent multi-family dwellings.



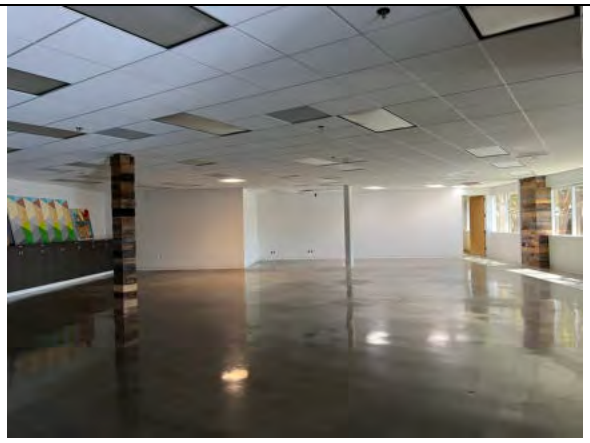
14. Typical view of entrance into an office unit.



15. View of lobby.



16. Typical interior view of an office (vacant unit).



17. Typical interior view of an office (vacant unit).



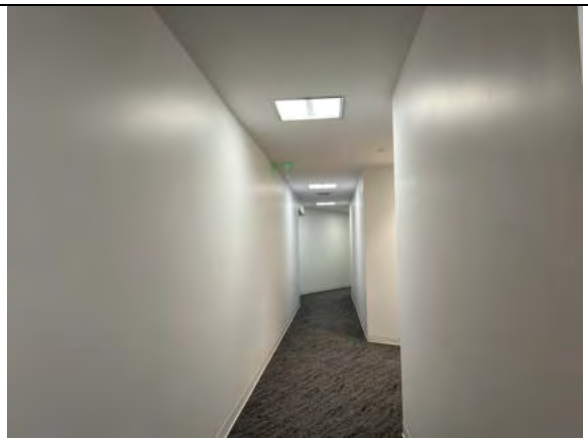
18. Typical interior view of an office (vacant unit).

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SITE PHOTOGRAPHS



19. Typical view of hallways.



20. View of lobby.



21. Typical view of restroom.



22. Typical interior view of an office (vacant unit).



23. Typical interior view of an office (vacant unit).



24. Typical interior view of an office (vacant unit).

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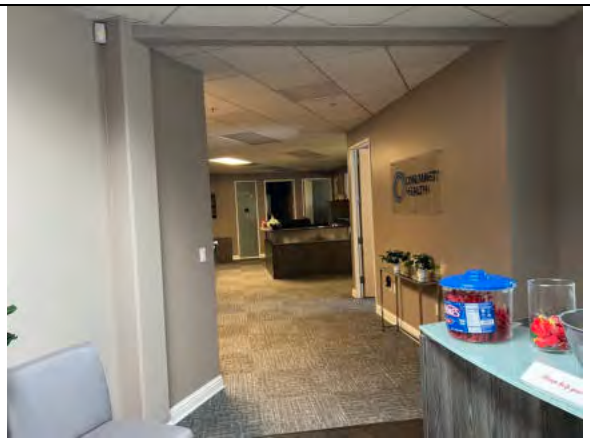
SITE PHOTOGRAPHS



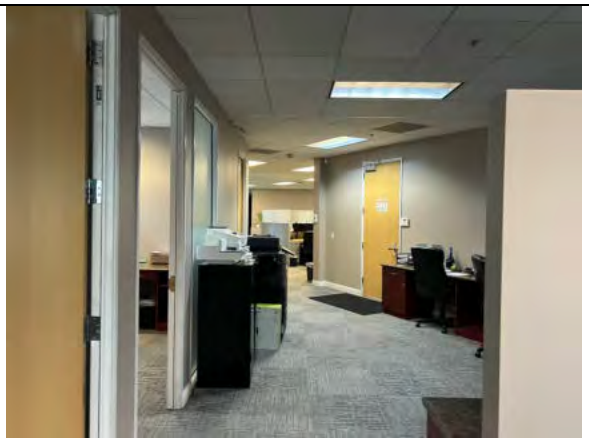
25. Typical interior view of an office (vacant unit).



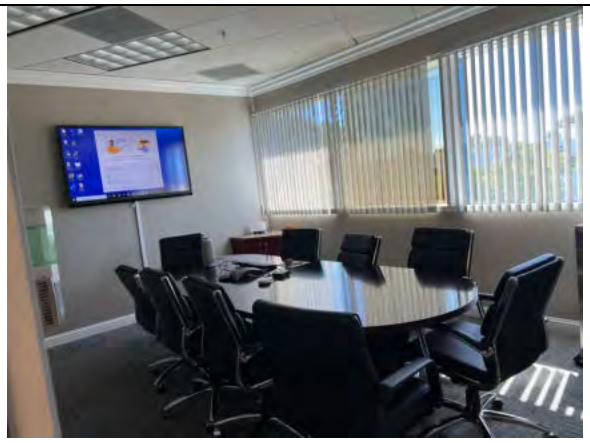
26. Typical interior view of an office (vacant unit).



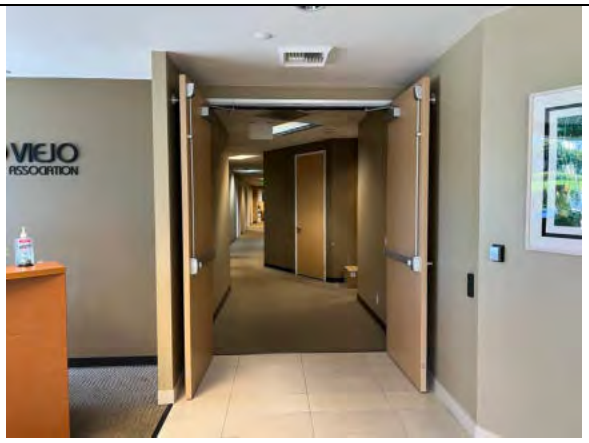
27. Typical view of an occupied unit.



28. Typical view of an occupied unit.



29. Typical view of an occupied unit.



30. Typical view of an occupied unit.

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SITE PHOTOGRAPHS



31. Typical view of an occupied unit.



32. Typical view of an occupied unit.



33. Typical view of an occupied unit.



34. View of second maintenance closet.



35. View of elevator equipment.



36. Electrical room.

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SITE PHOTOGRAPHS



37. Solid waste bin located along the northeast corner of the site.



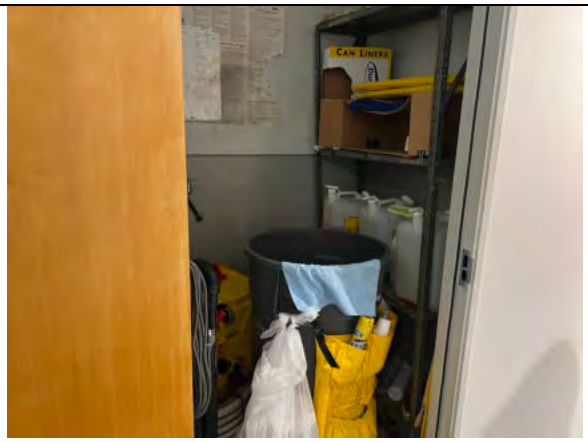
38. Solid waste bin enclosure located along the northeast corner of the site.



39. Interior view of the solid waste bin located along the southeast perimeter of the site.



40. Transformers located along the Northeast perimeter of the site.



41. View of maintenance closet.

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APPENDIX C

Questionnaires / User Provided Information

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PHASE I ESA - ENVIRONMENTAL QUESTIONNAIRE

Instructions: This questionnaire should be completed by the property owner, or representative(s) designated by the owner as being most knowledgeable of the physical characteristics, site use history and environmental condition of the subject property. Please complete, sign at bottom of page 5, and return to Hillmann via email, or in person during the site inspection. ***Hillmann contact name:*** Kofi Bonner ***Email:*** Kbonner ***@hillmannconsulting.com***

Document Request/Environmental Report Disclosure: Copies of existing environmental reports and other documents pertinent to the environmental condition of the Property are requested for review. This includes, but is not necessarily limited to, the following types of documents.

- Environmental assessments (Phase I ESA, Transaction screen ESA, Preliminary Assessments, etc.)
- Subsurface or water testing: (Phase II, site investigation, subsurface testing, drinking water, groundwater monitoring, etc.)
- Site remediation documents, and any associated regulatory correspondences
- Petroleum storage tank testing/closure reports, and any associated regulatory documents.
- Building survey/inspection/testing reports for asbestos, lead, mold or radon; any associated O&M documents
- Environmental permits/registrations/certifications (bulk petroleum, waste discharge, emissions, potable wells, etc.).
- Environmental/health/fire code regulatory violations or citations

Property Details			
Street address(es) City, ST ZIP:	95 Argonaut Aliso Viejo, CA 92656	Property ownership entity and primary contact person: (name/company/ph#/email):	Argonaut Offices, LLC Kevin Moshayedi/
Tax ID: (block/lot or APN)	623-091-01	Contact's affiliation to owner: (if other than the owner)	Owner
Property size: (acres or SF)	2.85-Acres	Questionnaire completed by: (if different than above)	Kevin Moshayedi
Total bldg. area:	48,860 SF	No. of years at, or familiar, with the Property:	13 Years
Number of residential units If residential:	N/A	No. of years-current ownership:	13 Years
Date(s) of bldg construction:	1990	Prior owner name/contact info: (if owned <5 yrs)	N/A

Current Non-Residential Occupants & Type of Use (For facilities with ≥ 10 non-residential occupants, please provide a copy of the latest rent roll in lieu of completing the table below)			
Occupant Name:	**Type of Use:**	**NAICS #** (if known)	**Appx # yrs at Property**
see attached rent roll			

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Utilities and Services:									
Type	**Yes**	**No**	**NA**	**Name of Provider**	**Type**	**Yes**	**No**	**NA**	**Name of Provider**
Water:	X			Moulton Niguel Water Dist	**Fuel Oil:**			X	
Sewer:	X			South OC Waterwater Authority	**HVAC Maint:**	X			Air Control Systems
Power:	X			SCE	**Elev Maint:**	X			Liftech Elevator
Nat Gas:	X			SoCal Gas	**Septic Maint:**			X	
Pest Control:	X			Beltran & Sons	**Pool Maint:**	X		X	

Please answer each question. Check "D/K" for "Don't Know". Additional space for comments/details is provided on Page 5.

Previous Environmental Investigations				
1.	Have any previous environmental investigations (see list on Page 1) been performed at the Property? *If YES, please briefly elaborate below and forward copies of the report(s):* Contract for Phase 1 from 2006 in files, but report not in files.	X **Yes**	**No**	**D/K**
Property & Adjoining Usage				
2.	To the best of your knowledge, is the Property or any adjoining property currently occupied or formerly occupied for industrial purposes? *If YES, please elaborate below:*	**Property:**		
			X	
		Yes	**No**	**D/K**
		Adj. Property:		
				X
		Yes	**No**	**D/K**
3.	Is the property or any adjoining property currently used, or have they ever been used, as a gasoline filling station, dry cleaning facility, automotive service/repair shop, auto body repair shop, commercial printing facility, photo development laboratory shop, junkyard, landfill, or as a waste treatment, storage disposal, recycling or processing facility? *If YES, please elaborate below:*	**Property:**		
				X
		Yes	**No**	**D/K**
		Adj. Property:		
				X
		Yes	**No**	**D/K**
4.	Have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials been dumped above grade, buried and/or burned on the property?			X
		Yes	**No**	**D/K**
Bulk Storage Tanks				
5.	Are there currently, or have there been previously, any registered or unregistered above ground or underground storage tanks located at the Property? *If YES, please provide number, size, age of tanks, permits, closure reports, regulatory agency correspondence, and related information.*	**Currently:**		
				X
		Yes	**No**	**D/K**
		Previously:		
				X
		Yes	**No**	**D/K**
6.	Are there currently, or have there been previously, any vent pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property? *If YES, please elaborate below:*	**Currently:**		
			X	
		Yes	**No**	**D/K**
		Previously:		
				X
		Yes	**No**	**D/K**
7.	Are there currently, or have there been previously, any leakage of hazardous substances or petroleum products from above ground or underground storage tank systems at the Property? *If YES, please elaborate below:*	**Currently:**		
			X	
		Yes	**No**	**D/K**
		Previously:		
				X
		Yes	**No**	**D/K**

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Spills, Releases, Wastes		
8.	Are there currently, or have there been previously, any waste discharges on or adjacent to the property, other than storm water or into a municipal sanitary sewer system? *If YES, please elaborate below:*	**Currently:** Yes: ; No: X; D/K: **Previously:** Yes: ; No: ; D/K: X
9.	Are there currently, or have there been previous, any septic systems, dry wells or leach fields on the property? *If YES, please elaborate below:*	**Currently:** Yes: ; No: X; D/K: **Previously:** Yes: ; No: ; D/K: X
10.	Are there currently, or have there been previously, any flooring, drains or walls located within the facility that are, or have been, stained by substances (or, in the case of drains, used for) other than water or are emanating foul odors? *If YES, please elaborate below:*	**Currently:** Yes: ; No: X; D/K: **Previously:** Yes: ; No: ; D/K: X
11.	Are there currently, or have there been previously, any spills or releases of hazardous substances or petroleum products within the building(s) or on the exterior of the Property? *If YES, please elaborate below:*	**Currently:** Yes: ; No: X; D/K: **Previously:** Yes: ; No: ; D/K: X
12.	Has any non-native and/or contaminated fill material been deposited on the Property? *If YES, please elaborate below:*	Yes: ; No: ; D/K: X
13.	Have any current or former property occupants generated hazardous wastes or other wastes (such as waste oil, or medical wastes) that required non-conventional storage, handling and/or disposal methods? *If YES, please indicate type of waste and the name of the waste handling contractor:*	Yes: ; No: ; D/K: X
Transformers/Hydraulic Equipment		
14.	Are any power transformers, capacitors, oil-filled switchgear or hydraulic equipment present at the Property? *If YES, please elaborate below; and indicate approximate age and ownership:* Transformers for powering building, Elevator is hydraulic	Yes: X; No: ; D/K:
15.	If hydraulic equipment is present, indicate approximate age of equipment & ownership: Transformers & elevator estimated install year: 1990	
Regulatory Disclosure		
16.	Have there been any environmental liens or governmental notification or involvement relating to past or current use or disposal of hazardous substances with respect to the property of any facility or structure located on the property? *If YES, please elaborate below:*	Yes: ; No: X; D/K:
17.	If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system, or has the well been designated as contaminated by any government environmental/health agency? *(If YES, please elaborate below. If not applicable, please check* NO*)*	Yes: ; No: X; D/K:

18.	Is there any environmental litigation, administrative action or cleanup action involving the property related to a release or threatened release of any hazardous substance or petroleum product? *If YES, please elaborate below:*		X	
		Yes	**No**	**D/K**
19.	Are you aware of testing of any environmental media (soil, groundwater, surface water, etc.) at the property which identified levels of contaminants in excess of regulatory standards and/or cleanup guidelines? *If YES, please elaborate below:*		X	
		Yes	**No**	**D/K**
Additional Environmental/Building Conditions				
20.a.	Has testing of building materials for asbestos ever been conducted at the Property? *If YES, please forward a copy of test results and/or survey reports:*			X
		Yes	**No**	**D/K**
20.b.	Are any asbestos containing materials known to be present at the Property? *If YES, please elaborate*:			X
		Yes	**No**	**D/K**
20.c.	Is there an Asbestos Operations & Maintenance (O&M) program in place? *If YES, please forward a copy*.		X	
		Yes	**No**	**D/K**
21.a.	Has lead paint testing/risk assessment ever been conducted at the Property? *If YES, please forward a copy of test results.*			X
		Yes	**No**	**D/K**
21.b.	Is lead-based paint known to be present at the Property? *If YES, please elaborate:*			X
		Yes	**No**	**D/K**
21.c.	Is there a lead paint Operations & Maintenance (O&M) (or equivalent) program in place*? If YES, please forward a copy*.		X	
		Yes	**No**	**D/K**
21.d.	For any residential buildings built prior to 1987, has any testing for lead in drinking water been performed? *If YES, please provide a copy of all test results*.		X	
		Yes	**No**	**D/K**
21.e.	If Yes to 23.d., has any lead testing of drinking water indicated results exceeding 15 parts per billion (or microgram per liter)? *If YES, please elaborate and forward documentation of any mitigation performed to reduce lead concentration in drinking water.*		X	
		Yes	**No**	**D/K**
22.a.	Has radon testing ever been conducted at the Property? *If YES, please forward a copy of test results.*			X
		Yes	**No**	**D/K**
22.b.	Are there any radon mitigations systems at the Property? *If YES, please provide details of the systems including the most recent service records.*		X	
		Yes	**No**	**D/K**
23.a.	Are there any problems with water intrusion, water damaged surfaces or excessive mold growth within the buildings? *If YES, please elaborate*:		X	
		Yes	**No**	**D/K**
23.b.	Is there a Moisture Control (or Mold Management) Program in place *If YES, please forward a copy*.		X	
		Yes	**No**	**D/K**
24.a.	Are any pest control, pesticides or herbicides products utilized or applied at the Property? *If YES, please elaborate.* Exterior treatment for ants and spiders, interior treatment only as needed.	X		
		Yes	**No**	**D/K**
24.b.	If Yes to 24.a., are all products applied by licensed pest control contractor? *If YES, provide company name and any applicable license #s if available. If NO, please describe what products are utilized, who applies them and/or how they are applied or utilized.* Beltran & Sons Pest Control: License 58083	X		
		Yes	**No**	**D/K**

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Additional Details/Comments:
For any questions that warrant further elaboration, please use the following space as necessary, and/or provide documentation along with the completed questionnaire:

Certification	
I, Juliet Hover, state to the best of my knowledge, information and belief, that all of the facts stated in response to the questions and requests for information contained in this Environmental Questionnaire are true.	
Signature: Juliet Hover	Date: 4/10/2024
Title: Senior Portfolio Manager	
On behalf of: Argonaut Offices, LLC (name of entity)	

Exhibit G – Page 1

EXHIBIT "G"

RENT ROLL

Database: RIVERROCKGRP
Bldg Status: Active only

Rent Roll
Argonaut Offices LLC
1/1/2024

Page: 1
Date: 1/16/2024
Time: 12:17 PM

Bldg Id	Suit Id	Occupant Name	Rent Start	Expiration	GLA Sqft	Monthly Base Rent	Annual Rate PSF	Monthly Cost Recovery	Expense Stop	Monthly Other Income	-- Future Rent Increases -- Cat	Date	Monthly Amount	PSF
Vacant Suites														
235	100/130	Vacant			3,999									
235	105	Vacant			1,448									
235	160/170	Vacant			4,565									
235	215	Vacant			2,090									
235	260	Vacant			11,616									
Occupied Suites														
235	110	CARMELITAS TEQUILERIA CORP.	7/1/2022	9/30/2025	2,399	6,545.34	32.74	191.00			RNT	7/1/2024	6,741.70	33.72
											RNT	7/1/2025	6,943.95	34.73
235	115	AUSSIE PET MOBILE, INC	5/1/2012	4/30/2024	1,407	3,939.60	33.60	232.00						
235	120	PARAMOUNT BED USA CORPORAT	3/1/2020	2/28/2025	3,668	10,821.93	35.40	527.00			RNT	3/1/2024	11,146.59	36.47
235	145	MARCELLE CHALOUB	1/1/2012	12/31/2027	765	1,950.75	30.60				RNT	1/1/2025	2,027.25	31.80
											RNT	1/1/2026	2,103.75	33.00
											RNT	1/1/2027	2,180.75	34.21
235	190	ALISO VIEJO COMMUNITY ASSOCI	9/1/2013	8/31/2024	5,725	14,026.25	29.40	1,554.00						
235	200	MNET FINANCIALS, INC	6/1/2016	5/31/2026	3,346	15,142.10	54.31				RNT	6/1/2024	15,599.22	55.94
											RNT	6/1/2025	16,056.34	57.58
235	210	MNET FINANCIALS, INC.	5/1/2021	5/31/2026	2,219									
235	270	WHALLS GROUP, LLC	8/1/2021	11/30/2026	3,245	9,118.45	33.72	301.00			RNT	8/1/2024	9,410.50	34.80
											RNT	8/1/2025	9,670.10	35.76
											RNT	8/1/2026	9,962.15	36.84
235	280	MNET FINANCIALS,INC	1/1/2019	5/31/2026	2,368									
Totals:		Occupied Sqft:	51.46%	9 Units	25,142	61,544.42		2,805.00		0.00				
		Leased/Unoccupied Sqft:		0 Units	0									
		Vacant Sqft:	48.54%	5 Units	23,718									
		Total Sqft:		14 Units	48,860	61,544.42								

Exhibit G – Page 2

Database: RIVERROCKGRP
Bldg Status: Active only

Rent Roll
Argonaut Offices LLC
1/1/2024

Page: 2
Date: 1/16/2024
Time: 12:17 PM

Bldg Id	Suit Id	Occupant Name	Rent Start	Expiration	GLA Sqft	Monthly Base Rent	Annual Rate PSF	Monthly Cost Recovery	Expense Stop	Monthly Other Income	-- Future Rent Increases -- Cat	Date	Monthly Amount	PSF
Total Argonaut Offices LLC:														
		Occupied Sqft:	51.46%	9 Units	25,142	61,544.42		2,805.00		0.00				
		Leased/Unoccupied Sqft:		0 Units	0									
		Vacant Sqft:	48.54%	5 Units	23,718									
		Total Sqft:		14 Units	48,860	61,544.42								
Grand Total:														
		Occupied Sqft:	51.46%	9 Units	25,142	61,544.42		2,805.00		0.00				
		Leased/Unoccupied Sqft:		0 Units	0									
		Vacant Sqft:	48.54%	5 Units	23,718									
		Total Sqft:		14 Units	48,860	61,544.42								

HILLMANN
CONSULTING

ASTM E 1527-21/AAI - USER QUESTIONNAIRE

Instructions: This form should be completed by a representative of the USER of the Phase I ESA report and returned to Hillmann via email or in-person. **The report USER is the entity on whose behalf the assessment is being prepared and that will be relying on the report for liability protections.**

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"),188 the USER must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. The user should provide the following information to the environmental professional. Failure to conduct these inquiries could result in a determination that "all appropriate inquiries" is not complete. Please complete the following questionnaire and provide any of the referenced information (if available) to Hillmann.

USER Company Name:	MLC Holdings	**USER Mailing Address:**	5 Peters Canyon Road, Suite 310, Irvine, CA 92606
Respondent Name & Email Address:	Johanna Crooker johanna.crooker@mlcholdings.net	**Date of Completion:**	4/3/24

Property Address:	95 Argonaut, Aliso Viejo, CA 92656	**YES**	**NO**	**DETAIL (optional):**
Search of Land Title Records and AULs: Has the User performed a review of land title records and judicial records for environmental liens and Activity and Use Limitations (AULs) filed or recorded against the property?			X	
If yes to the above question: Did the review identify any environmental liens or Activity and Use Limitations (AUL), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?				
Specialized knowledge or experience of the person seeking to qualify for the LLP: Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?			X	
Relationship of the purchase price to the fair market value of the property if it were not contaminated: Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?		X		

HILLMANN
CONSULTING

Property Address:	95 Argonaut, Aliso Viejo, CA 92656	**YES**	**NO**	**DETAIL (optional):**
Commonly Known or Reasonably Ascertainable Information: Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? **ANSWER BELOW**				
- Do you know the past uses of the property?		X		Office Space
- Do you know of specific chemicals that are present or were once present at the property?			X	
- Do you know of spills or other chemical releases that have taken place at the property?			X	
- Do you know of any environmental cleanups that have taken place at the property?			X	
The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation: Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?			X	
Litigation/Administrative Proceedings/Government Notices As the User of this ESA, do you have knowledge of (1) any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property; (2) any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property; and (3) any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.			X	
User's Reason for performing Phase I ESA:	For due diligence of a future residential development purposes.			

Additional Details, if applicable:

Bldg Id	Suit Id	Occupant Name	Rent Start	Expiration	GLA Sqft	Monthly Base Rent	Annual Rate PSF	Monthly Cost Recovery	Expense Stop	Monthly Other Income	Future Rent Increases Cat	Date	Monthly Amount	PSF
Vacant Suites														
235	100/130	Vacant			3,999									
235	105	Vacant			1,448									
235	160/170	Vacant			4,565									
235	215	Vacant			2,090									
235	260	Vacant			11,616									
Occupied Suites														
235	110	CARMELITAS TEQUILERIA CORP.	7/1/2022	9/30/2025	2,399	6,545.34	32.74	211.00			RNT	7/1/2024	6,741.70	33.72
											RNT	7/1/2025	6,943.95	34.73
235	115	AUSSIE PET MOBILE, INC	5/1/2012	4/30/2024	1,407	3,939.60	33.60	272.00						
235	120	PARAMOUNT BED USA CORPORAT	3/1/2020	2/28/2025	3,668	11,146.59	36.47	650.00						
235	145	MARCELLE CHALOUB	1/1/2012	12/31/2027	765	1,950.75	30.60	7.00			RNT	1/1/2025	2,027.25	31.80
											RNT	1/1/2026	2,103.75	33.00
											RNT	1/1/2027	2,180.75	34.21
235	190	ALISO VIEJO COMMUNITY ASSOCIA	9/1/2013	8/31/2024	5,725	14,026.25	29.40	1,716.00						
235	200	MNET FINANCIALS, INC	6/1/2016	5/31/2026	3,346	15,142.10	54.31	1,361.00			RNT	6/1/2024	15,599.22	55.94
											RNT	6/1/2025	16,056.34	57.58
235	210	MNET FINANCIALS, INC.	5/1/2021	5/31/2026	2,219									
235	270	WHALLS GROUP, LLC	8/1/2021	11/30/2026	3,245	9,118.45	33.72	410.00			RNT	8/1/2024	9,410.50	34.80
											RNT	8/1/2025	9,670.10	35.76
											RNT	8/1/2026	9,962.15	36.84
235	280	MNET FINANCIALS,INC	1/1/2019	5/31/2026	2,368									
Totals:		Occupied Sqft:	51.46%	9 Units	25,142	61,869.08		4,627.00		0.00				
		Leased/Unoccupied Sqft:		0 Units	0									
		Vacant Sqft:	48.54%	5 Units	23,718									
		Total Sqft:		14 Units	48,860	61,869.08								

Bldg Id	Suit Id	Occupant Name	Rent Start	Expiration	GLA Sqft	Monthly Base Rent	Annual Rate PSF	Monthly Cost Recovery	Expense Stop	Monthly Other Income	--- Future Rent Increases --- Cat	Date	Monthly Amount	PSF
Total Argonaut Offices LLC:														
		Occupied Sqft:	51.46%	9 Units	25,142	61,869.08		4,627.00		0.00				
		Leased/Unoccupied Sqft:		0 Units	0									
		Vacant Sqft:	48.54%	5 Units	23,718									
		Total Sqft:		14 Units	48,860	61,869.08								
Grand Total:														
		Occupied Sqft:	51.46%	9 Units	25,142	61,869.08		4,627.00		0.00				
		Leased/Unoccupied Sqft:		0 Units	0									
		Vacant Sqft:	48.54%	5 Units	23,718									
		Total Sqft:		14 Units	48,860	61,869.08								



Summary

Site Area: 2.85 acres

Total Homes: 62
- (12) Plan 2532: 2 Bed, 2.5 Bath, Standard Garage
- (26) Plan 1633: 3-bed, 3 Bath, Tandem Garage
- (24) Plan 1636: 4 Bed, 4 Bath, Standard Garage

Net Density: 21.75 du/ac

	RH High Density Residential	Proposed
Denisty	30 du/ac	21.75 du/ac
Maximum Structure Height	45'	37.5'
Building Site Area Minimum (SF)	5,000 SF	124,146 SF
Building Site Coverage	60%	36%
Minimum Open Space	25% (31,037 SF)	17% (20,945 SF)
Minimum Perimeter Setback	20'	12'
Parking	2 Bed: 1.5 x 12 = 30 spaces 3 Bed: 1.5 x 26 = 39 spaces 4 Bed: 2.5 x 28 = 70 spaces Total: 139	Garage: 2 per unit = 124 Guest= 16 Total= 140

Notes:
1. Assessor's Parcel Numbers: 141-521-48
2. Existing Zoning: Business Park 1
3. Proposed Zoning: Residential High Density
4. Existing General Plan: Business Park
5. Proposed General Plan: High Density Residential
6. Type VB construction with NFPA 13D automatic sprinkler system.
7. 5% Affordable (3 Homes) at Very Low to be provided on site. Parking, open space perimeter, front, back, side, and rear setbacks reduced by the Density Bonus Law.



Dimensioned Site Plan









Conceptual Site Plan

Argonaut

Aliso Viejo, California

March 2024

APPENDIX D

Regulatory Records Documentation

Argonaut - MLC Holdings, Inc.
95 Argonaut
Aliso Viejo, CA 92656

Inquiry Number: 07614512.2r
April 04, 2024

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	240
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-11
Physical Setting Source Map Findings	A-13
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

95 ARGONAUT
ALISO VIEJO, CA 92656

COORDINATES

Latitude (North):	33.5945930 - 33° 35' 40.53''
Longitude (West):	117.7244490 - 117° 43' 28.01''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	432780.4
UTM Y (Meters):	3717248.8
Elevation:	397 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	50006201 SAN JUAN CAPISTRANO, CA
Version Date:	2022

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20200424
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
95 ARGONAUT
ALISO VIEJO, CA 92656

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	CORTE FINA HOMEOWNER	95 ARGONAUT STE 160	EDR Hist Auto		TP
A2	SUN ALLIANCE	95 ARGONAUT	HWTS		TP
B3	INCEPTUS MEDICAL	8 ARGONAUT STE 100	RCRA NonGen / NLR	Higher	242, 0.046, SW
B4	SOFT HEALTH TECHNOLO	8 ARGONAUT STE 170	RCRA NonGen / NLR	Higher	242, 0.046, SW
B5	AMBRY GENETICS CORPO	7 ARGONAUT	RCRA-LQG	Higher	398, 0.075, WSW
B6	AMBRY GENETICS	7 ARGONAUT	CERS TANKS, CERS	Higher	398, 0.075, WSW
B7	AMBRY GENETICS	7 ARGONAUT	CERS HAZ WASTE	Higher	398, 0.075, WSW
C8	AMBRY GENETICS CORP	15 ARGONAUT	RCRA-LQG	Higher	565, 0.107, WSW
D9	INVOY TECHNOLOGIES	72 ARGONAUT	RCRA NonGen / NLR	Higher	566, 0.107, South
C10	HUNTER GRAPHICS INC	21 ARGONAUT	RCRA-SQG, FINDS, ECHO	Higher	600, 0.114, SW
C11	HALO CLINICAL LAB, I	21 ARGONAUT	RCRA NonGen / NLR	Higher	600, 0.114, SW
C12	HALO CLINICAL LAB IN	21 ARGONAUT STE B	RCRA NonGen / NLR	Higher	600, 0.114, SW
C13	MOBILE TECH INC	21 ARGONAUT	EDR Hist Auto	Higher	600, 0.114, SW
E14	BEARING ENGINEERS	27 ARGONAUT	RCRA NonGen / NLR	Higher	653, 0.124, SW
E15	BEARING ENGINEERS IN	27 ARGONAUT	CERS HAZ WASTE, HWTS, HAZNET, CERS	Higher	653, 0.124, SW
D16	KENNEDY PIPELINE CO	61 ARGONAUT	UST FINDER	Higher	688, 0.130, South
D17	KENNEDY PIPELINE CO	61 ARGONAUT	UST, SWEEPS UST	Higher	688, 0.130, South
D18	KENNEDY PIPELINE CO	61 ARGONAUT	CERS HAZ WASTE, CERS TANKS, CA FID UST, CERS	Higher	688, 0.130, South
D19	KENNEDY PIPELINE COM	61 ARGONAUT	RCRA NonGen / NLR	Higher	688, 0.130, South
E20	ALISO VIEJO TOWING	31 ARGONAUT	RCRA NonGen / NLR	Higher	693, 0.131, SSW
E21	ALISO VIEJO TOWING A	31 ARGONAUT	CERS HAZ WASTE, CERS	Higher	693, 0.131, SSW
22	PARA TECH COATING IN	35 ARGONAUT	RCRA-SQG, CERS HAZ WASTE, FINDS, ECHO, HWTS,...	Higher	712, 0.135, SSW
F23	CHEVRON 200913	23022 ALISO CREEK RD	RCRA-LQG, SWEEPS UST, CA FID UST, FINDS, ECHO	Higher	1057, 0.200, WSW
F24	CHEVRON # 0200913	23022 ALISO CREEK RD	UST	Higher	1057, 0.200, WSW
F25	CHEVRON # 0200913	23022 ALISO CREEK RD	UST	Higher	1057, 0.200, WSW
F26	CHEVRON STATION #200	23022 ALISO CREEK RD	UST FINDER	Higher	1057, 0.200, WSW
F27	CHEVRON STATION #200	23022 ALISO CREEK RD	CERS HAZ WASTE, CERS TANKS, CHMIRS, CERS	Higher	1057, 0.200, WSW
F28	CHEVRON STATION #200	23022 ALISO CREEK RD	UST	Higher	1057, 0.200, WSW
29	SUSAN LYSTER	2 RAINWOOD	RCRA NonGen / NLR	Lower	1248, 0.236, SSE
G30	UNITED PARCEL SERVIC	22 BROOKLINE DRIVE	RCRA-LQG, LUST, CERS HAZ WASTE, SWEEPS UST, CERS...	Higher	2224, 0.421, SW
G31	UNITED PARCEL SERVIC	22 BROOKLINE	UST FINDER RELEASE	Higher	2224, 0.421, SW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
CORTE FINA HOMEOWNER 95 ARGONAUT STE 160 ALISO VIEJO, CA 92656	EDR Hist Auto	N/A
SUN ALLIANCE 95 ARGONAUT ALISO VIEJO, CA 92656	HWTS	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-VSQG ---- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---- Land Use Control Information System
US ENG CONTROLS ---- Engineering Controls Sites List
US INST CONTROLS ---- Institutional Controls Sites List

Federal ERNS list

ERNS ---- Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE ---- State Response Sites

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR ---- EnviroStor Database

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF ---- Solid Waste Information System

Lists of state and tribal leaking storage tanks

INDIAN LUST ---- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ---- Statewide SLIC Cases

Lists of state and tribal registered storage tanks

FEMA UST ---- Underground Storage Tank Listing
AST ---- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---- Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing
VCP ---- Voluntary Cleanup Program Properties

Lists of state and tribal brownfield sites

BROWNFIELDS ---- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---- Waste Management Unit Database

SWRCY ---- Recycler Database
HAULERS ---- Registered Waste Tire Haulers Listing
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

HIST UST ---- Hazardous Substance Storage Container Database

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
Orange Co. Industrial Site ---- List of Industrial Site Cleanups
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System

EXECUTIVE SUMMARY

COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
MINES MRDS	Mineral Resources Data System
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
PFAS NPL	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES	Federal Sites PFAS Information
PFAS TSCA	PFAS Manufacture and Imports Information
PFAS TRIS	List of PFAS Added to the TRI
PFAS RCRA MANIFEST	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR	PFAS Contamination Site Location Listing
PFAS WQP	Ambient Environmental Sampling for PFAS
PFAS NPDES	Clean Water Act Discharge Monitoring Information
PFAS ECHO	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING	Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC	Aqueous Foam Related Incidents Listing
BIOSOLIDS	ICIS-NPDES Biosolids Facility Data
PFAS	PFAS Contamination Site Location Listing
AQUEOUS FOAM	Former Fire Training Facility Assessments Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
CHROME PLATING	Chrome Plating Facilities Listing
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	Inspection, Compliance and Enforcement
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
HAZNET	Facility and Manifest Data
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
HAZMAT	Hazardous Material Facilities
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)

WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List
MILITARY PRIV SITES MILITARY PRIV SITES (GEOTRACKER)
PROJECT PROJECT (GEOTRACKER)
WDR Waste Discharge Requirements Listing
CIWQS California Integrated Water Quality System
CERS CERS
NON-CASE INFO NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal RCRA generators

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 12/04/2023 has revealed that there are 3

RCRA-LQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AMBRY GENETICS CORPO EPA ID:: CAR000254599	7 ARGONAUT	WSW 0 - 1/8 (0.075 mi.)	B5	14
AMBRY GENETICS CORP EPA ID:: CAR000222810	15 ARGONAUT	WSW 0 - 1/8 (0.107 mi.)	C8	35
CHEVRON 200913 EPA ID:: CAD983637851	***23022 ALISO CREEK RD***	***WSW 1/8 - 1/4 (0.200 mi.)***	***F23***	***161***

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/04/2023 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HUNTER GRAPHICS INC EPA ID:: CAD982509853	***21 ARGONAUT***	***SW 0 - 1/8 (0.114 mi.)***	***C10***	***43***
PARA TECH COATING IN EPA ID:: CAR000057828	***35 ARGONAUT***	***SSW 1/8 - 1/4 (0.135 mi.)***	***22***	***108***

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNITED PARCEL SERVIC	***22 BROOKLINE DRIVE***	***SW 1/4 - 1/2 (0.421 mi.)***	***G30***	***200***

Database: LUST, Date of Government Version: 12/04/2023
Database: LUST REG 9, Date of Government Version: 03/01/2001
Database: ORANGE CO. LUST, Date of Government Version: 10/10/2023
Status: Completed - Case Closed
Closed Date: 1/4/96
Facility Id: 95UT025
Status: Case Closed
Global Id: T0605902532
Case Number: 9UT3197

Lists of state and tribal registered storage tanks

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 4 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KENNEDY PIPELINE CO	***61 ARGONAUT***	***S 1/8 - 1/4 (0.130 mi.)***	***D17***	***68***
Database: UST, Date of Government Version: 12/04/2023				
Database: ORANGE CO. UST, Date of Government Version: 10/10/2023				
Facility Id: FA25143				
Facility Id: FA0025143				
Facility Id: FA0025143				
CHEVRON # 0200913	23022 ALISO CREEK RD	WSW 1/8 - 1/4 (0.200 mi.)	F24	167
Database: UST, Date of Government Version: 12/04/2023				
Facility Id: 12182				
CHEVRON # 0200913	23022 ALISO CREEK RD	WSW 1/8 - 1/4 (0.200 mi.)	F25	168
Database: ORANGE CO. UST, Date of Government Version: 10/10/2023				
Facility Id: FA24729				
Facility Id: FA0024729				
CHEVRON STATION #200	23022 ALISO CREEK RD	WSW 1/8 - 1/4 (0.200 mi.)	F28	196
Database: UST, Date of Government Version: 12/04/2023				
Facility Id: FA0024729				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 01/16/2024 has revealed that there are 6 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AMBRY GENETICS	7 ARGONAUT	WSW 0 - 1/8 (0.075 mi.)	B7	30
BEARING ENGINEERS IN	***27 ARGONAUT***	***SW 0 - 1/8 (0.124 mi.)***	***E15***	***52***
KENNEDY PIPELINE CO	***61 ARGONAUT***	***S 1/8 - 1/4 (0.130 mi.)***	***D18***	***70***
ALISO VIEJO TOWING A	***31 ARGONAUT***	***SSW 1/8 - 1/4 (0.131 mi.)***	***E21***	***100***
PARA TECH COATING IN	***35 ARGONAUT***	***SSW 1/8 - 1/4 (0.135 mi.)***	***22***	***108***
CHEVRON STATION #200	***23022 ALISO CREEK RD***	***WSW 1/8 - 1/4 (0.200 mi.)***	***F27***	***169***

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KENNEDY PIPELINE CO Status: A Tank Status: A Comp Number: 9851	***61 ARGONAUT***	***S 1/8 - 1/4 (0.130 mi.)***	***D17***	***68***
CHEVRON 200913 Status: A Tank Status: A Comp Number: 12182	***23022 ALISO CREEK RD***	***WSW 1/8 - 1/4 (0.200 mi.)***	***F23***	***161***

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KENNEDY PIPELINE CO Facility Id: 30012495 Status: A	***61 ARGONAUT***	***S 1/8 - 1/4 (0.130 mi.)***	***D18***	***70***
CHEVRON 200913 Facility Id: 30010575 Status: A	***23022 ALISO CREEK RD***	***WSW 1/8 - 1/4 (0.200 mi.)***	***F23***	***161***

CERS TANKS: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

A review of the CERS TANKS list, as provided by EDR, and dated 01/16/2024 has revealed that there are 3 CERS TANKS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AMBRY GENETICS	***7 ARGONAUT***	***WSW 0 - 1/8 (0.075 mi.)***	***B6***	***24***
KENNEDY PIPELINE CO	***61 ARGONAUT***	***S 1/8 - 1/4 (0.130 mi.)***	***D18***	***70***
CHEVRON STATION #200	***23022 ALISO CREEK RD***	***WSW 1/8 - 1/4 (0.200 mi.)***	***F27***	***169***

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/04/2023 has revealed that there are 9 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
INCEPTUS MEDICAL EPA ID:: CAL000472373	8 ARGONAUT STE 100	SW 0 - 1/8 (0.046 mi.)	B3	10
SOFT HEALTH TECHNOLO EPA ID:: CAL000402655	8 ARGONAUT STE 170	SW 0 - 1/8 (0.046 mi.)	B4	12
INVOY TECHNOLOGIES EPA ID:: CAC003059445	72 ARGONAUT	S 0 - 1/8 (0.107 mi.)	D9	40
HALO CLINICAL LAB, I EPA ID:: CAC003215244	21 ARGONAUT	SW 0 - 1/8 (0.114 mi.)	C11	45
HALO CLINICAL LAB IN EPA ID:: CAL000478070	21 ARGONAUT STE B	SW 0 - 1/8 (0.114 mi.)	C12	48
BEARING ENGINEERS EPA ID:: CAL000111876	27 ARGONAUT	SW 0 - 1/8 (0.124 mi.)	E14	50
KENNEDY PIPELINE COM EPA ID:: CAL000037032	61 ARGONAUT	S 1/8 - 1/4 (0.130 mi.)	D19	96
ALISO VIEJO TOWING EPA ID:: CAL000441567	31 ARGONAUT	SSW 1/8 - 1/4 (0.131 mi.)	E20	98

Lower Elevation	Address	Direction / Distance	Map ID	Page
SUSAN LYSTER EPA ID:: CAC003160661	2 RAINWOOD	SSE 1/8 - 1/4 (0.236 mi.)	29	198

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 12/13/2023 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNITED PARCEL SERVIC Cleanup Status: COMPLETED - CASE CLOSED	***22 BROOKLINE DRIVE***	***SW 1/4 - 1/2 (0.421 mi.)***	***G30***	***200***

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNITED PARCEL SERVIC Reg Id: 9UT3197	***22 BROOKLINE DRIVE***	***SW 1/4 - 1/2 (0.421 mi.)***	***G30***	***200***

UST FINDER: EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

A review of the UST FINDER list, as provided by EDR, and dated 06/08/2023 has revealed that there are 2 UST FINDER sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KENNEDY PIPELINE CO	61 ARGONAUT	S 1/8 - 1/4 (0.130 mi.)	D16	67
CHEVRON STATION #200	23022 ALISO CREEK RD	WSW 1/8 - 1/4 (0.200 mi.)	F26	168

UST FINDER RELEASE: US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

A review of the UST FINDER RELEASE list, as provided by EDR, and dated 06/08/2023 has revealed that there is 1 UST FINDER RELEASE site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNITED PARCEL SERVIC	22 BROOKLINE	SW 1/4 - 1/2 (0.421 mi.)	G31	238

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past

sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

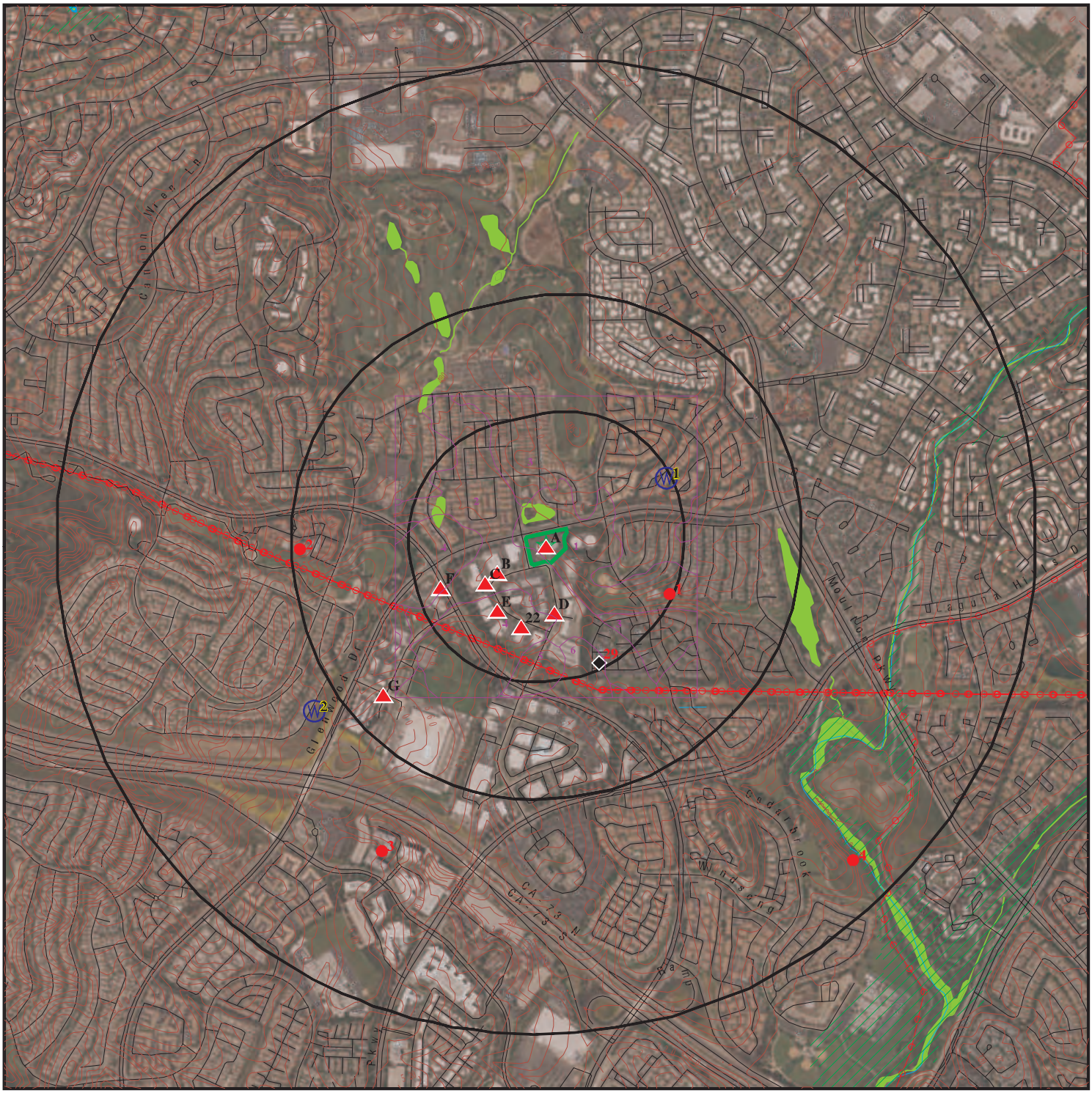
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MOBILE TECH INC	21 ARGONAUT	SW 0 - 1/8 (0.114 mi.)	C13	50

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
GOLDEN RAIN FOUNDATION OF LAG HILL	LUST, EMI
ARTISTIC MAINTENANCE INC	CPS-SLIC

OVERVIEW MAP - 07614512.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Argonaut - MLC Holdings, Inc.	CLIENT:	Hillmann Environmental Co.
ADDRESS:	95 Argonaut Aliso Viejo CA 92656	CONTACT:	Vivianne Bisson
		INQUIRY #:	07614512.2r
LAT/LONG:	33.594593 / 117.724449	DATE:	April 04, 2024 8:17 am

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DETAIL MAP - 07614512.2R



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Argonaut - MLC Holdings, Inc.	CLIENT:	Hillmann Environmental Co.
ADDRESS:	95 Argonaut Aliso Viejo CA 92656	CONTACT:	Vivianne Bisson
		INQUIRY #:	07614512.2r
LAT/LONG:	33.594593 / 117.724449	DATE:	April 04, 2024 8:18 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		2	1	NR	NR	NR	3
RCRA-SQG	0.250		1	1	NR	NR	NR	2
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	0	0	NR	0
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	0	1	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	4	NR	NR	NR	4
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		2	4	NR	NR	NR	6
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	2	NR	NR	NR	2
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	2	NR	NR	NR	2
CERS TANKS	0.250		1	2	NR	NR	NR	3
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
Orange Co. Industrial Site	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		6	3	NR	NR	NR	9
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	0.001		0	NR	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
CHROME PLATING	0.500		0	0	0	NR	NR	0
Cortese	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWTS	0.001	1	0	NR	NR	NR	NR	1
HAZNET	0.001		0	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
HAZMAT	0.250		0	0	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
UST FINDER	0.250		0	2	NR	NR	NR	2

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST FINDER RELEASE	0.500		0	0	1	NR	NR	1
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125	1	1	NR	NR	NR	NR	2
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		2	13	21	4	0	0	40

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **CORTE FINA HOMEOWNERS ASSOC** **EDR Hist Auto** **1021341993**
Target **95 ARGONAUT STE 160** **N/A**
Property **ALISO VIEJO, CA 92656**

Site 1 of 2 in cluster A

Actual: EDR Hist Auto
397 ft.

Year:	Name:	Type:
2007	CORTE FINA HOMEOWNERS ASSOC	Gasoline Service Stations, NEC
2008	CORTE FINA HOMEOWNERS ASSOC	Gasoline Service Stations, NEC

A2 **SUN ALLIANCE** **HWTS** **S124820005**
Target **95 ARGONAUT** **N/A**
Property **ALISO VIEJO, CA 92656**

Site 2 of 2 in cluster A

Actual: HWTS:
397 ft.

Name:	SUN ALLIANCE
Address:	95 ARGONAUT
Address 2:	Not reported
City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAL000188181
Inactive Date:	06/30/2000
Create Date:	02/23/1998
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	95 ARGONAUT
Mailing Address 2:	Not reported
Mailing City,State,Zip:	ALISO VIEJO, CA 926560000
Owner Name:	SUN ALLIANCE
Owner Address:	95 ARGONAUT
Owner Address 2:	Not reported
Owner City,State,Zip:	ALISO VIEJO, CA 926560000
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	RON FOUNTAIN
Contact Address:	INACTIVE PER VQ00 - NJ
Contact Address 2:	Not reported
City,State,Zip:	GARDEN GROVE, CA 928410000
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Inactive
Facility Type:	PERMANENT
Category:	STATE
Latitude:	33.593981
Longitude:	-117.724718

B3 **INCEPTUS MEDICAL** **RCRA NonGen / NLR** **1027468027**
SW **8 ARGONAUT STE 100** **CAL000472373**
< 1/8 **ALISO VIEJO, CA 92656**
0.046 mi.
242 ft. **Site 1 of 5 in cluster B**

Relative:
Higher

Actual:
431 ft.

RCRA Listings:

Date Form Received by Agency:	20220805
Handler Name:	Inceptus Medical
Handler Address:	8 ARGONAUT STE 100
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAL000472373
Contact Name:	MICHAEL JACKSON
Contact Address:	8 ARGONAUT STE 100
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	949-636-1575
Contact Fax:	Not reported
Contact Email:	MICHAEL.JACKSON@INCEPTUSMEDICAL.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	8 ARGONAUT STE 100
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Inceptus Medical Llc
Owner Type:	Other
Operator Name:	Michael Jackson
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

INCEPTUS MEDICAL (Continued) **1027468027**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20220816
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: MICHAEL JACKSON	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8 ARGONAUT STE 100
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	949-636-1575
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: INCEPTUS MEDICAL LLC	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8 ARGONAUT STE 100
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	949-598-0300
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20220805
Handler Name: INCEPTUS MEDICAL	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

INCEPTUS MEDICAL (Continued) **1027468027**

List of NAICS Codes and Descriptions:
NAICS Code: 339999
NAICS Description: ALL OTHER MISCELLANEOUS MANUFACTURING

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B4 **SOFT HEALTH TECHNOLOGIES LLC** **RCRA NonGen / NLR** **1024847614**
SW **8 ARGONAUT STE 170** **CAL000402655**
< 1/8 **ALISO VIEJO, CA 92656**
0.046 mi.
242 ft. **Site 2 of 5 in cluster B**

Relative: Higher
Actual: 431 ft.

RCRA Listings:

Date Form Received by Agency:	20141202
Handler Name:	Soft Health Technologies Llc
Handler Address:	8 ARGONAUT STE 170
Handler City,State,Zip:	ALISO VIEJO, CA 92656-4215
EPA ID:	CAL000402655
Contact Name:	JOHN TAYLOR
Contact Address:	8 ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	949-697-3386
Contact Fax:	Not reported
Contact Email:	ADMIN@SOFTHEALTHTECH.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	8 ARGONAUT STE 170
Mailing City,State,Zip:	ALISO VIEJO, CA 92656-4215
Owner Name:	Soft Health Technologies Llc
Owner Type:	Other
Operator Name:	John Taylor
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes

SOFT HEALTH TECHNOLOGIES LLC (Continued) **1024847614**

Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20180906
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: JOHN TAYLOR	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8 ARGONAUT
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	949-697-3386
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: SOFT HEALTH TECHNOLOGIES LLC	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8 ARGONAUT STE 170
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656-4215
Owner/Operator Telephone:	949-716-6770
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

SOFT HEALTH TECHNOLOGIES LLC (Continued) **1024847614**

Historic Generators:
- Receive Date: 20141202
- Handler Name: SOFT HEALTH TECHNOLOGIES LLC
- Federal Waste Generator Description: Not a generator, verified
- State District Owner: Not reported
- Large Quantity Handler of Universal Waste: No
- Recognized Trader Importer: No
- Recognized Trader Exporter: No
- Spent Lead Acid Battery Importer: No
- Spent Lead Acid Battery Exporter: No
- Current Record: Yes
- Non Storage Recycler Activity: Not reported
- Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
- NAICS Code: 339932
- NAICS Description: GAME, TOY, AND CHILDREN'S VEHICLE MANUFACTURING

Facility Has Received Notices of Violations:
- Violations: No Violations Found

Evaluation Action Summary:
- Evaluations: No Evaluations Found

B5 **AMBRY GENETICS CORPORATION** **RCRA-LQG** **1018155097**
WSW **7 ARGONAUT** **CAR000254599**
< 1/8 **ALISO VIEJO, CA 92656**
0.075 mi.
398 ft. **Site 3 of 5 in cluster B**

Relative: Higher

Actual: 435 ft.

RCRA Listings:
- Date Form Received by Agency: 20220211
- Handler Name: Ambry Genetics Corporation
- Handler Address: ARGONAUT
- Handler City,State,Zip: ALISO VIEJO, CA 92656
- EPA ID: CAR000254599
- Contact Name: OMAR JOEL AZPURU
- Contact Address: ARGONAUT
- Contact City,State,Zip: ALISO VIEJO, CA 92054
- Contact Telephone: 949-539-5466
- Contact Fax: Not reported
- Contact Email: JAZPURU@AMBRYGEN.COM
- Contact Title: SR. EH&S MANAGER
- EPA Region: 09
- Land Type: Private
- Federal Waste Generator Description: Large Quantity Generator
- Non-Notifier: Not reported
- Biennial Report Cycle: 2021
- Accessibility: Not reported
- Active Site Indicator: Handler Activities
- State District Owner: Not reported
- State District: Not reported
- Mailing Address: ENTERPRISE
- Mailing City,State,Zip: ALISO VIEJO, CA 92656
- Owner Name: Konica Minolta Pm Inc

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Owner Type:	Private
Operator Name:	Ambry Genetics Corporation
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20220705
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2021

Click Here for Biennial Reporting System Data:
Year: 2019

Click Here for Biennial Reporting System Data:
Year: 2017

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Waste Code: D001
Waste Description: Ignitable Waste

Waste Code: D002
Waste Description: Corrosive Waste

Waste Code: F002
Waste Description: The Following Spent Halogenated Solvents: Tetrachloroethylene, Methylene Chloride, Trichloroethylene, 1,1,1-Trichloroethane, Chlorobenzene, 1,1,2-Trichloro-1,2,2-Trifluoroethane, Ortho-Dichlorobenzene, Trichlorofluoromethane, And 1,1,2, Trichloroethane; All Spent Solvent Mixtures/Blends Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Halogenated Solvents Or Those Solvents Listed In F001, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: F003
Waste Description: The Following Spent Nonhalogenated Solvents: Xylene, Acetone, Ethyl Acetate, Ethyl Benzene, Ethyl Ether, Methyl Isobutyl Ketone, N-Butyl Alcohol, Cyclohexanone, And Methanol; All Spent Solvent Mixtures/Blends Containing, Before Use, Only The Above Spent Nonhalogenated Solvents; And All Spent Solvent Mixtures/Blends Containing, Before Use, One Or More Of The Above Nonhalogenated Solvents, And A Total Of Ten Percent Or More (By Volume) Of One Or More Of Those Solvents Listed In F001, F002, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: U010
Waste Description: Azirino [2',3':3,4]Pyrrolo[1,2-A]Indole-4,7-Dione, 6-Amino-8-[[(Aminocarbonyl)Oxy]Methyl]-1,1a,2,8,8a,8b-Hexahydro-8a-Methoxy-5-Methyl-, [1as-(1aalpha, 8beta, 8aalpha, 8balpha)]- (Or) Mitomycin C

Waste Code: U150
Waste Description: L-Phenylalanine, 4-[Bis(2-Chloroethyl)Amino]- (Or) Melphalan

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20141106
Date Ended Current: Not reported
Owner/Operator Address: 15 ARGONAUT
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-900-5500
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: KONICA MINOLTA PM INC
Legal Status: Private
Date Became Current: 20171025
Date Ended Current: Not reported
Owner/Operator Address: 411 NEWARK POMPTON TURNPIKE

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Owner/Operator City,State,Zip: WAYNE, NJ 07470
Owner/Operator Telephone: 973-633-1500
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: KM.MARKETING@KONICAMINOLTA.COM

Owner/Operator Indicator: Owner
Owner/Operator Name: KONICA MINOLTA PM INC
Legal Status: Private
Date Became Current: 20171025
Date Ended Current: Not reported
Owner/Operator Address: 411 NEWARK POMPTON TURNPIKE
Owner/Operator City,State,Zip: WAYNE, NJ 07470
Owner/Operator Telephone: 973-633-1500
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: KM.MARKETING@KONICAMINOLTA.COM

Owner/Operator Indicator: Owner
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20141106
Date Ended Current: Not reported
Owner/Operator Address: 15 ARGONAUT
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-900-5500
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20160122
Date Ended Current: Not reported
Owner/Operator Address: 1 ENTERPRISE
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-536-5466
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: JAZPURU@AMBRYGEN.COM

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20160122
Date Ended Current: Not reported
Owner/Operator Address: 15 ARGONAUT
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-900-5540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: SDAWSON@AMBRYGEN.COM

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Date Became Current: 20160122
Date Ended Current: Not reported
Owner/Operator Address: 1 ENTERPRISE
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-536-5466
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: JAZPURU@AMBRYGEN.COM

Owner/Operator Indicator: Owner
Owner/Operator Name: KONICA MINOLTA PM INC
Legal Status: Private
Date Became Current: 20171025
Date Ended Current: Not reported
Owner/Operator Address: 411 NEWARK POMPTON TURNPIKE
Owner/Operator City,State,Zip: WAYNE, NJ 07470
Owner/Operator Telephone: 949-900-5540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: SDAWSON@AMBRYGEN.COM

Owner/Operator Indicator: Owner
Owner/Operator Name: KONICA MINOLTA PM INC
Legal Status: Private
Date Became Current: 20171025
Date Ended Current: Not reported
Owner/Operator Address: 411 NEWARK POMPTON TURNPIKE
Owner/Operator City,State,Zip: WAYNE, NJ 07470
Owner/Operator Telephone: 949-900-5540
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: SDAWSON@AMBRYGEN.COM

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20160122
Date Ended Current: Not reported
Owner/Operator Address: 1 ENTERPRISE
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-536-5466
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: JAZPURU@AMBRYGEN.COM

Historic Generators:
Receive Date: 20181030
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Electronic Manifest Broker: No

Receive Date: 20210520
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20220211
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20150630
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20210514
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 541711
NAICS Description: RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY

AMBRY GENETICS CORPORATION (Continued) **1018155097**

NAICS Code: 541714
NAICS Description: RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY (EXCEPT NANOBIOTECHNOLOGY

NAICS Code: 621511
NAICS Description: MEDICAL LABORATORIES

Has the Facility Received Notices of Violations:

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported

AMBRY GENETICS CORPORATION (Continued) **1018155097**

SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Records/Reporting
Date Violation was Determined: 20200610
Actual Return to Compliance Date: 20200810
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Evaluation Action Summary:
Evaluation Date: 20201020
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier: CUPA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 20210303
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier: CUPA
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

Evaluation Date: 20211201
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION

AMBRY GENETICS CORPORATION (Continued) **1018155097**

Evaluation Responsible Person Identifier:	CUPA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20200811
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20200610
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	CUPA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20200810
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

B6 **AMBRY GENETICS** **CERS TANKS** **S123513709**
WSW **7 ARGONAUT** **CERS** **N/A**
< 1/8 **ALISO VIEJO, CA 92656**
0.075 mi.
398 ft. **Site 4 of 5 in cluster B**

Relative:
Higher

Actual:
435 ft.

CERS TANKS:

Name:	AMBRY GENETICS
Address:	7 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	368624
CERS ID:	10668994
CERS Description:	Aboveground Petroleum Storage

CERS:

Name:	AMBRY GENETICS
Address:	7 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	368624
CERS ID:	10668994
CERS Description:	Chemical Storage Facilities

AMBRY GENETICS (Continued) **S123513709**

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-14-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Ambry Genetics, 7 Argonaut, Aliso Viejo On site to conduct aboveground petroleum storage tank (APST) inspection, consent to enter, inspect and take photographs was given by - Marissa Tracy, EH&S Coordinator Facility is regulated under the Aboveground Storage Tank Act (APSA). Facility has between 1,320 and 9,999 gallons of regulated petroleum products . Facility has the Following: 1) On site SPCC Prepared and implemented and dated 2/24/2017 a. The federal template for Tier I facilities under 10,000 gallons was used b. Plan is required to be reviewed every 5 years. 2) Periodic checklist of inspection activities is available for tank. 3) Appropriate secondary containment or diversionary structures are available, the tank is double walled and it is also diked. 4) Training on SPCC plan for appropriate staff. Orange County Environmental Health has created a website that contains information regarding the APST program and its requirements. The APST website is [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: APSA
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-08-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a Medical Waste Large Quantity Generator inspection. Met this date with Douglas Echeverria, Sr. Environmental Health and Safety Manager who granted consent to enter and conduct the inspection A walk through of the facility was conducted. The final storage area is locked. Observed red bags that were zip-tied. Wastes generated at this facility include biohazardous, sharps, pathology, and trace chemotherapy waste. Waste containers are closed and labeled. Waste is hauled by ACT once a week. Tracking documents were available and reviewed. Brian with ACT is at this facility and responsible for the transferring, labeling, daily empty for the facility. The Emergency Action Plan was available for review. Inspection report emailed to Douglas Echeverria decheverria@ambrygen.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-14-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Ambry Genetics, 7 Argonaut, Aliso Viejo On site to conduct hazardous materials chemical inventory and business emergency plan inspection this date, consent to enter, inspect and take photographs was given by - Marissa Tracy, EH&S Coordinator. The HMBEP has been submitted through CERS 10668994. Changes to the BEP to add the OC CUPA phone number to the plan so that if there is a spill we can be notified easily 714-433-6000 Employee Business Emergency Plan Training was reviewed this date. Safety/cleanup equipment is available. Hazardous materials storage area were reviewed at this time. The facility has

AMBRY GENETICS (Continued) **S123513709**

the following hazardous materials that exceed the required disclosure quantities: diesel 4820 gallons, air 1550 cubic feet. **Please note, you are required to review the submittal yearly and resubmit prior to March 1st each year. You will get communication (probably email) indicating you should go in and review and resubmit around January of each year as a [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine Hazardous Materials Business Plan (HMBP) inspection. Met this date with Joel Azpuru Sr. Environmental Health and Safety Manager who granted consent to enter and conduct the inspection. Hazardous Materials disclosed in CERS match what is reported on site. The following were available for review this date: - Emergency Contingency Plan - Employee Training Records Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revised documents (electronically though CERS) within 30 days of change. The HMBP must be submitted online [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-10-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for an aboveground petroleum storage tank (APST) inspection. Access to this facility was provided by Ryan Castillo, EHS Supervisor. Facility contains: - 1 Diesel APST (4820 gallons) Facility is regulated under the Aboveground Storage Tank Act (APSA). This facility has between 1,320 and 9,999 gallons of regulated petroleum products (Tier 1 facility). Facility has the following: - On-site Tier 1 Spill Prevention Controls and Countermeasures (SPCC) plan prepared and implemented. SPCC must be evaluated every 5 years) - Training - Periodic checklist is available for tanks (per SPCC inspections are conducted weekly) - Appropriate secondary containment or diversionary structures

Eval Division: Orange County Environmental Health
Eval Program: APSA
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-06-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine Hazardous Materials Business Plan (HMBP)

AMBRY GENETICS (Continued) **S123513709**

inspection. Met this date with Douglas Echeverria, Sr. Environmental Health and Safety Manager who granted consent to enter and conduct the inspection. Observed the following materials on site at reportable quantities: diesel fuel, R-404A, Liquid Nitrogen. Hazardous Materials disclosed in CERS (10668994) match what is reported on site. The following were available for review this date: - Emergency Contingency Plan - Employee Training Records Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revise

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-10-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous materials inspection. Also present was Dean Freed of OCHCA. Access to the facility, and permission to inspect and take photographs (if needed) was provided by Ryan Castillo, EHS Supervisor, and included the areas noted below. Businesses who handle or store hazardous materials in quantities equal to or exceeding 55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of a gas are required to develop the following items and submit them electronically into the state's portal CERS website (http://cers.calepa.ca.gov). Currently the battery array in the Data Center is not listed as part of your hazardous materials inventory. Determine if the amount of hazardous materials for the battery array exceeds the threshold above and disclose the batteries as part of your inventory, if necessary. 7 Argonaut - North Side of bldg: Nitrogen/Air aboveground tank - Data Center: USB (battery array) - Backup generator: Diesel aboveground tank

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for an Aboveground Petroleum Storage tank (APST) inspection. Joel Azpru, Sr. Environmental Health and Safety Manager, provided consent to inspect. This facility is a Tier I Facility (equal to or greater than 1,320 gallons but less than 9,999 gallons of regulated petroleum products) - 1 diesel emergency generator (4,820 gallons) The SPCC Plan was on site for review and was dated March 22, 2021. SPCC plan must be reviewed and updated every five (5) years. Periodic inspections per SPCC are being conducted. Tank inspection logs were available and reviewed. No spill have occurred or been reported. Appropriate secondary containment are in place. Annual SPCC training records for oil handling personnel are reported to be given and training records were available for review (maintained online)

AMBRY GENETICS (Continued) **S123513709**

Inspection report emailed to jazpuru@ambrygen.com

Eval Division:	Orange County Environmental Health
Eval Program:	APSA
Eval Source:	CERS,

Coordinates:

Site ID:	368624
Facility Name:	Ambry Genetics
Env Int Type Code:	HMBP
Program ID:	10668994
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.,
Latitude:	33.594140
Longitude:	-117.726430

Affiliation:

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

Affiliation Type Desc:	Parent Corporation
Entity Name:	Ambry Genetics Corporation
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	CUPA District
Entity Name:	Orange County Env Health
Entity Title:	Not reported
Affiliation Address:	1241 East Dyer RoadSuite 120
Affiliation City:	Santa Ana
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92705-5611
Affiliation Phone:	(714) 433-6406,

Affiliation Type Desc:	Identification Signer
Entity Name:	Douglas Echeverria
Entity Title:	Sr. EH&S Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

AMBRY GENETICS (Continued) **S123513709**

Affiliation Type Desc:	Legal Owner
Entity Name:	REALM IDx
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92656
Affiliation Phone:	(949) 900-5500,

Affiliation Type Desc:	Operator
Entity Name:	Ambry Genetics Corporation
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(949) 900-5500,

Affiliation Type Desc:	Environmental Contact
Entity Name:	Douglas Echeverria
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

Affiliation Type Desc:	Document Preparer
Entity Name:	Douglas Echeverria
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Property Owner
Entity Name:	REALM IDx
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Alsio Viejo
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92656
Affiliation Phone:	(949) 900-5500,

B7 **AMBRY GENETICS** **CERS HAZ WASTE** **S129010514**
WSW **7 ARGONAUT** **N/A**
< 1/8 **ALISO VIEJO, CA 92656**
0.075 mi.
398 ft. **Site 5 of 5 in cluster B**

Relative:
Higher

Actual:
435 ft.

CERS HAZ WASTE:
Name: AMBRY GENETICS
Address: 7 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 368624
CERS ID: 10668994
CERS Description: Hazardous Waste Generator

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-14-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Ambry Genetics, 7 Argonaut, Aliso Viejo On site to conduct aboveground petroleum storage tank (APST) inspection, consent to enter, inspect and take photographs was given by - Marissa Tracy, EH&S Coordinator Facility is regulated under the Aboveground Storage Tank Act (APSA). Facility has between 1,320 and 9,999 gallons of regulated petroleum products . Facility has the Following: 1) On site SPCC Prepared and implemented and dated 2/24/2017 a. The federal template for Tier I facilities under 10,000 gallons was used b. Plan is required to be reviewed every 5 years. 2) Periodic checklist of inspection activities is available for tank. 3) Appropriate secondary containment or diversionary structures are available, the tank is double walled and it is also diked. 4) Training on SPCC plan for appropriate staff. Orange County Environmental Health has created a website that contains information regarding the APST program and its requirements. The APST website is [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: APSA
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-08-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a Medical Waste Large Quantity Generator inspection. Met this date with Douglas Echeverria, Sr. Environmental Health and Safety Manager who granted consent to enter and conduct the inspection A walk through of the facility was conducted. The final storage area is locked. Observed red bags that were zip-tied. Wastes generated at this facility include biohazardous, sharps, pathology, and trace chemotherapy waste. Waste containers are closed and labeled. Waste is hauled by ACT once a week. Tracking documents were available and reviewed. Brian with ACT is at this facility and responsible for the transferring, labeling, daily empty for the facility. The Emergency Action Plan was available for review. Inspection report emailed to Douglas Echeverria decheverria@ambrygen.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-14-2017

AMBRY GENETICS (Continued) **S129010514**

Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Ambry Genetics, 7 Argonaut, Aliso Viejo On site to conduct hazardous materials chemical inventory and business emergency plan inspection this date, consent to enter, inspect and take photographs was given by - Marissa Tracy, EH&S Coordinator. The HMBEP has been submitted through CERS 10668994. Changes to the BEP to add the OC CUPA phone number to the plan so that if there is a spill we can be notified easily 714-433-6000 Employee Business Emergency Plan Training was reviewed this date. Safety/cleanup equipment is available. Hazardous materials storage area were reviewed at this time. The facility has the following hazardous materials that exceed the required disclosure quantities: diesel 4820 gallons, air 1550 cubic feet. **Please note, you are required to review the submittal yearly and resubmit prior to March 1st each year. You will get communication (probably email) indicating you should go in and review and resubmit around January of each year as a [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine Hazardous Materials Business Plan (HMBP) inspection. Met this date with Joel Azpuru Sr. Environmental Health and Safety Manager who granted consent to enter and conduct the inspection. Hazardous Materials disclosed in CERS match what is reported on site. The following were available for review this date: - Emergency Contingency Plan - Employee Training Records Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revised documents (electronically though CERS) within 30 days of change. The HMBP must be submitted online [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-10-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for an aboveground petroleum storage tank (APST) inspection. Access to this facility was provided by Ryan Castillo, EHS Supervisor. Facility contains: - 1 Diesel APST (4820 gallons) Facility is regulated under the Aboveground Storage Tank Act (APSA). This facility has between 1,320 and 9,999 gallons of regulated petroleum products (Tier 1 facility). Facility has the following: - On-site Tier 1 Spill Prevention Controls and Countermeasures (SPCC) plan prepared and implemented. SPCC must be evaluated every 5 years) - Training - Periodic checklist is available for tanks (per SPCC

AMBRY GENETICS (Continued) **S129010514**

inspections are conducted weekly) - Appropriate secondary containment or diversionary structures

Eval Division: Orange County Environmental Health
Eval Program: APSA
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-06-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine Hazardous Materials Business Plan (HMBP) inspection. Met this date with Douglas Echeverria, Sr. Environmental Health and Safety Manager who granted consent to enter and conduct the inspection. Observed the following materials on site at reportable quantities: diesel fuel, R-404A, Liquid Nitrogen. Hazardous Materials disclosed in CERS (10668994) match what is reported on site. The following were available for review this date: - Emergency Contingency Plan - Employee Training Records Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revise

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-10-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous materials inspection. Also present was Dean Freed of OCHCA. Access to the facility, and permission to inspect and take photographs (if needed) was provided by Ryan Castillo, EHS Supervisor, and included the areas noted below. Businesses who handle or store hazardous materials in quantities equal to or exceeding 55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of a gas are required to develop the following items and submit them electronically into the state's portal CERS website (http://cers.calepa.ca.gov). Currently the battery array in the Data Center is not listed as part of your hazardous materials inventory. Determine if the amount of hazardous materials for the battery array exceeds the threshold above and disclose the batteries as part of your inventory, if necessary. 7 Argonaut - North Side of bldg: Nitrogen/Air aboveground tank - Data Center: USB (battery array) - Backup generator: Diesel aboveground tank

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for an Aboveground Petroleum Storage tank (APST) inspection.

AMBRY GENETICS (Continued) **S129010514**

Joel Azpru, Sr. Environmental Health and Safety Manager, provided consent to inspect. This facility is a Tier I Facility (equal to or greater than 1,320 gallons but less than 9,999 gallons of regulated petroleum products) - 1 diesel emergency generator (4,820 gallons) The SPCC Plan was on site for review and was dated March 22, 2021. SPCC plan must be reviewed and updated every five (5) years. Periodic inspections per SPCC are being conducted. Tank inspection logs were available and reviewed. No spill have occurred or been reported. Appropriate secondary containment are in place. Annual SPCC training records for oil handling personnel are reported to be given and training records were available for review (maintained online) Inspection report emailed to jazpuru@ambrygen.com

Eval Division: Orange County Environmental Health
Eval Program: APSA
Eval Source: CERS,

Coordinates:
Site ID: 368624
Facility Name: Ambry Genetics
Env Int Type Code: HMBP
Program ID: 10668994
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.594140
Longitude: -117.726430

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 1 Enterprise
Affiliation City: Aliso Viejo
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92656
Affiliation Phone: ,

Affiliation Type Desc: Parent Corporation
Entity Name: Ambry Genetics Corporation
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: CUPA District
Entity Name: Orange County Env Health
Entity Title: Not reported
Affiliation Address: 1241 East Dyer RoadSuite 120
Affiliation City: Santa Ana
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92705-5611
Affiliation Phone: (714) 433-6406,

AMBRY GENETICS (Continued) **S129010514**

Affiliation Type Desc:	Identification Signer
Entity Name:	Douglas Echeverria
Entity Title:	Sr. EH&S Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Legal Owner
Entity Name:	REALM IDx
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92656
Affiliation Phone:	(949) 900-5500,

Affiliation Type Desc:	Operator
Entity Name:	Ambry Genetics Corporation
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(949) 900-5500,

Affiliation Type Desc:	Environmental Contact
Entity Name:	Douglas Echeverria
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

Affiliation Type Desc:	Document Preparer
Entity Name:	Douglas Echeverria
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Property Owner
Entity Name:	REALM IDx
Entity Title:	Not reported
Affiliation Address:	1 Enterprise
Affiliation City:	Alsio Viejo
Affiliation State:	CA
Affiliation Country:	United States

AMBRY GENETICS (Continued) **S129010514**

Affiliation Zip: 92656
Affiliation Phone: (949) 900-5500,

C8 **AMBRY GENETICS CORP** **RCRA-LQG** **1014922508**
WSW **15 ARGONAUT** **CAR000222810**
< 1/8 **ALISO VIEJO, CA 92656**
0.107 mi.
565 ft. **Site 1 of 5 in cluster C**

Relative: **Higher**

Actual: **442 ft.**

RCRA Listings:

Date Form Received by Agency:	20181030
Handler Name:	Ambry Genetics Corp
Handler Address:	ARGONAUT
Handler City,State,Zip:	ALISO VIEJO, CA 92656-0000
EPA ID:	CAR000222810
Contact Name:	SCOTT C DAWSON
Contact Address:	ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656-0000
Contact Telephone:	949-900-5540
Contact Fax:	949-900-5501
Contact Email:	SDAWSON@AMBRYGEN.COM
Contact Title:	ENVIRONMENTAL HEALTH AND SAFETY MANAGER
EPA Region:	09
Land Type:	Private
Federal Waste Generator Description:	Large Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	2017
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656-0000
Owner Name:	Sherry Family Partnership
Owner Type:	Private
Operator Name:	Ambry Genetic Corporation
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No

AMBRY GENETICS CORP (Continued) **1014922508**

Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20181126
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2017

Click Here for Biennial Reporting System Data:
Year: 2015

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste
Waste Code:	D002
Waste Description:	Corrosive Waste
Waste Code:	D022
Waste Description:	Chloroform
Waste Code:	F003
Waste Description:	The Following Spent Nonhalogenated Solvents: Xylene, Acetone, Ethyl Acetate, Ethyl Benzene, Ethyl Ether, Methyl Isobutyl Ketone, N-Butyl Alcohol, Cyclohexanone, And Methanol; All Spent Solvent Mixtures/Blends Containing, Before Use, Only The Above Spent Nonhalogenated Solvents; And All Spent Solvent Mixtures/Blends Containing, Before Use, One Or More Of The Above Nonhalogenated Solvents, And A Total Of Ten Percent Or More (By Volume) Of One Or More Of Those Solvents Listed In F001, F002, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.
Waste Code:	U002
Waste Description:	2-Propanone (I) (Or) Acetone (I)
Waste Code:	U007
Waste Description:	2-Propenamide (Or) Acrylamide

AMBRY GENETICS CORP (Continued) **1014922508**

Waste Code: U031
Waste Description: 1-Butanol (I) (Or) N-Butyl Alcohol (I)

Waste Code: U044
Waste Description: Chloroform (Or) Methane, Trichloro-

Waste Code: U188
Waste Description: Phenol

Waste Code: U239
Waste Description: Benzene, Dimethyl- (I,T) (Or) Xylene (I)

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETIC CORPORATION
Legal Status: Private
Date Became Current: 20120101
Date Ended Current: Not reported
Owner/Operator Address: 15 ARGONAUT
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656-0000
Owner/Operator Telephone: 949-900-5500
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: SDAWSON@AMBRYGEN.COM

Owner/Operator Indicator: Owner
Owner/Operator Name: AICI, LLC
Legal Status: Private
Date Became Current: 19891001
Date Ended Current: Not reported
Owner/Operator Address: 2101 ROSECRANS AVENUE
Owner/Operator City,State,Zip: EL SEGUNDO, CA 90245
Owner/Operator Telephone: 310-725-0006
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: AICI LLC
Legal Status: Private
Date Became Current: 19891001
Date Ended Current: Not reported
Owner/Operator Address: 2101 ROSENCRANS AVE
Owner/Operator City,State,Zip: EL SEGUNDO, CA 92656
Owner/Operator Telephone: 310-725-0006
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORP
Legal Status: Private
Date Became Current: 20120102
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported

AMBRY GENETICS CORP (Continued) **1014922508**

Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: SHERRY FAMILY PARTNERSHIP
Legal Status: Private
Date Became Current: 20180117
Date Ended Current: Not reported
Owner/Operator Address: 1040 SOUTH ROBERTSON BLVD
Owner/Operator City,State,Zip: LOS ANGELES, CA 90035
Owner/Operator Telephone: 323-839-5511
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: DEAN@DUKEPM.COM

Owner/Operator Indicator: Owner
Owner/Operator Name: AICI, LLC
Legal Status: Private
Date Became Current: 19891001
Date Ended Current: Not reported
Owner/Operator Address: 2101 ROSECRANS AVENUE
Owner/Operator City,State,Zip: EL SEGUNDO, CA 90245
Owner/Operator Telephone: 310-725-0006
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORP
Legal Status: Private
Date Became Current: 20120102
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20120101
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: ALCL INC
Legal Status: Private
Date Became Current: 19940629
Date Ended Current: Not reported

AMBRY GENETICS CORP (Continued) **1014922508**

Owner/Operator Address: 2321 ROSECRANS AVE
Owner/Operator City,State,Zip: EL SEGUNDO, CA 90245
Owner/Operator Telephone: 310-725-0006
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: AMBRY GENETICS CORPORATION
Legal Status: Private
Date Became Current: 20120101
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20160229
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20181030
Handler Name: AMBRY GENETICS CORP
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20171113
Handler Name: AMBRY GENETICS CORPORATION
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No

AMBRY GENETICS CORP (Continued) **1014922508**

Electronic Manifest Broker: No

Receive Date: 20111116
Handler Name: AMBRY GENETICS CORP
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20150323
Handler Name: AMBRY GENETICS CORP
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 541711
NAICS Description: RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY

NAICS Code: 541714
NAICS Description: RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY (EXCEPT NANOBIOTECHNOLOGY

NAICS Code: 62151
NAICS Description: MEDICAL AND DIAGNOSTIC LABORATORIES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

D9 **INVOY TECHNOLOGIES** **RCRA NonGen / NLR** **1026052549**
South **72 ARGONAUT** **CAC003059445**
< 1/8 **ALISO VIEJO, CA 92656**
0.107 mi.
566 ft. **Site 1 of 5 in cluster D**

Relative:
Higher

Actual:
430 ft.

RCRA Listings:
Date Form Received by Agency: 20200310
Handler Name: Invoy Technologies
Handler Address: 72 ARGONAUT
Handler City,State,Zip: ALISO VIEJO, CA 92656

INVOY TECHNOLOGIES (Continued) **1026052549**

EPA ID:	CAC003059445
Contact Name:	RACHEL PARHAM
Contact Address:	530 TECHNOLOGY DR
Contact City,State,Zip:	IRVINE, CA 92618
Contact Telephone:	323-835-4943
Contact Fax:	Not reported
Contact Email:	RPARHAM@INVOY.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	530 TECHNOLOGY DR
Mailing City,State,Zip:	IRVINE, CA 92618
Owner Name:	Rachel Parham
Owner Type:	Other
Operator Name:	Rachel Parham
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20200313
Recognized Trader-Importer:	No

INVOY TECHNOLOGIES (Continued) **1026052549**

Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: RACHEL PARHAM	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	530 TECHNOLOGY DR
Owner/Operator City,State,Zip:	IRVINE, CA 92618
Owner/Operator Telephone:	323-835-4943
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: RACHEL PARHAM	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	530 TECHNOLOGY DR
Owner/Operator City,State,Zip:	IRVINE, CA 92618
Owner/Operator Telephone:	323-835-4943
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20200310
Handler Name: INVOY TECHNOLOGIES	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	339999
NAICS Description:	ALL OTHER MISCELLANEOUS MANUFACTURING

Facility Has Received Notices of Violations:

Violations:	No Violations Found

INVOY TECHNOLOGIES (Continued) **1026052549**

Evaluation Action Summary:
Evaluations: No Evaluations Found

C10 **HUNTER GRAPHICS INC** **RCRA-SQG** **1000401505**
SW **21 ARGONAUT** **FINDS** **CAD982509853**
< 1/8 **ALISO VIEJO, CA 92656** **ECHO**
0.114 mi.
600 ft. **Site 2 of 5 in cluster C**

Relative:
Higher

Actual:
459 ft.

RCRA Listings:

Date Form Received by Agency:	19891114
Handler Name:	Hunter Graphics Inc
Handler Address:	ARGONAUT
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAD982509853
Contact Name:	ENVIRONMENTAL MANAGER
Contact Address:	21 ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	714-768-1899
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	09
Land Type:	Federal
Federal Waste Generator Description:	Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Ca
State District:	4
Mailing Address:	ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Alex Hunter
Owner Type:	Private
Operator Name:	Not Required
Operator Type:	Federal
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	The land is federally-owned, The site is federally-operated
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline

HUNTER GRAPHICS INC (Continued) **1000401505**

202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20000915
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: NOT REQUIRED	
Legal Status:	Federal
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: ALEX HUNTER	
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	19891114
Handler Name: HUNTER GRAPHICS INC	
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Ca
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No

HUNTER GRAPHICS INC (Continued) **1000401505**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

FINDS:
Registry ID: 110002837306

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000401505
Registry ID: 110002837306
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002837306
Name: HUNTER GRAPHICS INC
Address: 21 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656

C11 **HALO CLINICAL LAB, INC** **RCRA NonGen / NLR** **1027522871**
SW **21 ARGONAUT** **CAC003215244**
< 1/8 **ALISO VIEJO, CA 92656**
0.114 mi.
600 ft. **Site 3 of 5 in cluster C**

Relative: Higher
Actual: 459 ft.

RCRA Listings:
Date Form Received by Agency: 20230131
Handler Name: Halo Clinical Lab, Inc
Handler Address: 21 ARGONAUT
Handler City,State,Zip: ALISO VIEJO, CA 92656
EPA ID: CAC003215244
Contact Name: LONY LIM
Contact Address: 21 ARGONAUT
Contact City,State,Zip: ALISO VIEJO, CA 92656
Contact Telephone: 949-648-6754
Contact Fax: Not reported

HALO CLINICAL LAB, INC (Continued) **1027522871**

Contact Email:	LONY.LIM@HALODX.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	21 ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	John Feller, M.D.
Owner Type:	Other
Operator Name:	Lony Lim
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20230203
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

HALO CLINICAL LAB, INC (Continued) **1027522871**

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: JOHN FELLER, M.D.
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 74785 HWY 111 STE 101
Owner/Operator City,State,Zip: INDIAN WELLS, CA 92210
Owner/Operator Telephone: 760-275-7919
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: LONY LIM
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 21 ARGONAUT
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-648-6754
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20230131
Handler Name: HALO CLINICAL LAB, INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 621511
NAICS Description: MEDICAL LABORATORIES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

C12
SW
< 1/8
0.114 mi.
600 ft.

HALO CLINICAL LAB INC
21 ARGONAUT STE B
ALISO VIEJO, CA 92656

Site 4 of 5 in cluster C

RCRA NonGen / NLR

1027701467
CAL000478070

Relative:
Higher

Actual:
459 ft.

RCRA Listings:

Date Form Received by Agency:	20230517
Handler Name:	Halo Clinical Lab Inc
Handler Address:	21 ARGONAUT STE B
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAL000478070
Contact Name:	LONY LIM
Contact Address:	21 ARGONAUT STE B
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	949-648-6754
Contact Fax:	Not reported
Contact Email:	LONY.LIM@HALODX.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	21 ARGONAUT STE B
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Halo Clinal Lab Inc
Owner Type:	Other
Operator Name:	Lony Lim
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

HALO CLINICAL LAB INC (Continued) **1027701467**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20230612
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: HALO CLINAL LAB INC	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	21 ARGONAUT UNIT B
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	760-275-7919
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: LONY LIM	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	21 ARGONAUT STE B
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	949-648-6754
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20230517
Handler Name: HALO CLINICAL LAB INC	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

HALO CLINICAL LAB INC (Continued) **1027701467**

List of NAICS Codes and Descriptions:
NAICS Code: 621512
NAICS Description: DIAGNOSTIC IMAGING CENTERS

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

C13 **MOBILE TECH INC** **EDR Hist Auto** **1021596172**
SW **21 ARGONAUT** **N/A**
< 1/8 **ALISO VIEJO, CA 92656**
0.114 mi.
600 ft. **Site 5 of 5 in cluster C**

Relative: EDR Hist Auto
Higher

Actual: Year: Name: Type:
459 ft. 2008 MOBILE TECH INC Gasoline Service Stations, NEC

E14 **BEARING ENGINEERS** **RCRA NonGen / NLR** **1025865882**
SW **27 ARGONAUT** **CAL000111876**
< 1/8 **ALISO VIEJO, CA 92656**
0.124 mi.
653 ft. **Site 1 of 4 in cluster E**

Relative: RCRA Listings:
Higher

Actual:
468 ft.

Date Form Received by Agency:	19940302
Handler Name:	Bearing Engineers
Handler Address:	27 ARGONAUT
Handler City,State,Zip:	ALISO VIEJO, CA 92656-0000
EPA ID:	CAL000111876
Contact Name:	WALLY LOGAN
Contact Address:	27 ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	949-586-7442
Contact Fax:	949-586-7786
Contact Email:	WALLY.LOGAN@MOTIONSOLUTIONS.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	27 ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656-0000
Owner Name:	Bearing Engineers Inc
Owner Type:	Other
Operator Name:	Wally Logan

BEARING ENGINEERS (Continued) **1025865882**

Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	Yes
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20190627
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: BEARING ENGINEERS INC	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	27 ARGONAUT
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656-0000
Owner/Operator Telephone:	949-586-7442
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator

BEARING ENGINEERS (Continued) **1025865882**

Owner/Operator Name: WALLY LOGAN
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 27 ARGONAUT
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-586-7442
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19940302
Handler Name: BEARING ENGINEERS
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: Not reported
Recognized Trader Exporter: Not reported
Spent Lead Acid Battery Importer: Not reported
Spent Lead Acid Battery Exporter: Not reported
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 42184
NAICS Description: INDUSTRIAL SUPPLIES WHOLESALERS

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

E15 **BEARING ENGINEERS INC** **CERS HAZ WASTE** **S113063595**
SW **27 ARGONAUT** **HWTS** **N/A**
< 1/8 **ALISO VIEJO, CA 92656** **HAZNET**
0.124 mi. **CERS**
653 ft. **Site 2 of 4 in cluster E**

Relative:
Higher

Actual:
468 ft.

CERS HAZ WASTE:
Name: BEARING ENGINEERS INC
Address: 27 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 705434
CERS ID: 10538242
CERS Description: Hazardous Waste Generator

HWTS:
Name: BEARING ENGINEERS
Address: 27 ARGONAUT
Address 2: Not reported
City,State,Zip: ALISO VIEJO, CA 92656

BEARING ENGINEERS INC (Continued) **S113063595**

EPA ID:	CAL000111876
Inactive Date:	Not reported
Create Date:	03/02/1994
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	27 ARGONAUT
Mailing Address 2:	Not reported
Mailing City,State,Zip:	ALISO VIEJO, CA 926560000
Owner Name:	BEARING ENGINEERS INC
Owner Address:	27 ARGONAUT
Owner Address 2:	Not reported
Owner City,State,Zip:	ALISO VIEJO, CA 926560000
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	WALLY LOGAN
Contact Address:	27 ARGONAUT
Contact Address 2:	Not reported
City,State,Zip:	ALISO VIEJO, CA 92656
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Active
Facility Type:	PERMANENT
Category:	STATE
Latitude:	33.592745
Longitude:	-117.726096

NAICS:

EPA ID:	CAL000111876
Create Date:	2002-03-14 16:36:28.000
NAICS Code:	42184
NAICS Description:	Industrial Supplies Wholesalers
Issued EPA ID Date:	1994-03-02 00:00:00
Inactive Date:	Not reported
Facility Name:	BEARING ENGINEERS
Facility Address:	27 ARGONAUT
Facility Address 2:	Not reported
Facility City:	ALISO VIEJO
Facility County:	Not reported
Facility State:	CA
Facility Zip:	926560000

HAZNET:

Name:	BEARING ENGINEERS
Address:	27 ARGONAUT
Address 2:	Not reported
City,State,Zip:	ALISO VIEJO, CA 926560000
Contact:	WALLY LOGAN
Telephone:	9495867442
Mailing Name:	Not reported
Mailing Address:	27 ARGONAUT
Year:	2021
Gepaid:	CAL000111876
TSD EPA ID:	CAD008364432
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No

BEARING ENGINEERS INC (Continued) **S113063595**

	Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.45872
Year:	2019
Gepaid:	CAL000111876
TSD EPA ID:	CAD008364432
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.00000
Year:	2019
Gepaid:	CAL000111876
TSD EPA ID:	CAD008364432
CA Waste Code:	211 - Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.02085
Year:	2017
Gepaid:	CAL000111876
TSD EPA ID:	CAD008364432
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.418
Year:	2015
Gepaid:	CAL000111876
TSD EPA ID:	CAD008364432
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.836
Year:	2014
Gepaid:	CAL000111876
TSD EPA ID:	CAD008364432
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	1.2
Year:	2013
Gepaid:	CAL000111876
TSD EPA ID:	CAD981696420
CA Waste Code:	223 - Unspecified oil-containing waste
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.6255
Year:	2012
Gepaid:	CAL000111876
TSD EPA ID:	AZR000501510
CA Waste Code:	134 - Aqueous solution with total organic residues less than 10 percent

BEARING ENGINEERS INC (Continued) **S113063595**

Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.693
Year:	2010
Gepaid:	CAL000111876
TSD EPA ID:	AZR000501510
CA Waste Code:	134 - Aqueous solution with total organic residues less than 10 percent
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.693
Year:	2009
Gepaid:	CAL000111876
TSD EPA ID:	CAD008252405
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.627

Click this hyperlink while viewing on your computer to access
12 additional CA HAZNET: record(s) in the EDR Site Report.

Additional Info:

Year:	2017
Gen EPA ID:	CAL000111876
Shipment Date:	20170317
Creation Date:	5/24/2017 18:31:05
Receipt Date:	20170331
Manifest ID:	000165052DAT
Trans EPA ID:	CAD983649880
Trans Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
Trans 2 EPA ID:	CAR000217000
Trans 2 Name:	LA CHIQUITA TRUCKING
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.418
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2015
Gen EPA ID:	CAL000111876

BEARING ENGINEERS INC (Continued) **S113063595**

Shipment Date:	20150401
Creation Date:	6/23/2015 22:15:22
Receipt Date:	20150402
Manifest ID:	000164000MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.418
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150401
Creation Date:	6/23/2015 22:15:22
Receipt Date:	20150402
Manifest ID:	000164000MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.209
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150401
Creation Date:	6/23/2015 22:15:22
Receipt Date:	20150402
Manifest ID:	000164000MWI
Trans EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
Trans 2 EPA ID:	Not reported

BEARING ENGINEERS INC (Continued) **S113063595**

Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.209
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2014
Gen EPA ID:	CAL000111876
Shipment Date:	20141121
Creation Date:	1/21/2015 22:15:08
Receipt Date:	20141126
Manifest ID:	013795260JJK
Trans EPA ID:	CAD983649880
Trans Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.4
Waste Quantity:	800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141121
Creation Date:	1/21/2015 22:15:08
Receipt Date:	20141126
Manifest ID:	013795260JJK
Trans EPA ID:	CAD983649880
Trans Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC

BEARING ENGINEERS INC (Continued) **S113063595**

TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.4
Waste Quantity:	800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141121
Creation Date:	1/21/2015 22:15:08
Receipt Date:	20141126
Manifest ID:	013795260JJK
Trans EPA ID:	CAD983649880
Trans Name:	PSC ENVIRONMENTAL SERVICES OF POMONA LP
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD008364432
Trans Name:	RHO CHEM LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.4
Waste Quantity:	800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2013
Gen EPA ID:	CAL000111876
Shipment Date:	20130503
Creation Date:	7/16/2013 22:15:16
Receipt Date:	20130503
Manifest ID:	010595163JJK
Trans EPA ID:	CAD982413262
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD981696420
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	223 - Unspecified oil-containing waste

BEARING ENGINEERS INC (Continued) **S113063595**

RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.6255
Waste Quantity: 150
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2012
Gen EPA ID: CAL000111876

Shipment Date: 20120405
Creation Date: 5/28/2013 22:15:14
Receipt Date: 20120423
Manifest ID: 007257614JJK
Trans EPA ID: CAD983613688
Trans Name: MILES CHEMICAL COMPANY
Trans 2 EPA ID: CAD980585293
Trans 2 Name: INDUSTRIAL WASTE UTILIZATION
TSDF EPA ID: AZR000501510
Trans Name: AA SYDCOL LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 134 - Aqueous solution with <10% total organic residues
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.693
Waste Quantity: 165
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2010
Gen EPA ID: CAL000111876

Shipment Date: 20100603
Creation Date: 1/14/2011 18:30:31
Receipt Date: 20100618
Manifest ID: 005330658JJK
Trans EPA ID: CAD983613688
Trans Name: MILES CHEMICAL COMPANY
Trans 2 EPA ID: CAD980585293
Trans 2 Name: INDUSTRIAL WASTE UTILIZATION
TSDF EPA ID: AZR000501510
Trans Name: AA SYDCOL LLC
TSDF Alt EPA ID: Not reported

BEARING ENGINEERS INC (Continued) **S113063595**

TSDF Alt Name: Not reported
Waste Code Description: 134 - Aqueous solution with <10% total organic residues
RCRA Code: Not reported
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.693
Waste Quantity: 165
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2009
Gen EPA ID: CAL000111876

Shipment Date: 20090113
Creation Date: 6/17/2009 18:30:35
Receipt Date: 20090113
Manifest ID: 004037523JJK
Trans EPA ID: CAR000194837
Trans Name: PACIFIC COAST LACQUER
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008252405
Trans Name: PACIFIC RESOURCE RECOVERY
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons: 0.627
Waste Quantity: 165
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2008
Gen EPA ID: CAL000111876

Shipment Date: 20080519
Creation Date: 10/30/2008 18:30:46
Receipt Date: 20080519
Manifest ID: 000575107JJK
Trans EPA ID: CAD008252405
Trans Name: PACIFIC COAST LACQUER
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD008252405
Trans Name: PACIFIC RESOURCE RECOVERY

BEARING ENGINEERS INC (Continued) **S113063595**

TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.627
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

CERS:

Name:	BEARING ENGINEERS INC
Address:	27 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	705434
CERS ID:	10538242
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	705434
Site Name:	BEARING ENGINEERS INC
Violation Date:	08-27-2013
Citation:	22 CCR 15 66265.51 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.51
Violation Description:	Failure to prepare and implement a Contingency Plan to minimize human hazards or threat to the environment and to carry out the provisions of the plan whenever there is a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.
Violation Notes:	Returned to compliance on 09/03/2013. Hazardous waste contingency plan not available for review. Complete the hazardous waste emergency response sticker provided with this report and post on site.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,

Site ID:	705434
Site Name:	BEARING ENGINEERS INC
Violation Date:	06-07-2019
Citation:	22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)
Violation Description:	Failure to keep a copy of each properly signed manifest for at least three years from the date the waste was accepted by the initial transporter. The manifest signed at the time the waste was accepted for transport shall be kept until receiving a signed copy from the designated facility which received the waste.
Violation Notes:	Returned to compliance on 02/09/2022. Documentation for hazardous waste pickup not available for review. Provide copies of receipts/manifests for the latest pickups of hazardous waste from your facility.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,

BEARING ENGINEERS INC (Continued) **S113063595**

Site ID: 705434
Site Name: BEARING ENGINEERS INC
Violation Date: 06-07-2019
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 02/09/2022. Make sure all the waste coolant drums are properly stored, labeled and dated. Complete the hazardous waste labels provided during the inspection and post on the waste coolant drums.
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Site ID: 705434
Site Name: BEARING ENGINEERS INC
Violation Date: 06-07-2019
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Training - General
Violation Notes: Returned to compliance on 02/09/2022. All employees working with or around hazardous waste need to be provided hazardous waste management training. Document training and provide record (spread sheet/employee sign in sheet) to Health Care Agency.
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Site ID: 705434
Site Name: BEARING ENGINEERS INC
Violation Date: 08-27-2013
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 09/03/2013. The 55 gallon waste coolant drum and the two 5 gallon waste solvent drums were not properly identified. Fill out the hazardous waste labels provided with this report and post on the above mentioned containers.
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-01-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area.
Permission to inspect granted by jim Coombes (quality manager).
Hazardous waste properly stored, labeled and dated. Hazardous waste

BEARING ENGINEERS INC (Continued) **S113063595**

emergency response sticker completed and posted on site. Manifests for hazardous waste pickup available for review during the past three years. No violations noted at this time.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Onsite for routine hazardous materials inspections. Met with Ernie Calderon, warehouse manager who provided consent to inspect. The business is currently being moved to a new location in Irvine. The hazardous waste/materials and process has already been moved to the new location. Currently only supplies in the warehouse remain and the site will be emptied. Will forward the new address to the Irvine inspector and submit a request to close out this facility.
Inspection report emailed to environmental contact wally.logan@motionsolutions.com
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-20-2019
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Corrected re inspection date.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-08-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Received call from Jose Montayo that the facility has been vacated and moved out 2/28/2023. On site to verify and site is vacant. Will close facility out from HW and HMBP program. Also request invoice reversal (IN264855, IN2648707)
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-23-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: file review for compliance status
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2019
Violations Found: Yes

BEARING ENGINEERS INC (Continued) **S113063595**

Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect granted by Mark Isola (director of operations). Hazardous waste emergency response sticker completed and posted on site. * Provide requested documentation to Health Care Agency within 30 days.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Onsite for routine hazardous waste inspections. Met with Ernie Calderon, warehouse manager who provided consent to inspect. The business is currently being moved to a new location in Irvine. The hazardous waste/materials and process has already been moved to the new location. Currently only supplies in the warehouse remain and the site will be emptied. Will forward the new address to the Irvine inspector and submit a request to close out this facility. Inspection report emailed to environmental contact wally.logan@motionsolutions.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-07-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-08-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Received call from Jose Montayo that the facility has been vacated and moved out 2/28/2023. On site to verify and site is vacant. Will close facility out from HW and HMBP program. Also request invoice reversal (IN264855, IN2648707)
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-27-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Wally Logan. Documentation for hazardous waste pickup reviewed on site. > Complete the certificate of return to compliance (CRC) issued with this report. Sign, date and return CRC to Health Care Agency within

BEARING ENGINEERS INC (Continued) **S113063595**

30 days.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-03-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received CRC dated 8-28-13. Violations corrected per Wally Logan. Deleted violations W013 and W029. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Coordinates:
Site ID: 705434
Facility Name: BEARING ENGINEERS INC
Env Int Type Code: HMBP
Program ID: 10538242
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.592360
Longitude: -117.726620

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Wally Logan
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Identification Signer
Entity Name: Wally Logan
Entity Title: VP Engineering
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Parent Corporation
Entity Name: BEARING ENGINEERS INC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

BEARING ENGINEERS INC (Continued) **S113063595**

Affiliation Type Desc:	CUPA District
Entity Name:	Orange County Env Health
Entity Title:	Not reported
Affiliation Address:	1241 East Dyer RoadSuite 120
Affiliation City:	Santa Ana
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92705-5611
Affiliation Phone:	(714) 433-6406,

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	27 Argonaut
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

Affiliation Type Desc:	Legal Owner
Entity Name:	Bearing Engineers, Inc. (Corporation)
Entity Title:	Not reported
Affiliation Address:	27 Argonaut
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92656
Affiliation Phone:	(949) 586-7442,

Affiliation Type Desc:	Operator
Entity Name:	Bearing Engineers, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(949) 586-7442,

Affiliation Type Desc:	Environmental Contact
Entity Name:	Wally Logan
Entity Title:	Not reported
Affiliation Address:	27 Argonaut
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

D16
South
1/8-1/4
0.130 mi.
688 ft.

KENNEDY PIPELINE CO
61 ARGONAUT
ALISO VIEJO, CA 92656

Site 2 of 5 in cluster D

UST FINDER **1028192210**
N/A

Relative:
Higher

Actual:
422 ft.

UST FINDER:

Object ID:	736441
Facility ID:	CA10516102
Name:	KENNEDY PIPELINE CO
Address:	61 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656
Address Match Type:	PointAddress
Open USTs:	2
Closed USTs:	Not reported
TOS USTs:	Not reported
Population 1500ft:	880
Private Wells 1500ft:	0
Within 100yr Floodplain:	No
Land Use:	Developed, Medium Intensity
Within SPA:	Not reported
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Not reported
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Open UST(s)
Date of Last Inspection:	Not reported
EPA Region:	9
Tribe:	Not reported
Coordinate Source:	Geocode
X Coord:	-117.723734964
Y Coord:	33.592076997
Latitude:	33.5920769970827
Longitude:	-117.723734964488

UST FINDER:

Object ID:	2273313
Facility ID:	CA10516102
Tank ID:	CA10516102-002_A Stand-alone Tank_1
Tank Status:	Open
Installation Date:	1988/09/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	10000
Substances:	Diesel
Tank Wall Type:	Double Wall

Object ID:	2273314
Facility ID:	CA10516102
Tank ID:	CA10516102-001_A Stand-alone Tank_1
Tank Status:	Open
Installation Date:	1988/01/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	12000
Substances:	Regular Unleaded
Tank Wall Type:	Double Wall

D17
South
1/8-1/4
0.130 mi.
688 ft.

KENNEDY PIPELINE CO
61 ARGONAUT
ALISO VIEJO, CA 92656

Site 3 of 5 in cluster D

UST **U003433121**
SWEEPS UST **N/A**

Relative:
Higher

Actual:
422 ft.

ORANGE CO. UST:

Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO 92656
Facility ID: FA25143
Notes: Not reported

Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO 92656
Facility ID: FA25143
Notes: Not reported

Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656-1423
Facility ID: FA0025143
Notes: Not reported

Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656-1423
Facility ID: FA0025143
Notes: Not reported

UST:

Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656
Facility ID: FA0025143
Permitting Agency: Orange County Environmental Health
CERSID: 10516102
Latitude: 33.5920800
Longitude: -117.723580
Owner type: Non-Government
Facility type: Motor Vehicle Fueling
Num of inuse ust: Not reported
Num of closed ust: 0
Num of oos ust: 0
Epa region: 9
Tribal lands: No
Tank owner name: Trumble Properties
Tank owner mailing address: 16331 Construction E.
Tank owner mailing city: Irvine
Tank owner mailing zip: 92606
Tank owner mailing state: Ca
Tank operator name: Trumble Properties
Tank operator mailing address: 16331 Construction Circle East
Tank operator mailing city: Irvine
Tank operator mailing zip: 92606
Tank operator mailing state: CA
Tankidnumber: 30-000-FA0025143-001
Tank status: Renewal Permit

KENNEDY PIPELINE CO (Continued) **U003433121**

Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	1/1/1988 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Regular Unleaded
Tank capacity gallons:	12000
Tank type:	Double Wall
Tank pc construction:	Fiberglass
Tank pwpiping construction:	Fiberglass
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	No
Tank ball float:	No
Tank spill bucket:	Yes

Name:	KENNEDY PIPELINE CO
Address:	61 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656
Facility ID:	FA0025143
Permitting Agency:	Orange County Environmental Health
CERSID:	10516102
Latitude:	33.5920800
Longitude:	-117.723580
Owner type:	Non-Government
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	Trumble Properties
Tank owner mailing address:	16331 Construction E.
Tank owner mailing city:	Irvine
Tank owner mailing zip:	92606
Tank owner mailing state:	Ca
Tank operator name:	Trumble Properties
Tank operator mailing address:	16331 Construction Circle East
Tank operator mailing city:	Irvine
Tank operator mailing zip:	92606
Tank operator mailing state:	CA
Tankidnumber:	30-000-FA0025143-002
Tank status:	Renewal Permit
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	9/1/1988 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Diesel
Tank capacity gallons:	10000
Tank type:	Double Wall
Tank pc construction:	Fiberglass
Tank pwpiping construction:	Fiberglass
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No

KENNEDY PIPELINE CO (Continued) **U003433121**

Tank cp impressed current: No
Tank cp shutoff: Yes
Tank alarms: No
Tank ball float: No
Tank spill bucket: Yes

SWEEPS UST:
Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City: ALISO VIEJO
Status: Active
Comp Number: 9851
Number: 9
Board Of Equalization: 44-016784
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-009851-000001
Tank Status: A
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 2

Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City: ALISO VIEJO
Status: Active
Comp Number: 9851
Number: 9
Board Of Equalization: 44-016784
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-009851-000002
Tank Status: A
Capacity: 12000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

D18 **KENNEDY PIPELINE CO** **CERS HAZ WASTE** **S101631265**
South **61 ARGONAUT** **CERS TANKS** **N/A**
1/8-1/4 **ALISO VIEJO, CA 92656** **CA FID UST**
0.130 mi. **CERS**
688 ft. **Site 4 of 5 in cluster D**

Relative: Higher
Actual: 422 ft.

CERS HAZ WASTE:
Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656

KENNEDY PIPELINE CO (Continued) **S101631265**

Site ID: 372542
CERS ID: 10516102
CERS Description: Hazardous Waste Generator

CERS TANKS:
Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 372542
CERS ID: 10516102
CERS Description: Underground Storage Tank

CA FID UST:
Facility ID: 30012495
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7143808363
Mail To: Not reported
Mailing Address: 61 ARGONAUT
Mailing Address 2: Not reported
Mailing City,St,Zip: ALISO VIEJO 92656
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

CERS:
Name: KENNEDY PIPELINE CO
Address: 61 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 372542
CERS ID: 10516102
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 372542
Site Name: KENNEDY PIPELINE CO
Violation Date: 04-13-2018
Citation: 23 CCR 16 2641(j) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(j)
Violation Description: Failure of the leak detection equipment to be installed, calibrated, operated, and/or maintained properly.
Violation Notes: Returned to compliance on 04/13/2018. The unleaded test boot was still attached and the port was facing up. This boot was last used during the SB989 testing done 12/20/2017, so the system has been operated without secondary line leaks being found at the earliest possible point. The boot was pulled back during the montioring certification this date. This violation was abated during the inspection.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

KENNEDY PIPELINE CO (Continued) **S101631265**

Site ID:	372542
Site Name:	KENNEDY PIPELINE CO
Violation Date:	04-18-2016
Citation:	22 CCR 15 66265.173 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.173
Violation Description:	Failure to properly close hazardous waste containers when not in active use.
Violation Notes:	Returned to compliance on 04/17/2017. There is a cubic yard crate stored by the property wall that contains several five gallon plastic buckets. The buckets contain a variety of hazardous materials and hazardous wastes. Some of these buckets are without lids. Cover all the buckets and determine which are usable product and which are waste. Properly identify the hazardous waste containers and have them picked up by a registered hazardous waste hauler.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,

Site ID:	372542
Site Name:	KENNEDY PIPELINE CO
Violation Date:	04-26-2021
Citation:	23 CCR 16 2715(a)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(a)(2)
Violation Description:	Failure to submit the Underground Storage Tank Statement of Understanding and Compliance Form.
Violation Notes:	Returned to compliance on 05/06/2021. "Underground Storage Tank Statement of Understanding and Compliance Form" has not been prepared for this site. Missing form must be completed and be submitted electronically and a copy be available on site within 30 days of this inspection.
Violation Division:	Orange County Environmental Health
Violation Program:	UST
Violation Source:	CERS,

Site ID:	372542
Site Name:	KENNEDY PIPELINE CO
Violation Date:	01-06-2021
Citation:	HSC 6.7 25291(a)(2) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(a)(2)
Violation Description:	Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes:	Returned to compliance on 04/30/2021. The following secondary containment components failed a test conducted 12/15/20. Repair/replace the failed components and re-test. Submit a test report to this agency within 60 days (3/6/21). Some repairs may require the submittal of a repair plan to this agency for review and approval - contact this agency with questions. - T1 Unleaded product piping run - T1 Unleaded piping sump
Violation Division:	Orange County Environmental Health
Violation Program:	UST
Violation Source:	CERS,

Site ID:	372542
Site Name:	KENNEDY PIPELINE CO
Violation Date:	05-22-2015
Citation:	HSC 6.7 25286(a) - California Health and Safety Code, Chapter 6.7, Section(s) 25286(a)

KENNEDY PIPELINE CO (Continued) **S101631265**

Violation Description: Failure to submit an complete and accurate application for a permit to operate an underground storage tank, or for renewal of the permit.
Violation Notes: Returned to compliance on 06/23/2015. The UST documents submitted via the E-Submit Portal on 6/23/14 were reviewed and DECLINED. Please submit the documents to an approved electronic reporting database within 30 days.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 372542
Site Name: KENNEDY PIPELINE CO
Violation Date: 04-18-2014
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 05/18/2015. Certification of financial responsibility expired on 4-15-14. Provide or electronically submit current certification of financial responsibility to Health Care Agency within 30 days.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 372542
Site Name: KENNEDY PIPELINE CO
Violation Date: 04-26-2021
Citation: 23 CCR 16 2712(b)(6) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(6)
Violation Description: Failure to maintain records of repairs and upgrades on site, or off site if approved by the UPA, for the life of the UST.
Violation Notes: Returned to compliance on 05/06/2021. A copy of Secondary Containment Test Report Form for tests conducted on 12/15/19 must be obtained and be maintained on site within 30 days of this inspection.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 372542
Site Name: KENNEDY PIPELINE CO
Violation Date: 01-17-2018
Citation: HSC 6.7 25291(a)(2) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(a)(2)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Returned to compliance on 06/04/2018. Review of SB989 testing done on 12/20/2017 shows that the unleaded tanks secondary piping, piping sump and udc all failed testing that date. The piping and UDC appear to have problems with cracked test boots and disintegrated penetration fittings and unsealed high electrical fittings. Please submit a plan check for repair of the failed components to this Agency within 30 days, repair of the penetration fittings and adding penetration fittings to the electrical fitting area will require a plan check, and subsequent retesting. If there is a question regarding the necessity of plan check for certain repairs or modifications, please contact this Agency for clarification. Plan Check Fees and the

KENNEDY PIPELINE CO (Continued) **S101631265**

Facility Modification Application can be found at www.occupainfo.com
Please schedule the retest for the failed components within 30 days.
Notify this Agency at least 48 hours prior to the testing event.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 06-10-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: esubmit review and call to Mike regarding status
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-01-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File review
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-27-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted CFR disclosure in e submit. CFR valid through 6-23-16. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-03-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined disclosure in e submit. Please address the following: According to the last on site inspection, there is hazardous waste generated and stored (55 gallons or greater) at this facility. Check the top box in section II E of the Business Activity page. Un check the 4th box in this section. There is no treatment of hazardous waste at this facility. Also, un check box II B. Change the fire code hazard class from flammable to combustible liquid II for the diesel entry. Also make sure the maximum daily amount is correct. This refers to the maximum amount of diesel that would ever be stored in the tank. Check the maximum daily amount for the gasoline disclosure as well. Waste oil and waste coolant will need to be disclosed. Add an entry for both. The site map is missing the site orientation symbol (N arrow) and locations for the hazardous waste storage, emergency shut offs (electrical, water and natural gas), storm drain/sewer and any emergency [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-22-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for secondary containment testing performed on 12-22-14 and 1-20-15. All applicable secondary components passed.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-13-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: CERS review rejected Please make the following changes and resubmit wthin 30 days; 1. remove disclosure of paint material as you state you have under 55 gallons (which is the disclosure limit) 2. on acyetylene- add CAS 74-86-2, fire code hazard class should be both flamable gas and unstable reactive, make storage pressure above ambient 3. on oxygen- add CAS 7782-44-8, fire code hazard class should be oxidizing gas, make storage pressure above ambient 4. on the diesel disclosure, add fire code hazard class combustible 2, make both pressure and temperature ambient 5 on the gasoline disclosure, add fire code hazard class flammable 1b, make both pressure and temperature ambient The submittal was declined, please make the following changes and resubmit within 30 days. The Emergency Plan did not transfer correctly from e-submit to CERS. The business emergency plan section does not cover all required information. I suggest that you either use the BEP template located [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-29-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: emailed Kenny, requested update on violation abatement (fixing the secondary and retesting). Hi Kenny, I need an update on this violation. Did you get someone to fix the secondary yet? I have not seen a plan check for it, and it is over the time limit given. If you have questions about the above information, please call me during my office hours from 6:30 am to 9:30 am. Thank you, Bri Dewey REHS Hazardous Waste Specialist III Hazardous Materials Surveillance Section 1241 E. Dyer Road Suite 120, Santa Ana, Ca 92705 Direct: 657-622-9434 Fax 714-754-1768 bdewey@ochca.com
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-30-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-05-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Walked facility with the latest submitted hazardous material inventory and site map. Hazardous material containment appeared to be in satisfactory condition. No leaking observed or indication previous releases. Updated inventory information and added propane to the inventory. Locations for the site map requirements are accurate. Please address the following: Facility site map is missing locations for an employee evacuation area, propane storage, absorbent/spill kit and the electrical shut offs. Add these to the map. The business emergency plan is a placeholder from the previous portal and is missing required information. Use the emergency response/contingency plan template located in the portal. Complete and upload this to the corresponding section. Correct contact information and phone numbers provided to Kenny Rowland. Annual business emergency plan training is required for all employees at this business. Make sure training is provided and documented. [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine Underground Storage Tank (UST) inspection and witness the annual monitoring system certification and spill bucket testing. Met with Marty Schwartz, service technician with OC Tank Testing. Technician’s certifications (Veeder-Root, ICC, VMI) were verified. Also present was Jill Rejtharek with Trumble Properties. The site contains two (2) DW USTs - 12,000 gallons (unleaded) - 10,000 gallons (diesel) 2 UDCs The system is monitored by a Veeder Root TLS 350. The tank annular are VR-303; sumps and UDCs are VR208s. leak detectors are mechanical (VMI). Overfill protection is provided by fill tube shut-off valve (flapper). The monitor is operational for audible and visual alarm. Sensors were observed positioned at the lowest point. All sensors tested were verified to be operational. Positive shutdown and fail-safe programming were fail-safe programming were verified. Alarm history and setup tape were reviewed while on site. Spill buckets tested hydrostatically wit

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-17-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine inspection. Walked facility with the latest disclosed site map in e submit. The map appeared accurate as to the locations of the few items that were on the map. Disclosure was

KENNEDY PIPELINE CO (Continued) **S101631265**

declined on 11-3-14 for the following reasons: Check the top box in section II E of the Business Activity page. Un check the 4th box in this section. There is no treatment of hazardous waste at this facility. Also, un check box II B. Change the fire code hazard class from flammable to combustible liquid II for the diesel entry. Also make sure the maximum daily amount is correct. This refers to the maximum amount of diesel that would ever be stored in the tank. Check the maximum daily amount for the gasoline disclosure as well. Site map missing site orientation (north arrow), sewer/storm drains, emergency shut offs (water, electrical and natural gas), hazardous material/waste handling areas and emergency response equipment (absorbent/spill kit). * Disclosure has [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Kenny Rowland. Documentation for hazardous waste pickup reviewed on site. Hazardous waste properly stored and identified. Hazardous waste emergency response sticker completed and posted on site. No violations noted at this time.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-18-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Fix violation status in EC (close > open for previously corrected violations)

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2014
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Martin Schwartz of Orange County Tank Testing currently performing a UST monitoring system certification. Current ICC, Franklin Fueling, F E Petro, Veeder-Root, VMI and TEI certifications provided. Facility consists of two tanks and two UDCs. Both tank annulars are liquid filled. Diesel fill is direct bury. Diesel turbine sump had less than one gallon of water in it (pumped out during inspection). The other four secondary containment sumps were free of liquid. All sensors were located at the low areas of secondary containment. Reviewed designated operator inspection reports for the past 12 months. Two alarms noted during that time period. Corrective action documentation available for review. Training provided to two employees on 8-6-13. Records reviewed on site. SB 989 testing performed on 12-28-11.

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous materials and business emergency plan inspection. Jill Rejtharek, provided consent to inspect. Observed the facility and inspected hazardous materials storage. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - diesel - gasoline - propane -acetylene -welding oxygen Hazardous Materials disclosed in CERS match what is reported on site. Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revised documents (electronically though CERS) within 30 [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-24-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for monitoring certification performed on 4-18-14. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-30-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed copy of Secondary Containment Testing Report Form for retesting conducted on 4/16/21 on gasoline tank's (T1) secondary piping that failed initial test on 12/15/20 and retest on 2/3/21. A new Bravo Rigid FRP Clamshell Split Repair Test Reducer was installed on the secondary piping in gasoline UDC 3/4. Gasoline tank's secondary piping passed when tested after repair. Outstanding violation I382 regarding failure to maintain secondary containment, cited in this agency's inspection report dated 1/6/21, has been corrected.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-18-2017

KENNEDY PIPELINE CO (Continued) **S101631265**

Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: review and accepted in esubmit
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine hazardous waste inspection. Jill Rejtharek provided consent to inspect. According to Ms. Rejtharek, the facility has not generated hazardous waste since 2019 and none of the current tenant on site generates hazardous waste. Submit a RUR to remove the facility from hazardous waste program. Inspection report emailed to jillrejtharek@hotmail.com and environmental contact kassey@channelequip.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine Underground Storage Tank (UST) inspection and witness the annual monitoring system certification and spill bucket testing. Met with Marty Schwartz, service technician with OC Tank Testing. Technician's certifications (Veeder-Root, ICC, VMI) were verified. Also present was Jill Rejtharek with Trumble Properties. The site contains two (2) DW USTs - 12,000 gallons (unleaded) - 10,000 gallons (diesel) 2 UDCs The system is monitored by a Veeder Root TLS 350. The tank annulars are VR-303; sumps and UDCs are VR208s; Overfill protection is provided by fill tube shut-off valve (flapper). The monitor is operational for audible and visual alarm. Sensors were observed positioned at the lowest point. All sensors tested were verified to be operational. Positive shutdown and fail-safe programming were fail-safe programming were verified. Alarm history and setup tape were reviewed while on site. Spill buckets tested hydrostatically without any in [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-04-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed copies of Monitoring System Certification Form, Spill Container Testing Report Form and Overfill Prevention Equipment Inspection Report Form for activities conducted on 4/26/21. All components passed test.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval General Type: Other/Unknown
Eval Date: 05-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File purge
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-13-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined disclosure in e submit. Please address the following: Un mark boxes II B & II E (4th) on the business activities page. Mark box II E (1st) on the business activities page. Add the mailing address in section III of the business owner/operator page. Change the following to the diesel disclosure: > Fire code hazardous class should be combustible liquid , class II > Maximum daily amount refers to the most you would ever store on site. You disclosed 300 gallons. If this is the most that ever would be stored on site you may leave it. Otherwise change it to the amount you would have after fuel is "dropped" in the tank. > Enter 365 for the "days on site". Check the maximum daily amount for the gasoline disclosure. It appears that some hazardous materials may have been omitted from the disclosure. Add any compressed gases and vehicle maintenance chemicals/materials that are at or above disclosure threshold to the chemical [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-19-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the monitoring system certification test report, site map, and spill bucket test report for a test conducted 4/30/2020. The following components PASSED testing: - Tank Annular Sensors (2) - Piping Sump Sensors (2) - Fill Sump Sensors (2) - UDC Sensors (2) - Fail Safe/Sensor Out - Spill Buckets Visual Test - Line Leak Detectors
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-04-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Witnessed SB989 testing of failed components of SB989, all components passed, awaiting final results within 30 days to close SR.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-23-2015
Violations Found: No

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval Type: Other, not routine, done by local agency
Eval Notes: Initial hazardous material disclosure review
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-29-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined re submittal in e submit. Please address the following to the disclosure: Un mark the box "flammable gas" for the diesel description. It is correctly checked as a combustible liquid. Un mark the box "flammable gas" for the gasoline description. The flammable liquid 1-A box should be marked instead. It appears that some hazardous materials may have been omitted from the disclosure. Add any compressed gases and vehicle maintenance chemicals/materials that are at or above disclosure threshold to the chemical inventory/description. The site map is missing site orientation (north arrow), emergency shut offs (electrical, water & natural gas) and any hazardous material handling areas. Add these to the map. Re submit after modifications have been performed.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-26-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site to witness monitoring system certification testing activities and to conduct routine UST inspection. Annulars are wet . Sensors shut down respective turbine at sensor out and high liquid level. Sump and UDC sensors alarmed properly (visual and audible) and shut down respective turbine when submerged in water. Fail-safe and sensor out and were tested and passed. Line leak detectors were tested and passed. Overfill Prevention Equipment for this site is Fill Tube Shut-Off Valve which is being tested today. Spill bucket testing was not witnessed since they were not filled with water during inspection. Valid permit, designated operator documentation, monthly inspection reports, responses to alarms, monitoring plan, response plan, employee training records, tank pages, certification of financial responsibility, copies of Monitoring System Certification Report Form and Overfill Prevention Equipment Inspection Report Form (last conducted on 4/5/19) [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-30-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: An on-site inspection was conducted this date to witness the annual monitoring system certification. Marty Schwartz (OC Tank Testing) conducted the monitoring system certification and provided current Veeder-Root, VMI, and ICC certifications. NOTE: The tester states that

KENNEDY PIPELINE CO (Continued) **S101631265**

tow truck company may soon start using the USTs at this facility but suspects there will be no ownership change. This facility contains: 2 - USTs (diesel, unleaded) Monitor system is a Veeder-Root monitor panel and reads all functions normal. Overfill protection provided by fill tube shut-off valve (flapper). Sensors were observed positioned so as to initiate alarms at the earliest point possible. Sensors were re-positioned in a true vertical position upon installation after testing. Alarm history and setup tape reviewed while on site. The following were tested: - Sensors: -- Tank Annulars: VR4303 -- Sumps: VR 208 -- UDCs: VR 208 - Sensors, initiated positive shutdown to the turbines when [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-03-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Recieved and reviewed the monitoring certification results from the 4/17/2017 monitor cert. All components passed at that time.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-10-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined submittal in e submit. Please address the following: [Section III of the monitoring plan] UST map/plot plan is not available for review. Make sure the plot plan has been uploaded. [Section IV of the monitoring plan] Mark one of the four bubbles just below where "secondary containment is ..." is shown. Resubmit after modifications are performed.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-22-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed results from secondary containment testing done after SB989 repairs. All components passed on 6/4/2018

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-09-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File review and e submit review. The FA & PR numbers in EC are different than than what is on the e submit disclosure from this facility. Discussed with Dean Freed. CFR appeared to be sent to city of Orange not OCHCA. Called Matt Trumble to explain.

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-19-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Accepted submittal in e submit
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-07-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in e submit.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-08-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: NOV issued for operating without a permit, due to non-compliance. NOV mailed October 1, 2015.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-10-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: SB 989 test notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-16-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: SB989 Notification (12/20/17)
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-23-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for SB 989 testing performed on 12-22-14.
Secondary piping and piping sump for the unleaded was not tested due to cracked test boot. Schedule testing and submit results after the

KENNEDY PIPELINE CO (Continued) **S101631265**

test boot has been replaced.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-01-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted designated operator submittal in e submit. Deleted violation I582. Facility is ready for permit.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-05-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Change status to receive a permit, per Malis.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-29-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed copy of testing dated 11/17/17, done for the insurance company prior to insurance. The system had a non-volumetric tank and line test that passed. Copy for file attached.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Martin Schwartz and Rich Ruston of Orange County Tank Testing currently performing a UST monitoring system certification. Current ICC, Franklin Fueling, F E Petro, Veeder-Root, VMI and TEI certifications provided. Facility consists of two tanks and two UDCs. Both tank annulars are liquid filled. Diesel fill is direct bury. Secondary containment sumps were free of liquid. All sensors were located at the low/proper areas of secondary containment. Reviewed designated operator inspection reports for the past 12 months. Corrective action verbiage/documentation available for the four alarms noted during that time period. Designated operator training provided to four employees on 3-9-16. Records reviewed on site. SB 989 testing performed on 12-22-14. CFR valid through 6-23-16. Designated operator notification valid through 3-14-17 UST forms previously accepted in e submit. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect granted by kenny Rowland. Business maintenance operations are now conducted at building 71. Waste oil is the only hazardous waste generated at this time. Documentation for hazardous waste pickup available for review during the past three years . Business emergency plan available for review.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-20-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results from a UST monitoring system certification performed on 4-17-15. Monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-22-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for a monitoring system certification performed on 4-18-16. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-30-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed monitoring certification from testing done 04/13/2018. All systems and spill bucket testing passed at that time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-30-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the overfill prevention equipment certification test report for a test conducted 4/5/2019. The following tanks PASSED testing: - Unleaded: Flapper (95%) - Diesel: Flapper (95%)
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval General Type: Other/Unknown
Eval Date: 05-05-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Initial disclosure review in e submit Messages left with contacts Requested call backs
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-06-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for follow up inspection to correct the following outstanding violations cited during routine inspection conducted on 4/26/21: - Violation I007 regarding failure to submit Underground Storage Tank Statement of Understanding and Compliance" Form. Form dated 4/27/21 is available on site in UST binder and this violation has been corrected. - Violation I319 regarding failure to maintain records of monitoring, maintenance, repairs and upgrade records maintained for life of UST, on site. A copy of Secondary Containment Test Report Form for tests conducted on 12/15/19 is available on site and this violation has been corrected.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-22-2015
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: To access the E-Submit Portal, please go to www.esubmit.ocgov.com. If you have questions about this report, please contact your inspector: lmalis@ochca.com
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-27-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Changed UST status to not get a permit, per Freed.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-10-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: esubmit review and call to Mike regarding status
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval General Type: Other/Unknown
Eval Date: 06-23-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined designated operator submittal in e submit. The designated operator that has been contracted to do the inspections needs to be listed for the "name" regarding the primary designated operator. List the proper phone number, ICC number and expiration date. Reviewed and accepted business owner/operator, tank, monitoring plan and response plan forms in e submit. * Still need to submit certification of financial responsibility in the e submit portal. Complete the required fields and submit. This form is needed in order to reissue the permit to operate which expires on 6-30-15. > Sent the following e mail to Matt Trumble: Hi Matt, I accepted all but one of the forms that were submitted. Check the e submit portal and look at the comments regarding the designated operator form. Also, the certification of financial responsibility form needs to be submitted electronically in order to reissue the permit to operate which expires on 6-30-15.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-13-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: file review a phone to Matt T regarding permit
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-13-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Tank Test (required by insurance) 11/17/17.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-13-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification for 4-17-17
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-13-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS declined The submittal was declined, make the following changes and resubmit within 30 days; 1. on the facility info, you list the permit holder as OC tank testing, it has to be

KENNEDY PIPELINE CO (Continued) **S101631265**

either Kennedy Pipeline or the property owner 2. on tank information sections; check to see if they are owens corning or Xerxes tanks, there is competing info, and fix in tank description 3. the tank construction section should show yes for fill tube shut off valve (ball float alone is not approve overfill) 4. on the fill component section, you should show yes for both striker plate and containment sumps in addition to spill bucket 5. under corrosion protection, check isolation yes 6. on the monitoring plan sections, check to see if the tank has wet annulars, or not and populate secondary containment as wet or dry 7. under automatic tank gauging, do not list yes 8. under mechanical line leak detector, you have listed both types on both systems, match only the correct [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-17-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Routine inspection conducted this date in regards to hazardous waste, consent to enter, inspect and take photographs was given by Kenny Rowland, manager Hazardous waste containers on-site this date consisted of: small amounts of waste oil Witnessed storage of material in proper containment to avoid rain. The containers are in compliance with all applicable labeling requirements this date. Per Kenny, employees receive Hazardous Waste Management Training on the job. Consolidated waste receipts/ manifests were reviewed this date. Hazardous Waste Emergency Response information and was posted. Inspected municipal trash dumpster and area, no apparent hazardous waste in this area. Perimeter of facility inspected, no water runoff or staining noted at this time. Discussed Hazardous Waste Program, Hazardous Materials Program, and Management of Universal Waste. E-mailed copy of report this date. >>>>Please consult http://occupainfo.com/ for [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-18-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for initial hazardous materials and business emergency plan audit. Observed the facility and inspected hazardous materials storage. The following hazardous materials were observed in amounts that exceed the required disclosure quantities: - One ATF AST - One 15-40 new oil AST - One used radiator coolant/hot tank solution AST - One waste oil AST - One diesel UST - One gasoline UST - Five CO2 compressed gas cylinders - Seven oxygen compressed gas cylinders - Seven acetylene compressed gas cylinders This report serves as notice that the facility must submit the following documents electronically within 30 days of this report: - Business Emergency Plan - Hazardous Materials Chemical Inventory - Site Map The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above the disclosure thresholds. If there is a change in the type or amount of chemicals that are maintained on site, please submit

KENNEDY PIPELINE CO (Continued) **S101631265**

[Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-16-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: SB 989 retest notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-25-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-26-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-05-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect granted by Kenny Rowland. Hazardous waste properly stored and identified Documentation for the latest waste oil pickup reviewed on site. Eighty-five gallons taken by Consultant Environmental Operations (CAL000037032) on 2-25-19. Approximately ten used oil filters stored on site. Emergency response/contingency plan available for review. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-05-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Martin Schwartz of Orange County Tank Testing currently performing a UST monitoring system certification. Current ICC, Veeder-Root and VMI certifications provided. Facility consists of two tanks and two UDCs. Both tank annulars are liquid filled (Veeder-Root 303 sensors). Diesel fill is direct bury. All containment sumps were free of liquid. Sensors

KENNEDY PIPELINE CO (Continued) **S101631265**

located at the low/proper areas of secondary containment. The three sump sensors and two UDC sensors are Veeder-Root 208s. Overfill prevention (flapper valves) to be measured and tested on this date. Mechanical leak detectors tested and demonstrated to be operational on this date. VMI tester box certified May 2017. Reviewed designated operator inspection reports for the past 12 months. Corrective action verbiage/documentation available for the for alarms/warnings noted during that time period. Designated operator training provided to three employees on 4-3-19. Records [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-06-2021
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the secondary containment test report for a test conducted 12/15/2020. The following components PASSED testing: Tank annular (n/a liquid-filled) Secondary piping run (1- diesel) (Failure on unleaded - see violation) Piping sump (1 - diesel) (Failure on unleaded - see violation) UDCs (2) A copy of this inspection report will be emailed to: matthewt@kennedypipeline.com

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-17-2018
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed the SB989 testing from testing done on 12/20/2017. The unleaded secondary piping, the unleaded secondary sump and unleaded UDC all failed visually. All components of the diesel tank passed.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-25-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed copy of Secondary Containment Testing Report Form for retesting conducted on 2/3/21 on gasoline tank's (T1) secondary piping and piping sump, that failed initial tests on 12/15/20. The piping sump passed test on 2/3/21 after a new BRAVO rigid FRP clamshell repair test reducer was installed. The secondary piping did not pass test on 2/3/21 due to cracked test boot in UDC. Outstanding violation I382 regarding failure to maintain secondary containment cited in this agency's inspection report dated 1/6/21, cannot be corrected. Secondary piping failure must be repaired, retested and results be submitted to this agency within 30 days of this report.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

KENNEDY PIPELINE CO (Continued) **S101631265**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous materials and business emergency plan inspection. Jill Rejtharek, provided consent to inspect. Observed the facility and inspected hazardous materials storage. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - diesel - gasoline - propane -acetylene -welding oxygen Hazardous Materials disclosed in CERS (10516102) match what is reported on site. Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revised documents (electronically though CERS) within 30 days of change.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-17-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Routine inspection conducted this date in regards to underground storage tank, consent to enter, inspect and take photographs was given by Kenny Rowland, manager Monitoring system certification was conducted at this time. Marty Schwartz, Orange county Tank Testing performed the monitor cert. Ensure submittal of monitor cert test results within 30 days. Tester provided the following certifications: ICC Tech exp 3/4/2019 Veeder-Root tech exp 1/12/18 VMI/vaporless 6/4/2017 FE Petro exp 12/30/17 Number of UST s -2 Leak detector type - mechanical Sensor types -208, 303 UDC type -208 sensor The Veeder-Root monitoring panel showed all functions normal. Sensors and sumps in good order this date. The following documents were available for review: CUPA Business Activities form, CUPA Business Owner / Operator Identification form CUPA UST Facility Information form, CUPA UST Tank Information forms, CUPA UST monitoring plan, CUPA UST response plan, Monitoring [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-13-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: The previous violation I382 for SB989 failure of sumps was discussed this date. You are still out of violation. The facility has received quotes, indicates that Dave Lopez of Clean Air Testing was contracted with and paid last week. The facility will contact Dave Lopez to ensure that the plans are submitted in the near future. Emailed inspection report to Kenny Roland Monitoring system certification was conducted at this time. Rich Ruston, OC Tank Testing- performed the

KENNEDY PIPELINE CO (Continued) **S101631265**

monitor cert. Ensure submittal of monitor cert test results within 30 days. Tester provided the following certifications: ICC Tech 5246183 esp 4/10/19, Veeder-Root tech #a30050 exp 12/5/18 VMI/vaporless 2247 exp 5/30/19 Number of UST s -2 Sensor types -208/303 UDC type -bravo The Veeder-Root monitoring panel showed all functions normal. Sensors and sumps in good order this date.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-17-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect granted by Matt Trumble. Hazardous waste properly stored and identified. Documentation for hazardous waste pickup reviewed on site. Hazardous waste emergency response sticker completed and posted on site. No violations noted at this time.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-17-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Martin Schwartz of Orange County Tank Testing currently performing a UST monitoring system certification. Current ICC, Franklin Fueling, F E Petro, Veeder-Root, VMI and TEI certifications provided. Facility consists of two tanks and two UDCs. Both tank annulars are liquid filled. Diesel fill is direct bury. Secondary containment sumps were free of liquid. All sensors were located at the low/proper areas of secondary containment. Reviewed designated operator inspection reports for the past 12 months. Corrective action documentation available for alarms noted during that time period. Designated operator training provided to Kenny Rowland on 10-14-14. Records reviewed on site. SB 989 testing performed on 12-28-11. Reviewed and declined UST submittal in e submit because of the following: Complete all fields with red asterisks on the UST facility page. Delete the partial third tank entry for the UST tank [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-17-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct hazardous materials chemical inventory and business emergency plan inspection this date, consent to enter, inspect and take photographs was given by - Kenny Rowland, manager The HMBEP has been submitted through CERS 10516102 Employee Business Emergency Plan Training was reviewed this date. Safety/cleanup equipment is available. Hazardous materials storage area were reviewed at this time. The facility has the following hazardous materials that exceed

KENNEDY PIPELINE CO (Continued) **S101631265**

the required disclosure quantities: diesel, gasoline, acetylene and oxygen **Please note, you are required to review the submittal yearly and resubmit prior to March 1st each year. You will get communication (probably email) indicating you should go in and review and resubmit around January of each year as a reminder. Emailed copy of inspection this date.

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-18-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine inspection. Walked facility with the latest disclosed chemical inventory and site map. The following additional hazardous materials were observed in amounts stored at above disclosure threshold: > Acetylene cylinders (approximately 450 cubic feet) > Oxygen cylinders (approximately 950 cubic feet) > Paint containers (approximately 75 gallons in various one and five gallon containers) Add these hazardous materials to the disclosure. Make the following modifications to the facility site map: > Update the hazardous material storage/handling areas (building 71). > Identify electrical shut off location at building 71. > Identify natural gas shut off location at building 71. Resubmit after modifications have been performed.

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Coordinates:
Site ID: 372542
Facility Name: KENNEDY PIPELINE CO
Env Int Type Code: HMBP
Program ID: 10516102
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.592080
Longitude: -117.723580

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 16331 Construction Circle East
Affiliation City: Irvine
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92606
Affiliation Phone: ,

Affiliation Type Desc: Legal Owner
Entity Name: Trumble Properties
Entity Title: Not reported
Affiliation Address: 16331 Construction Circle East
Affiliation City: Irvine

KENNEDY PIPELINE CO (Continued) **S101631265**

Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92606
Affiliation Phone: (949) 559-8877,

Affiliation Type Desc: UST Tank Operator
Entity Name: Trumble Properties
Entity Title: Not reported
Affiliation Address: 16331 Construction Circle East
Affiliation City: Irvine
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92606
Affiliation Phone: (949) 230-7932,

Affiliation Type Desc: CUPA District
Entity Name: Orange County Env Health
Entity Title: Not reported
Affiliation Address: 1241 East Dyer RoadSuite 120
Affiliation City: Santa Ana
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92705-5611
Affiliation Phone: (714) 433-6406,

Affiliation Type Desc: Operator
Entity Name: Trumble Properties
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (949) 230-7932,

Affiliation Type Desc: UST Permit Applicant
Entity Name: MICHAEL L TRUMBLE
Entity Title: PRESIDENT
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (949) 380-8363,

Affiliation Type Desc: Environmental Contact
Entity Name: Kassey Keppler
Entity Title: Not reported
Affiliation Address: 16331 Construction Circle East
Affiliation City: Irvine
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92606
Affiliation Phone: ,

Affiliation Type Desc: UST Property Owner Name
Entity Name: Trumble Properties

KENNEDY PIPELINE CO (Continued) **S101631265**

Entity Title:	Not reported
Affiliation Address:	16331 Construction Circle E.
Affiliation City:	Irvine
Affiliation State:	Ca
Affiliation Country:	United States
Affiliation Zip:	92606
Affiliation Phone:	(949) 230-7932,
Affiliation Type Desc:	UST Tank Owner
Entity Name:	Trumble Properties
Entity Title:	Not reported
Affiliation Address:	16331 Construction E.
Affiliation City:	Irvine
Affiliation State:	Ca
Affiliation Country:	United States
Affiliation Zip:	92606
Affiliation Phone:	(949) 230-7932,
Affiliation Type Desc:	Document Preparer
Entity Name:	Kassey Keppler
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Identification Signer
Entity Name:	Jill Trumble Rejtharek
Entity Title:	Operations Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Parent Corporation
Entity Name:	KENNEDY PIPELINE CO
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

D19 **KENNEDY PIPELINE COMPANY** **RCRA NonGen / NLR** **1025865694**
South **61 ARGONAUT** **CAL000037032**
1/8-1/4 **ALISO VIEJO, CA 92656**
0.130 mi.
688 ft. **Site 5 of 5 in cluster D**

Relative: **Higher**

Actual: **422 ft.**

RCRA Listings:

Date Form Received by Agency:	19930729
Handler Name:	Kennedy Pipeline Company
Handler Address:	61 ARGONAUT
Handler City,State,Zip:	ALISO VIEJO, CA 92656-0000
EPA ID:	CAL000037032
Contact Name:	MATHEW TRUMBLE
Contact Address:	61 ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656-1423
Contact Telephone:	949-380-8363
Contact Fax:	000-000-0000
Contact Email:	MTRUMBLE@KENNEDYPIPELINE.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	61 ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656-1423
Owner Name:	Mathew Trumble
Owner Type:	Other
Operator Name:	Mathew Trumble
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	Yes
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

KENNEDY PIPELINE COMPANY (Continued) **1025865694**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20190627
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: MATHEW TRUMBLE	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	61 ARGONAUT
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656-1423
Owner/Operator Telephone:	949-380-8363
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: MATHEW TRUMBLE	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	61 ARGONAUT
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656-1423
Owner/Operator Telephone:	949-380-8363
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	19930729
Handler Name: KENNEDY PIPELINE COMPANY	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	Not reported
Recognized Trader Exporter:	Not reported
Spent Lead Acid Battery Importer:	Not reported
Spent Lead Acid Battery Exporter:	Not reported
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

KENNEDY PIPELINE COMPANY (Continued) **1025865694**

List of NAICS Codes and Descriptions:
NAICS Code: 23492
NAICS Description: POWER AND COMMUNICATION TRANSMISSION LINE CONSTRUCTION

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

E20 **ALISO VIEJO TOWING** **RCRA NonGen / NLR** **1024872919**
SSW **31 ARGONAUT** **CAL000441567**
1/8-1/4 **ALISO VIEJO, CA 92656**
0.131 mi.
693 ft. **Site 3 of 4 in cluster E**

Relative:
Higher

Actual:
471 ft.

RCRA Listings:

Date Form Received by Agency:	20181206
Handler Name:	Aliso Viejo Towing
Handler Address:	31 ARGONAUT
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAL000441567
Contact Name:	VICTOR JIMENEZ
Contact Address:	31 ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	714-360-8068
Contact Fax:	949-273-6578
Contact Email:	VICTOR@ALISOVIEJOTOWING.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	31 ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Victor Jimenez
Owner Type:	Other
Operator Name:	Victor Jimenez
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes

ALISO VIEJO TOWING (Continued) **1024872919**

Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20181220
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: VICTOR JIMENEZ	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	31 ARGONAUT
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	949-360-8068
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: VICTOR JIMENEZ	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	31 ARGONAUT
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	714-360-8068
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

ALISO VIEJO TOWING (Continued) **1024872919**

Historic Generators:
- Receive Date: 20181206
- Handler Name: ALISO VIEJO TOWING
- Federal Waste Generator Description: Not a generator, verified
- State District Owner: Not reported
- Large Quantity Handler of Universal Waste: No
- Recognized Trader Importer: No
- Recognized Trader Exporter: No
- Spent Lead Acid Battery Importer: No
- Spent Lead Acid Battery Exporter: No
- Current Record: Yes
- Non Storage Recycler Activity: Not reported
- Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
- NAICS Code: 56299
- NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
- Violations: No Violations Found

Evaluation Action Summary:
- Evaluations: No Evaluations Found

E21 **ALISO VIEJO TOWING AND RECOVERY** **CERS HAZ WASTE** **S123522862**
SSW **31 ARGONAUT** **CERS** **N/A**
1/8-1/4 **ALISO VIEJO, CA 92656**
0.131 mi.
693 ft. **Site 4 of 4 in cluster E**

Relative: Higher
Actual: 471 ft.

CERS HAZ WASTE:
- Name: ALISO VIEJO TOWING AND RECOVERY
- Address: 31 ARGONAUT
- City,State,Zip: ALISO VIEJO, CA 92656
- Site ID: 445757
- CERS ID: 10777825
- CERS Description: Hazardous Waste Generator

CERS:
- Name: ALISO VIEJO TOWING AND RECOVERY
- Address: 31 ARGONAUT
- City,State,Zip: ALISO VIEJO, CA 92656
- Site ID: 445757
- CERS ID: 10777825
- CERS Description: Chemical Storage Facilities

Violations:
- Site ID: 445757
- Site Name: ALISO VIEJO TOWING AND RECOVERY
- Violation Date: 09-09-2021
- Citation: 22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)
- Violation Description: Failure to keep a copy of each properly signed manifest for at least three years from the date the waste was accepted by the initial transporter. The manifest signed at the time the waste was accepted

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

for transport shall be kept until receiving a signed copy from the designated facility which received the waste.

Violation Notes: Accumulation period for storing waste absorbent has been exceeded since drum is full, "accumulation start date" is not label and there is no manifest documenting disposal of this waste in the last three years. Waste absorbent must be disposed of by registered hauler within 30 days of this inspection and copy of manifest be provided to this agency.
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Site ID: 445757
Site Name: ALISO VIEJO TOWING AND RECOVERY
Violation Date: 07-11-2018
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.
Violation Notes: Returned to compliance on 12/03/2018. Complete all three sections in CERS for your site (business activities, materials, map and business emergency plan) and submit for review within 30 days. The violation will be abated when the submittal is accepted.
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Site ID: 445757
Site Name: ALISO VIEJO TOWING AND RECOVERY
Violation Date: 07-12-2018
Citation: 22 CCR 12 66262.11 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.11
Violation Description: Failure to determine if wastes generated are hazardous waste by using generator knowledge or applying testing method.
Violation Notes: Returned to compliance on 11/13/2018. The waste absorbent waste from below wrecked cars is presumed to be hazardous by this agency. Manage this waste as hazardous waste unless you can prove to this agency that the waste is non-hazardous by submitting to a certified lab for analysis. Because the absorbent waste is obtained from numerous locations when you pick up the vehicles, determining that it is not a hazardous waste is problematic. You must bring this waste back to your site and dispose of it as hazardous waste or if it is not saturated, you may continue to use the absorbent at your location until you dispose of it as a hazardous waste through your hazardous waste transporter. Until you have proven this waste absorbent is not hazardous, the waste absorbent generated at the pickup site and in the shop, must be managed as a hazardous waste. Obtain a lidded drum and label it as a hazardous waste- a label was left during the inspection.
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Site ID: 445757
Site Name: ALISO VIEJO TOWING AND RECOVERY
Violation Date: 07-12-2018
Citation: 22 CCR 15 66265.173 - California Code of Regulations, Title 22,

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

	Chapter 15, Section(s) 66265.173
Violation Description:	Failure to meet the following container management requirements: (a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste. (b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.
Violation Notes:	Returned to compliance on 11/13/2018. OBSERVATION: waste absorbent and waste oil filters are stored in sawed off plastic drums. All hazardous waste containers shall be closed at all times except when adding or removing waste. CORRECTIVE ACTION: Immediately obtain drums that can be maintained lidded, and close these containers and ensure all hazardous waste containers are closed when not adding or removing waste. Send me pictures of the labeled and closed waste absorbent and waste oil filter containers to abate the violation within 30 days.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,
Site ID:	445757
Site Name:	ALISO VIEJO TOWING AND RECOVERY
Violation Date:	09-09-2021
Citation:	HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description:	Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.
Violation Notes:	Training in hazardous materials management has not been provided for employee(s). Training that includes safety procedures in the event of a release or threatened release of hazardous materials, must be conducted within 30 days of this inspection and records be submitted to this agency.
Violation Division:	Orange County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS,
Site ID:	445757
Site Name:	ALISO VIEJO TOWING AND RECOVERY
Violation Date:	07-12-2018
Citation:	HSC 6.5 25189.5(a),25201(a) - California Health and Safety Code, Chapter 6.5, Section(s) 25189.5(a),25201(a)
Violation Description:	Failure to dispose of hazardous waste at a facility which has a permit from DTSC or disposing of hazardous waste at any point which is not authorized according to HSC 6.5.
Violation Notes:	Returned to compliance on 11/13/2018. Immediately discontinue disposing of waste absorbent from both this site and crash sites in either the trash or in the cars. Start accumulating the waste for disposal as a hazardous waste. To abate the violation, send me a picture of the labeled and lidded waste absorbent drum within 30 days.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,
Site ID:	445757
Site Name:	ALISO VIEJO TOWING AND RECOVERY

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

Violation Date:	07-12-2018
Citation:	22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)
Violation Description:	Failure to keep a copy of each properly signed manifest for at least three years from the date the waste was accepted by the initial transporter. The manifest signed at the time the waste was accepted for transport shall be kept until receiving a signed copy from the designated facility which received the waste.
Violation Notes:	Returned to compliance on 11/13/2018. OBSERVATION: Copies of hazardous waste disposal records] were not found on site. Hazardous waste generators shall retain copies of all manifests signed off by the disposal facility and all receipts used in a consolidated manifesting procedure on site for three years and have them readily available for review. CORRECTIVE ACTION: Immediately locate a copy of all manifests and receipts for the last three years, maintain them on site, and submit copies to the CUPA by August 15 to abate the violation.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,
Site ID:	445757
Site Name:	ALISO VIEJO TOWING AND RECOVERY
Violation Date:	07-12-2018
Citation:	22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description:	Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes:	Returned to compliance on 11/13/2018. OBSERVATION: The waste oil drums must be appropriately labeled. All hazardous waste containers shall be marked with the following information: 1) the words Hazardous Waste ; 2) name and address of generator; 3) hazardous properties; 4) physical state; 5) composition (contents); 6) accumulation start date. In addition, your waste oil filter drum must be labeled "used drained oil filters" with the date of accumulation. CORRECTIVE ACTION: Immediately label these containers and ensure that all hazardous waste containers are marked with all the required information. I have left labels to be affixed to the waste oil drums, put them on the drums and label the filter drum as listed above. Send me a picture of the labeled waste oil drums to abate the violation.
Violation Division:	Orange County Environmental Health
Violation Program:	HW
Violation Source:	CERS,
Site ID:	445757
Site Name:	ALISO VIEJO TOWING AND RECOVERY
Violation Date:	07-11-2018
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit a site map with all required content.
Violation Notes:	Returned to compliance on 12/03/2018. Complete the site map I emailed or the one on the CERS site and upload to CERS and submit for review within 30 days. The violation will be abated when the submittal is

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

accepted.
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Site ID: 445757
Site Name: ALISO VIEJO TOWING AND RECOVERY
Violation Date: 09-09-2021
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Description: Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.
Violation Notes: Please be advised that Hazardous Materials Business Plan (HMBP) must be certified annually by March 1st of every year. HMBP for this facility have not been reviewed annually and electronically certified that they are complete, accurate, and up-to-date. HMBP documents must be electronically certified within 30 days of this inspection by going to California Environmental Reporting System (CERS) at https://cers.calepa.ca.gov/
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Site ID: 445757
Site Name: ALISO VIEJO TOWING AND RECOVERY
Violation Date: 07-11-2018
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.
Violation Notes: Returned to compliance on 12/03/2018. Complete the Emergency Response plan I emailed or the one on the CERS site and upload to CERS and submit for review within 30 days. The violation will be abated when the submittal is accepted.
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 12-10-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for follow up inspection to review manifest for waste absorbent that was stored on site beyond permissible accumulation period and correct outstanding violation cited during inspection conducted on 9/9/21. Mr. Maldonado stated that waste absorbent is scheduled to be picked up today and copy of manifest will be submitted to this agency. Please be advised that copy of manifest must be submitted to this agency by 12/27/21 to avoid further enforcement action.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

Eval General Type: Other/Unknown
Eval Date: 12-10-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site to conduct follow up inspection to discuss and correct the following outstanding violations cited during routine inspection conducted on 9/9/21: - Violation I239 regarding failure to provide hazardous materials training for employees. Violation cannot be corrected since training has not been conducted. - Violation I463 regarding failure to annually review and electronically certify that Hazardous Materials Business Plan (HMBP) is complete, accurate and up-to date. Violation cannot be corrected since documents have not been submitted to CERS. Violations must be complied with by 12/27/21 to avoid further enforcement action. Please be advised that second or subsequent re-inspections may be conducted at an hourly rate. Please refer to HCA Environmental Health Division, Hazardous Materials Management Program Fee Schedule at https://www.ochealthinfo.com/about-hca/public-health-services/environmental-health-services/resources/fees-services for more [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-09-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site to conduct hazardous materials chemical inventory and business emergency plan inspection. Jorge Maldonado granted consent to conduct inspection. I walked through facility and inspected hazardous material storage areas throughout the shop. There has been changes in types and/or volumes of the hazardous material stored on site since last inspection or previous reporting period. Facility is now storing absorbent, Solid A Sorb (Diotamceous Earth) at disclosure threshold. Please report/submit inventory form for this material to CERS within 30 days of this inspection. The 55 gallons of new motor oil and 55 gallons of diesel engine oil are exempt from reporting since volume of each type of oil does not exceed 55 gallons and total volume of all types of oil does not exceeds 275 gallons. Facility stores the following hazardous materials at disclosure threshold: - 40 gallons of propane - 110 gallons of Waste Oil - approximately 6000 pounds of Solid A Sorb [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-09-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site to conduct routine hazardous waste inspection. Jorge Maldonado granted consent to conduct inspection. I walked through facility, perimeter and inspected hazardous waste storage areas in the shop. I did not observe any hazardous waste in municipal trash or trash cans throughout the shop. Waste oil (2), used oil filter (1) and waste absorbent (1) drums are stored closed and labeled. Please be advised that "accumulation start date" must be written on the label(s)

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

when there is 27 gallons or 220 pound of hazardous waste stored on site, then have all waste hauled off site by a registered transporter for proper disposal within 180 days of that date in CA or 270 days if disposed outside of CA. Manifests were reviewed. Accumulation period for storing waste absorbent has been exceeded since drum is full, "accumulation start date" is not label and there is no manifest documenting disposal of this waste in the last three years. Waste absorbent must be disposed [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-11-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a new hazardous materials chemical inventory and business emergency plan inspection this date, consent to enter, inspect and take photographs was given by - Eddie Gueva Hazardous materials storage area were reviewed at this time. The facility has the following hazardous materials that exceed the required disclosure quantities: - 110 gallons of used oil - 40 gallons of propane - 330 gallons of DEF *For your reference, CAS # 64742-57-0, and hazard category combustible IIIB is used for waste/used oil. Use federal hazard category flammable and OHH The facility is required (and is notified) to electronically submit the following documents within 30 days of this inspection: - Business Activities form - Owner/Operator Identification form - Hazardous Material Chemical Inventory forms - Facility Site Map - Business Emergency Plan The above documents can be electronically submitted by going to http://cers.calepa.ca.gov/ and requesting a [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-11-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: New hazardous waste generator Aliso Viejo Towing and Recovery Inc, 31 Argonaut, Aliso Viejo, CA Emailed copy of report to owner- Victor and to Eddie Gueva

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Coordinates:
Site ID: 445757
Facility Name: ALISO VIEJO TOWING AND RECOVERY
Env Int Type Code: HMBP
Program ID: 10777825
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.592020
Longitude: -117.726130

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	Orange County Env Health
Entity Title:	Not reported
Affiliation Address:	1241 East Dyer RoadSuite 120
Affiliation City:	Santa Ana
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92705-5611
Affiliation Phone:	(714) 433-6406,

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	31 Argonaut
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

Affiliation Type Desc:	Identification Signer
Entity Name:	Victor Jimenez
Entity Title:	owner
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Operator
Entity Name:	Victor Jimenez
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(949) 360-8068,

Affiliation Type Desc:	Environmental Contact
Entity Name:	EDDIE CUEVA
Entity Title:	Not reported
Affiliation Address:	31 Argonaut
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,

Affiliation Type Desc:	Legal Owner
Entity Name:	Victor Jimenez
Entity Title:	Not reported
Affiliation Address:	31 Argonaut
Affiliation City:	Aliso Viejo
Affiliation State:	CA

ALISO VIEJO TOWING AND RECOVERY (Continued) **S123522862**

Affiliation Country:	United States
Affiliation Zip:	92656
Affiliation Phone:	(949) 360-8068,
Affiliation Type Desc:	Document Preparer
Entity Name:	EDDIE CUEVA
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Parent Corporation
Entity Name:	ALISO VIEJO TOWING AND RECOVERY
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

22
SSW
1/8-1/4
0.135 mi.
712 ft.

Relative:
Higher

Actual:
463 ft.

PARA TECH COATING INC
35 ARGONAUT
ALISO VIEJO, CA 92656

RCRA-SQG **1001815610**
CERS HAZ WASTE **CAR000057828**
FINDS
ECHO
HWTS
HAZNET
CERS

RCRA Listings:

Date Form Received by Agency:	19991013
Handler Name:	Para Tech Coating Inc
Handler Address:	35 ARGONAUT
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAR000057828
Contact Name:	LUIS SORIANO
Contact Address:	35 ARGONAUT
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	949-855-8010
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	09
Land Type:	Private
Federal Waste Generator Description:	Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	35 ARGONAUT
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Jeffrey Stewart

PARA TECH COATING INC (Continued) **1001815610**

Owner Type:	Private
Operator Name:	Not reported
Operator Type:	Not reported
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20021007
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: JEFFREY STEWART	
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	35 ARGONAUT

PARA TECH COATING INC (Continued) **1001815610**

Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 949-855-8010
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19991013
Handler Name: PARA TECH COATING INC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

CERS HAZ WASTE:
Name: PARA TECH COATING INC
Address: 35 ARGONAUT
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 418870
CERS ID: 10548292
CERS Description: Hazardous Waste Generator

FINDS:
Registry ID: 110002930437

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.
California's Hazardous Waste Tracking System Data Mart (HWTS-DATAMART) provides information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

PARA TECH COATING INC (Continued) **1001815610**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1001815610
Registry ID:	110002930437
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002930437
Name:	PARA TECH COATING INC
Address:	35 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656

HWTS:

Name:	PARA TECH COATING
Address:	35 ARGONAUT
Address 2:	Not reported
City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAR000057828
Inactive Date:	Not reported
Create Date:	04/26/2000
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	35 ARGONAUT A-1
Mailing Address 2:	Not reported
Mailing City,State,Zip:	ALISO VIEJO, CA 926564151
Owner Name:	PAUL STEWART
Owner Address:	35 ARGONAUT
Owner Address 2:	Not reported
Owner City,State,Zip:	ALISO VIEJO, CA 926564151
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	PATRICIA LANGRAPHI
Contact Address:	35 ARGONAUT A-1
Contact Address 2:	Not reported
City,State,Zip:	ALISO VIEJO, CA 92656
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Active
Facility Type:	PERMANENT
Category:	FEDERAL
Latitude:	33.59196
Longitude:	-117.72548

NAICS:

EPA ID:	CAR000057828
Create Date:	2002-03-14 16:36:30.000
NAICS Code:	3328
NAICS Description:	Coating, Engraving, Heat Treating, and Allied Activities
Issued EPA ID Date:	2000-04-26 00:00:00
Inactive Date:	Not reported
Facility Name:	PARA TECH COATING INC
Facility Address:	35 ARGONAUT
Facility Address 2:	Not reported
Facility City:	ALISO VIEJO
Facility County:	Not reported
Facility State:	CA
Facility Zip:	926564151

PARA TECH COATING INC (Continued) **1001815610**

EPA ID:	CAR000057828
Create Date:	2007-04-03 13:26:14.080
NAICS Code:	339914
NAICS Description:	Costume Jewelry and Novelty Manufacturing
Issued EPA ID Date:	2000-04-26 00:00:00
Inactive Date:	Not reported
Facility Name:	PARA TECH COATING INC
Facility Address:	35 ARGONAUT
Facility Address 2:	Not reported
Facility City:	ALISO VIEJO
Facility County:	Not reported
Facility State:	CA
Facility Zip:	926564151

HAZNET:

Name:	PARA TECH COATING
Address:	35 ARGONAUT
Address 2:	Not reported
City,State,Zip:	ALISO VIEJO, CA 926564151
Contact:	PATRICIA LANGRAPHI
Telephone:	9499008860
Mailing Name:	Not reported
Mailing Address:	35 ARGONAUT A-1
Year:	2021
Gepaid:	CAR000057828
TSD EPA ID:	NVT330010000
CA Waste Code:	181 - Other inorganic solid waste
Disposal Method:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	2.4
Year:	2020
Gepaid:	CAR000057828
TSD EPA ID:	NVT330010000
CA Waste Code:	181 - Other inorganic solid waste
Disposal Method:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.6
Year:	2020
Gepaid:	CAR000057828
TSD EPA ID:	CAT080013352
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.19
Year:	2019
Gepaid:	CAR000057828
TSD EPA ID:	CAT080013352
CA Waste Code:	221 - Waste oil and mixed oil
Disposal Method:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.00000

PARA TECH COATING INC (Continued) **1001815610**

Year: 2018
Gepaid: CAR000057828
TSD EPA ID: MXC130619001
CA Waste Code: 214 - Unspecified solvent mixture
Disposal Method: H020 - Solvents Recovery
Tons: 2.12400

Year: 2018
Gepaid: CAR000057828
TSD EPA ID: MXC130619001
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H020 - Solvents Recovery
Tons: 1.39800

Year: 2018
Gepaid: CAR000057828
TSD EPA ID: CAT080013352
CA Waste Code: 221 - Waste oil and mixed oil
Disposal Method: H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.00000

Year: 2017
Gepaid: CAR000057828
TSD EPA ID: MXC130619001
CA Waste Code: 214 - Unspecified solvent mixture
Disposal Method: H020 - Solvents Recovery
Tons: 0.396

Year: 2017
Gepaid: CAR000057828
TSD EPA ID: CAT080013352
CA Waste Code: 221 - Waste oil and mixed oil
Disposal Method: H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.589

Year: 2017
Gepaid: CAR000057828
TSD EPA ID: MXC130619001
CA Waste Code: 214 - Unspecified solvent mixture
Disposal Method: H020 - Solvents Recovery
Tons: 2.736

Click this hyperlink while viewing on your computer to access
44 additional CA HAZNET: record(s) in the EDR Site Report.

Additional Info:
Year: 2021
Gen EPA ID: CAR000057828

Shipment Date: 7/23/2020
Creation Date: 8/14/2020
Receipt Date: 7/28/2020
Manifest ID: 020952242JJK
Trans EPA ID: CAR000172189

PARA TECH COATING INC (Continued) **1001815610**

Trans Name:	AMBERWICK CORPORATION
Trans 2 EPA ID:	CAR000045963
Trans 2 Name:	ARO TRUCKING INC
TSDF EPA ID:	NVT330010000
Trans Name:	US ECOLOGY NEVADA, INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	Not reported
Meth Code:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Quantity Tons:	0.7
Waste Quantity:	1400
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/24/2020
Creation Date:	3/18/2020
Receipt Date:	3/2/2020
Manifest ID:	021174458JJK
Trans EPA ID:	CAR000129759
Trans Name:	HTS ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	WORLD OIL RECYCLING
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.19
Waste Quantity:	50
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/5/2020
Creation Date:	10/17/2020
Receipt Date:	10/13/2020
Manifest ID:	022117985JJK
Trans EPA ID:	CAR000172189
Trans Name:	AMBERWICK CORPORATION
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	NVT330010000
Trans Name:	US ECOLOGY NEVADA, INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: Not reported
Meth Code: H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Quantity Tons: 0.9
Waste Quantity: 1800
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2020
Gen EPA ID: CAR000057828

Shipment Date: 7/23/2020
Creation Date: 8/14/2020
Receipt Date: 7/28/2020
Manifest ID: 020952242JJK
Trans EPA ID: CAR000172189
Trans Name: AMBERWICK CORPORATION
Trans 2 EPA ID: CAR000045963
Trans 2 Name: ARO TRUCKING INC
TSDF EPA ID: NVT330010000
Trans Name: US ECOLOGY NEVADA, INC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: Not reported
Meth Code: H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Quantity Tons: 0.7
Waste Quantity: 1400
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 2/24/2020
Creation Date: 3/18/2020
Receipt Date: 3/2/2020
Manifest ID: 021174458JJK
Trans EPA ID: CAR000129759
Trans Name: HTS ENVIRONMENTAL SERVICES
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAT080013352
Trans Name: WORLD OIL RECYCLING
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H039 - Other Recovery Of Reclamation For Reuse Including Acid

PARA TECH COATING INC (Continued) **1001815610**

	Regeneration, Organics Recovery Ect
Quantity Tons:	0.19
Waste Quantity:	50
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/5/2020
Creation Date:	10/17/2020
Receipt Date:	10/13/2020
Manifest ID:	022117985JJK
Trans EPA ID:	CAR000172189
Trans Name:	AMBERWICK CORPORATION
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	NVT330010000
Trans Name:	US ECOLOGY NEVADA, INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	Not reported
Meth Code:	H132 - Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Quantity Tons:	0.9
Waste Quantity:	1800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Detail Two:

Year:	2020
EM Manifest ID:	79d17735-63cf-4875-b7ba-f8150d01f662
Shipment Date:	7/23/2020
Receipt Date:	7/28/2020
Manifest Number:	020952242JJK
Generator EPA ID:	CAR000057828
Name:	PARA TECH COATING INC
Address:	35 ARGONAUT
Address 2:	Not reported
City:	ALISO VIEJO
Zip:	92656
Telephone:	626-961-9326
Contact:	Not reported
Contact Telephone:	626-961-9326
Transporter 1 EPA ID:	CAR000172189
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000045963
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NVT330010000
TSDF Name:	US ECOLOGY NEVADA, INC
TSDF Address 1:	HWY 95 11 MI S OF BEATTY

PARA TECH COATING INC (Continued) **1001815610**

TSDF Address 2: Not reported
TSDF City: BEATTY
TSDF Zip: 89003
TSDF Telephone: 800-839-3975

State:
Year: 2020
EM Manifest ID: 79d17735-63cf-4875-b7ba-f8150d01f662
Generator EPA ID: CAR000057828
Shipment Date: 2020-07-23
Manifest Number: 020952242JJK
Line Number: 1
Method Code: H132
Quantity Tons: 0.70000
Quantity Waste: 1400.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: Metal drums, barrels, kegs
Quantity Type: Pounds
State Code: 181

Detail Two:
Year: 2019
EM Manifest ID: 019173508JJK20180807_D_1
Shipment Date: 8/7/2018
Receipt Date: 8/10/2018
Manifest Number: 019173508JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COATING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported
Telephone: Not reported
Contact: Not reported
Contact Telephone: Not reported
Transporter 1 EPA ID: CAR000129759
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: CAR000194217
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: MXC130619001
TSDF Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1: Not reported
TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2019
EM Manifest ID: 019173508JJK20180807_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2018-08-07
Manifest Number: 019173508JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.54000

PARA TECH COATING INC (Continued) **1001815610**

Quantity Waste:	150.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

State:

Year:	2019
EM Manifest ID:	019173508JJK20180807_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2018-08-07
Manifest Number:	019173508JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.54000
Quantity Waste:	150.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
State Code:	214

Year:	2019
EM Manifest ID:	018408633JJK20180705_D_1
Shipment Date:	7/5/2018
Receipt Date:	7/12/2018
Manifest Number:	018408633JJK
Generator EPA ID:	CAR000057828
Name:	PARA TECH COATING INC
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	CAR000129759
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000194217
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	MXC130619001
TSDF Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2019
EM Manifest ID:	018408633JJK20180705_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2018-07-05
Manifest Number:	018408633JJK
Line Number:	1

PARA TECH COATING INC (Continued) **1001815610**

Method Code:	H020
Quantity Tons:	0.39600
Quantity Waste:	110.000000
Quantity Unit:	G
Number of Containers:	2
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

State:

Year:	2019
EM Manifest ID:	018408633JJK20180705_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2018-07-05
Manifest Number:	018408633JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.39600
Quantity Waste:	110.000000
Quantity Unit:	G
Number of Containers:	2
Type of Container:	NULL
Quantity Type:	NULL
State Code:	214

Detail Two:

Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Shipment Date:	9/26/2017
Receipt Date:	10/2/2017
Manifest Number:	017524486JJK
Generator EPA ID:	CAR000057828
Name:	PARA TECH COATING INC
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	CAR000129759
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000194217
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	MXC130619001
TSDF Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Generator EPA ID:	CAR000057828

PARA TECH COATING INC (Continued) **1001815610**

Shipment Date:	2017-09-26
Manifest Number:	017524486JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.03750
Quantity Waste:	75.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-26
Manifest Number:	017524486JJK
Line Number:	2
Method Code:	H020
Quantity Tons:	0.01250
Quantity Waste:	25.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-26
Manifest Number:	017524486JJK
Line Number:	2
Method Code:	H020
Quantity Tons:	0.01250
Quantity Waste:	25.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D018
Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-26
Manifest Number:	017524486JJK
Line Number:	2
Method Code:	H020
Quantity Tons:	0.01250
Quantity Waste:	25.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	F003

PARA TECH COATING INC (Continued) **1001815610**

State:

Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-26
Manifest Number:	017524486JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.03750
Quantity Waste:	75.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	331

Year:	2018
EM Manifest ID:	017524486JJK20170926_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-26
Manifest Number:	017524486JJK
Line Number:	2
Method Code:	H020
Quantity Tons:	0.01250
Quantity Waste:	25.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	343

Year:	2018
EM Manifest ID:	017524359JJK20170912_D_1
Shipment Date:	9/12/2017
Receipt Date:	9/22/2017
Manifest Number:	017524359JJK
Generator EPA ID:	CAR000057828
Name:	PARA TECH COATING INC
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	CAR000129759
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000163824
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	MXC130619001
TSDF Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Federal:

Year:	2018
EM Manifest ID:	017524359JJK20170912_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-12
Manifest Number:	017524359JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.59400
Quantity Waste:	165.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

State:

Year:	2018
EM Manifest ID:	017524359JJK20170912_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-09-12
Manifest Number:	017524359JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.59400
Quantity Waste:	165.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
State Code:	214

Year:	2018
EM Manifest ID:	017523835JJK20170714_D_1
Shipment Date:	7/14/2017
Receipt Date:	7/21/2017
Manifest Number:	017523835JJK
Generator EPA ID:	CAR000057828
Name:	PARA TECH COATING INC
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	CAR000129759
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000163824
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	MXC130619001
TSDF Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 017523835JJK20170714_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-07-14
Manifest Number: 017523835JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.79200
Quantity Waste: 220.000000
Quantity Unit: G
Number of Containers: 4
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 017523835JJK20170714_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-07-14
Manifest Number: 017523835JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.79200
Quantity Waste: 220.000000
Quantity Unit: G
Number of Containers: 4
Type of Container: NULL
Quantity Type: NULL
State Code: 214

Year: 2018
EM Manifest ID: 018407313JJK20180607_D_1
Shipment Date: 6/7/2018
Receipt Date: 6/13/2018
Manifest Number: 018407313JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COATING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported
Telephone: Not reported
Contact: Not reported
Contact Telephone: Not reported
Transporter 1 EPA ID: CAR000129759
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: CAR000194217
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: MXC130619001
TSDF Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1: Not reported

PARA TECH COATING INC (Continued) **1001815610**

TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 018407313JJK20180607_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2018-06-07
Manifest Number: 018407313JJK
Line Number: 1
Method Code: H020
Quantity Tons: 1.18800
Quantity Waste: 330.000000
Quantity Unit: G
Number of Containers: 6
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 018407313JJK20180607_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2018-06-07
Manifest Number: 018407313JJK
Line Number: 1
Method Code: H020
Quantity Tons: 1.18800
Quantity Waste: 330.000000
Quantity Unit: G
Number of Containers: 6
Type of Container: NULL
Quantity Type: NULL
State Code: 214

Year: 2018
EM Manifest ID: 016687182JJK20170512_D_1
Shipment Date: 5/12/2017
Receipt Date: 5/17/2017
Manifest Number: 016687182JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COAING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported
Telephone: Not reported
Contact: Not reported
Contact Telephone: Not reported
Transporter 1 EPA ID: CAR000129759
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: CAR000194217
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: MXC130619001

PARA TECH COATING INC (Continued) **1001815610**

TSDF Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1: Not reported
TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 016687182JJK20170512_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-05-12
Manifest Number: 016687182JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.59400
Quantity Waste: 165.000000
Quantity Unit: G
Number of Containers: 3
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 016687182JJK20170512_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-05-12
Manifest Number: 016687182JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.59400
Quantity Waste: 165.000000
Quantity Unit: G
Number of Containers: 3
Type of Container: NULL
Quantity Type: NULL
State Code: 214

Year: 2018
EM Manifest ID: 016686763JJK20170405_D_1
Shipment Date: 4/5/2017
Receipt Date: 4/19/2017
Manifest Number: 016686763JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COATING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported
Telephone: Not reported
Contact: Not reported
Contact Telephone: Not reported
Transporter 1 EPA ID: CAR000129759
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: CAR000194217

PARA TECH COATING INC (Continued) **1001815610**

Transporter 2 Emergency Number: Not reported
TSDF EPA ID: MXC130619001
TSDF Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1: Not reported
TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 016686763JJK20170405_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-04-05
Manifest Number: 016686763JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.39600
Quantity Waste: 110.000000
Quantity Unit: G
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 016686763JJK20170405_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-04-05
Manifest Number: 016686763JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.39600
Quantity Waste: 110.000000
Quantity Unit: G
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
State Code: 214

Year: 2018
EM Manifest ID: 018408264JJK20180410_D_1
Shipment Date: 4/10/2018
Receipt Date: 4/16/2018
Manifest Number: 018408264JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COATING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported
Telephone: Not reported
Contact: Not reported
Contact Telephone: Not reported
Transporter 1 EPA ID: CAR000129759

PARA TECH COATING INC (Continued) **1001815610**

Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: CAR000163824
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: MXC130619001
TSDF Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1: Not reported
TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 018408264JJK20180410_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2018-04-10
Manifest Number: 018408264JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.12750
Quantity Waste: 255.000000
Quantity Unit: P
Number of Containers: 5
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 018408264JJK20180410_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2018-04-10
Manifest Number: 018408264JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.12750
Quantity Waste: 255.000000
Quantity Unit: P
Number of Containers: 5
Type of Container: NULL
Quantity Type: NULL
State Code: 331

Year: 2018
EM Manifest ID: 016700271JJK20170217_D_1
Shipment Date: 2/17/2017
Receipt Date: 2/24/2017
Manifest Number: 016700271JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COATING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported
Telephone: Not reported
Contact: Not reported

PARA TECH COATING INC (Continued) **1001815610**

Contact Telephone: Not reported
Transporter 1 EPA ID: CAR000129759
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: CAR000194217
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: MXC130619001
TSDF Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1: Not reported
TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 016700271JJK20170217_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-02-17
Manifest Number: 016700271JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.45870
Quantity Waste: 110.000000
Quantity Unit: G
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 016700271JJK20170217_D_1
Generator EPA ID: CAR000057828
Shipment Date: 2017-02-17
Manifest Number: 016700271JJK
Line Number: 1
Method Code: H020
Quantity Tons: 0.45870
Quantity Waste: 110.000000
Quantity Unit: G
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
State Code: 214

Year: 2018
EM Manifest ID: 018407758JJK20180213_D_1
Shipment Date: 2/13/2018
Receipt Date: 2/16/2018
Manifest Number: 018407758JJK
Generator EPA ID: CAR000057828
Name: PARA TECH COATING INC
Address: Not reported
Address 2: Not reported
City: Not reported
Zip: Not reported

PARA TECH COATING INC (Continued) **1001815610**

Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	CAR000129759
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000194217
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	MXC130619001
TSDF Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	018407758JJK20180213_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2018-02-13
Manifest Number:	018407758JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.90750
Quantity Waste:	275.000000
Quantity Unit:	G
Number of Containers:	5
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

State:

Year:	2018
EM Manifest ID:	018407758JJK20180213_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2018-02-13
Manifest Number:	018407758JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.90750
Quantity Waste:	275.000000
Quantity Unit:	G
Number of Containers:	5
Type of Container:	NULL
Quantity Type:	NULL
State Code:	331

Year:	2018
EM Manifest ID:	017525416JJK20171109_D_1
Shipment Date:	11/9/2017
Receipt Date:	11/29/2017
Manifest Number:	017525416JJK
Generator EPA ID:	CAR000057828
Name:	PARA TECH COATING INC
Address:	Not reported
Address 2:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	CAR000129759
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000163824
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	MXC130619001
TSDF Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	017525416JJK20171109_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-11-09
Manifest Number:	017525416JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.72600
Quantity Waste:	220.000000
Quantity Unit:	G
Number of Containers:	4
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

State:

Year:	2018
EM Manifest ID:	017525416JJK20171109_D_1
Generator EPA ID:	CAR000057828
Shipment Date:	2017-11-09
Manifest Number:	017525416JJK
Line Number:	1
Method Code:	H020
Quantity Tons:	0.72600
Quantity Waste:	220.000000
Quantity Unit:	G
Number of Containers:	4
Type of Container:	NULL
Quantity Type:	NULL
State Code:	331

Additional Info:

Year:	2017
Gen EPA ID:	CAR000057828
Shipment Date:	20171109
Creation Date:	6/13/2018 18:30:34
Receipt Date:	20171113

PARA TECH COATING INC (Continued) **1001815610**

Manifest ID:	017525415JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO/KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.209
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20171109
Creation Date:	10/30/2018 18:30:15
Receipt Date:	20171129
Manifest ID:	017525416JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.726
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20170926
Creation Date:	11/8/2018 18:30:45
Receipt Date:	20171002
Manifest ID:	017524486JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.0375
Waste Quantity:	75
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170926
Creation Date:	11/8/2018 18:30:45
Receipt Date:	20171002
Manifest ID:	017524486JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	F003
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.0125
Waste Quantity:	25
Quantity Unit:	P
Additional Code 1:	D018
Additional Code 2:	D001
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170912
Creation Date:	7/24/2018 18:30:51
Receipt Date:	20170922
Manifest ID:	017524359JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.594
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170912
Creation Date:	5/30/2018 18:34:06
Receipt Date:	20170918
Manifest ID:	017524358JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO/KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.38
Waste Quantity:	100
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	7/18/2018 18:30:10
Receipt Date:	20170721
Manifest ID:	017523835JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.792
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170512
Creation Date:	7/21/2018 18:30:10
Receipt Date:	20170517
Manifest ID:	016687182JJK

PARA TECH COATING INC (Continued) **1001815610**

Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY-RECYCLING-INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.594
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20170405
Creation Date:	5/11/2018 18:34:42
Receipt Date:	20170419
Manifest ID:	016686763JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.396
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20170217
Creation Date:	5/10/2018 18:30:36
Receipt Date:	20170224
Manifest ID:	016700271JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture

PARA TECH COATING INC (Continued) **1001815610**

RCRA Code: D001
Meth Code: H020 - Solvents Recovery
Quantity Tons: 0.396
Waste Quantity: 110
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Additional Info:
Year: 2016
Gen EPA ID: CAR000057828

Shipment Date: 20150929
Creation Date: 5/4/2016 22:15:08
Receipt Date: 20151007
Manifest ID: 014854329JJK
Trans EPA ID: CAR000129759
Trans Name: HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID: CAR000163824
Trans 2 Name: TRIMSA USA INC
TSDF EPA ID: MXC130619001
Trans Name: RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 214 - Unspecified solvent mixture
RCRA Code: D001
Meth Code: H020 - Solvents Recovery
Quantity Tons: 1.08
Waste Quantity: 300
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20150915
Creation Date: 1/5/2016 22:35:46
Receipt Date: 20150921
Manifest ID: 014854253JJK
Trans EPA ID: CAR000129759
Trans Name: HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAT080013352
Trans Name: DEMENNO/KERDOON
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 221 - Waste oil and mixed oil
RCRA Code: Not reported
Meth Code: H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons: 0.209
Waste Quantity: 55

PARA TECH COATING INC (Continued) **1001815610**

Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150915
Creation Date:	2/9/2016 22:15:26
Receipt Date:	20150924
Manifest ID:	014854254JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	F005
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.01
Waste Quantity:	20
Quantity Unit:	P
Additional Code 1:	F003
Additional Code 2:	D001
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150915
Creation Date:	2/9/2016 22:15:26
Receipt Date:	20150924
Manifest ID:	014854254JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	311 - Pharmaceutical waste
RCRA Code:	F005
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.02
Waste Quantity:	40
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150915
Creation Date:	2/9/2016 22:15:26

PARA TECH COATING INC (Continued) **1001815610**

Receipt Date:	20150924
Manifest ID:	014854254JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	F003
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.015
Waste Quantity:	30
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150714
Creation Date:	2/8/2016 22:17:27
Receipt Date:	20150722
Manifest ID:	014853774JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA- USA - INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150428
Creation Date:	9/22/2015 22:15:43
Receipt Date:	20150507
Manifest ID:	013714494JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150224
Creation Date:	8/10/2015 22:15:28
Receipt Date:	20150227
Manifest ID:	013713498JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2015
Gen EPA ID:	CAR000057828

Shipment Date:	20150929
Creation Date:	5/4/2016 22:15:08
Receipt Date:	20151007
Manifest ID:	014854329JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.08

PARA TECH COATING INC (Continued) **1001815610**

Waste Quantity:	300
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150915
Creation Date:	1/5/2016 22:35:46
Receipt Date:	20150921
Manifest ID:	014854253JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO/KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.209
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150915
Creation Date:	2/9/2016 22:15:26
Receipt Date:	20150924
Manifest ID:	014854254JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	F005
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.01
Waste Quantity:	20
Quantity Unit:	P
Additional Code 1:	F003
Additional Code 2:	D001
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Shipment Date:	20150915
Creation Date:	2/9/2016 22:15:26
Receipt Date:	20150924
Manifest ID:	014854254JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	311 - Pharmaceutical waste
RCRA Code:	F005
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.02
Waste Quantity:	40
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150915
Creation Date:	2/9/2016 22:15:26
Receipt Date:	20150924
Manifest ID:	014854254JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	331 - Off-specification, aged, or surplus organics
RCRA Code:	F003
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.015
Waste Quantity:	30
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150714
Creation Date:	2/8/2016 22:17:27
Receipt Date:	20150722
Manifest ID:	014853774JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA- USA - INC
TSDF EPA ID:	MXC130619001

PARA TECH COATING INC (Continued) **1001815610**

Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150428
Creation Date:	9/22/2015 22:15:43
Receipt Date:	20150507
Manifest ID:	013714494JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150224
Creation Date:	8/10/2015 22:15:28
Receipt Date:	20150227
Manifest ID:	013713498JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G

PARA TECH COATING INC (Continued) **1001815610**

Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2014
Gen EPA ID:	CAR000057828
Shipment Date:	20141212
Creation Date:	6/23/2015 22:15:22
Receipt Date:	20141218
Manifest ID:	013712355JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TAMARRY RECYCLING INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141204
Creation Date:	3/9/2015 22:15:06
Receipt Date:	20141208
Manifest ID:	013712269JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO/KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.19
Waste Quantity:	50
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Additional Code 5:	Not reported
Shipment Date:	20141014
Creation Date:	5/27/2015 22:15:12
Receipt Date:	20141023
Manifest ID:	012892381JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000194217
Trans 2 Name:	TEMARRY TRANSPORT
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.792
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20140815
Creation Date:	2/13/2015 22:15:12
Receipt Date:	20140826
Manifest ID:	012891747JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	0.99
Waste Quantity:	275
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20140610
Creation Date:	11/2/2014 22:15:05
Receipt Date:	20140618
Manifest ID:	012887221JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824

PARA TECH COATING INC (Continued) **1001815610**

Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.44
Waste Quantity:	400
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20140415
Creation Date:	10/17/2014 22:15:06
Receipt Date:	20140424
Manifest ID:	012886636JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20140327
Creation Date:	6/2/2014 22:15:08
Receipt Date:	20140331
Manifest ID:	012142953JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO/KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect

PARA TECH COATING INC (Continued) **1001815610**

Quantity Tons:	0.209
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20140304
Creation Date:	8/9/2014 22:15:07
Receipt Date:	20140310
Manifest ID:	012142742JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY SE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.26
Waste Quantity:	350
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20140123
Creation Date:	7/7/2014 22:15:06
Receipt Date:	20140212
Manifest ID:	012141881JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	MXC130619001
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.782
Waste Quantity:	495
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Additional Info:

Year:	2013
Gen EPA ID:	CAR000057828
Shipment Date:	20131210
Creation Date:	5/14/2014 22:14:54
Receipt Date:	20131217
Manifest ID:	012136965JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20131030
Creation Date:	4/24/2014 22:15:02
Receipt Date:	20131107
Manifest ID:	012136617JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20130820
Creation Date:	1/17/2014 22:15:06
Receipt Date:	20130829
Manifest ID:	011269969JJK
Trans EPA ID:	CAR000129759

PARA TECH COATING INC (Continued) **1001815610**

Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.476
Waste Quantity:	410
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20130716
Creation Date:	11/20/2013 22:15:20
Receipt Date:	20130723
Manifest ID:	011269573JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.584
Waste Quantity:	440
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20130604
Creation Date:	8/12/2013 22:15:16
Receipt Date:	20130610
Manifest ID:	011269176JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO/KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.209
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20130604
Creation Date:	10/30/2013 22:15:29
Receipt Date:	20130618
Manifest ID:	011269175JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20130507
Creation Date:	9/20/2013 22:15:10
Receipt Date:	20130516
Manifest ID:	011268816JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.26
Waste Quantity:	350
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Additional Code 5:	Not reported
Shipment Date:	20130409
Creation Date:	8/25/2013 22:15:09
Receipt Date:	20130416
Manifest ID:	011268414JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.98
Waste Quantity:	550
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20130219
Creation Date:	7/9/2013 22:15:05
Receipt Date:	20130226
Manifest ID:	010480445JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.782
Waste Quantity:	495
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20130104
Creation Date:	5/14/2013 22:15:27
Receipt Date:	20130114
Manifest ID:	010480015JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824

PARA TECH COATING INC (Continued) **1001815610**

Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.8
Waste Quantity:	500
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2012
Gen EPA ID:	CAR000057828
Shipment Date:	20121106
Creation Date:	3/26/2013 22:15:29
Receipt Date:	20121109
Manifest ID:	010479517JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.26
Waste Quantity:	350
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20120926
Creation Date:	8/18/2013 22:15:21
Receipt Date:	20121002
Manifest ID:	010479180JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20120814
Creation Date:	1/12/2013 22:15:35
Receipt Date:	20120820
Manifest ID:	010478702JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.368
Waste Quantity:	380
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20120625
Creation Date:	5/31/2013 22:15:16
Receipt Date:	20120703
Manifest ID:	009495799JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.386
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported

PARA TECH COATING INC (Continued) **1001815610**

Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20120522
Creation Date:	5/28/2013 22:15:05
Receipt Date:	20120530
Manifest ID:	009498972JJK
Trans EPA ID:	CAR000129759
Trans Name:	HAZARDOUS WASTE TRANSPORTATION SERVICES INC
Trans 2 EPA ID:	CAR000163824
Trans 2 Name:	TRIMSA USA INC
TSDF EPA ID:	02-IV-99-10
Trans Name:	RECICLADORA TEMARRY DE MEXICO SA DE CV
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	H020 - Solvents Recovery
Quantity Tons:	1.188
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

CERS:

Name:	PARA TECH COATING INC
Address:	35 ARGONAUT
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	418870
CERS ID:	10548292
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	418870
Site Name:	PARA TECH COATING INC
Violation Date:	04-13-2017
Citation:	22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description:	Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes:	Returned to compliance on 05/13/2017. OBSERVATION: The waste IPA and waste chemicals in the flammable cabinet were not labeled during the inspection and the waste oil, was missing the accumulation date and was labeled with accumulation date during the inspection. All hazardous waste containers shall be marked with the following information: 1) the words Hazardous Waste ; 2) name and address of generator; 3) hazardous properties; 4) physical state; 5) composition (contents); 6) accumulation start date. CORRECTIVE ACTION: Immediately label these containers and ensure that all hazardous waste containers are marked with all the required information as soon. Submit pictures of properly labeled IPA and IPA

PARA TECH COATING INC (Continued) **1001815610**

container located inside the buildings (the one emptied daily).
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Site ID: 418870
Site Name: PARA TECH COATING INC
Violation Date: 04-13-2017
Citation: 22 CCR 15 66265.173 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.173
Violation Description: Failure to meet the following container management requirements: (a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste. (b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.
Violation Notes: Returned to compliance on 05/13/2017. The waste oil drum was found with a funnel and no lid at the time of inspection. The drum bung was affixed to the container at the time of inspection. Train staff to ensure that all containers are maintained closed except when adding or removing waste.
Violation Division: Orange County Environmental Health
Violation Program: HW
Violation Source: CERS,

Site ID: 418870
Site Name: PARA TECH COATING INC
Violation Date: 04-13-2017
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.
Violation Notes: Returned to compliance on 05/03/2017. OBSERVATION: INITIAL / ANNUAL training documentation for all applicable employees was not available. CORRECTIVE ACTION: Submit documentation to the CUPA demonstrating that employees have received training on safe handling of hazardous materials and the Emergency Response Plan within 30 days. Submit a copy of the training log indicating the above training and I will abate the violation.
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Site ID: 418870
Site Name: PARA TECH COATING INC
Violation Date: 10-03-2014
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes: Returned to compliance on 05/03/2017.
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

PARA TECH COATING INC (Continued) **1001815610**

Site ID: 418870
Site Name: PARA TECH COATING INC
Violation Date: 10-03-2014
Citation: HSC 6.95 25508(d) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(d)
Violation Description: Failure to complete and/or electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.
Violation Notes: Returned to compliance on 05/03/2017.
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Site ID: 418870
Site Name: PARA TECH COATING INC
Violation Date: 04-13-2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Notes: Returned to compliance on 05/03/2017. OBSERVATION: The annotated site map submitted to the CUPA does not include all of the following; -site orientation, -loading areas, -internal roads, -adjacent streets, -storm drains (outside), -access and exit points, -emergency shutoffs inside and out for electric, natural gas and water, -evacuation staging areas, -hazardous material storage and handling areas, -emergency response equipment (spill equipment and fire extinguishers), -location of nearest fire hydrant/fire pumps/fire risers, -knox box location if you have one. Please add all of the required information to the map (both inside and outside) and resubmit. . CORRECTIVE ACTION: Revise the annotated Site Map to include all required content and submit electronically in the California Environmental Reporting System (CERS).
Violation Division: Orange County Environmental Health
Violation Program: HMRRP
Violation Source: CERS,

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for follow up inspection. Waste alcohol drums were properly identified including the accumulation dates. Waste oil drum was stored closed. Deleted violations W010 and W016. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-02-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for initial hazardous materials and business emergency plan audit. Observed the facility and inspected hazardous materials storage. The following hazardous materials were observed in amounts

PARA TECH COATING INC (Continued) **1001815610**

that exceed the required disclosure quantities: - At least seven 55 gallon drums of waste IPA - At least two 55 gallon drums of new IPA - Various compressed gas cylinders of nitrogen, helium, oxygen, argon and acetylene. This report serves as notice that the facility must submit the following documents electronically within 30 days of this report: - Business Emergency Plan - Hazardous Materials Chemical Inventory - Site Map The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above the disclosure thresholds. If there is a change in the type or amount of chemicals that are maintained on site, please submit revised documents (electronically) within 30 days of the change. The E-Submit portal for [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-07-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-27-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File review. Violation was corrected in EC
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-17-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous waste inspection. Access to the facility, and permission to inspect and take photographs (if needed) was provided by Patricia Langraphi, and included the areas noted below. NOTE: Those chemicals in the storage area cabinets (small containers of miscellaneous oils and other items) if determined to be waste, must be managed as hazardous waste and shipped to an appropriate treatment facility. Determine, which, if any, are no longer in use by this facility and should be classified as waste. - Manufacturing: various waste lab chemicals, waste absorbent - Machine Shop: lubricating oils, metal fines, waste absorbent - Hazardous Waste Storage Area: containers properly labeled and closed The containers were observed properly stored and labeled. Hazardous waste disposal documents were reviewed. A copy of this report will be sent to: PLANGRAPHI@PARLYENE.COM
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown

PARA TECH COATING INC (Continued) **1001815610**

Eval Date: 04-04-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Submittal declined in CERS. The submittal was declined, please research the following and resubmit within 15 days. Our records indicate that the owner of this facility is Para Tech coating Inc. Your CERS business information indicates that the owner is Metal Improvement Company LLC. Is this a change of ownership? Are our records incorrect? please advise. The submittal of the business emergency plan was declined, this is a map, not a BEP. Use the BEP template located at http://www.calepa.ca.gov/CUPA/Documents/eTemplates/Contingency.pdf (complete and sign and upload a copy) (use UPA phone number on the first page for us as 714-433-6000). Remove the old upload and re-upload the new one in PDF format. The submittal was declined, please make the following changes and resubmit within 30 days; 1. during the inspection our records show you were also requested to disclose helium, oxygen, argon and acetylene. If you have 200 or more cubic feet of oxygen or acetylene you [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-23-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: esubmit and CERS review
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-13-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Change of ownership submitted this date. New owner as of 2/8/2017is Metal Improvement Company LLC Routine inspection conducted this date in regards to hazardous waste, consent to enter, inspect and take photographs was given by Rick Segarra, materials manager. Hazardous waste containers on-site this date consisted of: waste alcohol and waste oil The containers are not in compliance with all applicable labeling requirements this date, see violation. Per Rick Segarra, employees receive Hazardous Waste Management Training on the job. Consolidated waste receipts/ manifests were reviewed this date. Hazardous Waste Emergency Response information and was posted. Inspected municipal trash dumpster and area, no apparent hazardous waste in this area. Perimeter of facility inspected, no water runoff or staining noted at this time. Discussed Hazardous Waste Program, Hazardous Materials Program, and Management of Universal Waste. E-mailed copy of [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-03-2017

PARA TECH COATING INC (Continued) **1001815610**

Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: review of CERS accepted all for 2017
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-13-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Change of ownership submitted this date. New owner as of 2/8/2017is Metal Improvement Company LLC On site to conduct hazardous materials chemical inventory and business emergency plan inspection this date, consent to enter, inspect and take photographs was given by - Rick Segurra, materials manager The HMBEP has been submitted through CERS 10548292 Employee Business Emergency Plan Training was not yet done, see violation. Safety/cleanup equipment is available. Hazardous materials storage area were reviewed at this time. The facility has the following hazardous materials that exceed the required disclosure quantities: -nitrogen 305 gallons -IPA 200 gallons, in drums and tanks -IPA waste 165 gallons -O2 320 cubic feet -waste oil 55 gallons **Please note, you are required to review the submittal yearly and resubmit prior to March 1st each year. You will get communication (probably email) indicating you should go in and review and resubmit around January [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous waste inspection. Patricia Langraphi, Quality Manager, provided consent to inspect. The facility's hazardous waste storage contains used lubrication oils, waste isopropyl alcohol, various waste lab chemicals. Hazardous waste are stored in small containers and moved each day to the drums stored behind the building. A perimeter walk was conducted. Municipal dumpster are shared by other tenants and does not appear to contain any hazardous waste. Manifests from World Oil, and US Ecology were available and reviewed. Emergency response information is posted and employees are reported to be trained. No hazardous waste violations were observed on this date. Inspection report emailed to facility patricia.langraphi@
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous waste inspection. Patricia Langraphi, Quality Manager, provided consent to inspect. The facility's hazardous waste storage contains used lubrication oils, waste

PARA TECH COATING INC (Continued) **1001815610**

isopropyl alcohol, various waste lab chemicals. Hazardous waste are stored in small containers and moved each day to the drums stored behind the building. A perimeter walk was conducted. Municipal dumpster are shared by other tenants and does not appear to contain any hazardous waste. Manifests from World Oil, and US Ecology were available and reviewed. Emergency response information is posted and employees are reported to be trained. No hazardous waste violations were observed on this date. Inspection report emailed to facility patricia.langraphi@cwst.com

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-02-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Brent Clawson. Hazardous waste properly stored and identified. Hazardous waste emergency response sticker completed and posted on site. Manifests for hazardous waste pickup reviewed on site. No violations noted at tis time.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-17-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: An onsite hazardous materials inspection of this facility was conducted this date. Access to the facility was provided by Patricia Langraphi. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - Waste alcohol - Alcohol - Lubricating oil - Oxygen NOTE: Liquid nitrogen is no longer used by this facility, and the maximum amount stored onsite of alcohol was approximately 165 gallons. Amend your CERS submittals to accurately reflect these changes. A copy of this inspection report will be emailed to: PLANGRAPHI@PARLYENE.COM

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-10-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Onsite to conduct A01 inspection, but business is currently closed. Will re-visit to veirfy.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2015
Violations Found: No

PARA TECH COATING INC (Continued) **1001815610**

Eval Type: Routine done by local agency
Eval Notes: On site for inspection. Obtained credentials in e submit for Tiffiny Brookhart. Explained what is needed to complete the disclosure. Showed her how to navigate the in portal. Provided her the chemical inventory that will need to be disclosed. New IPA Waste IPA Nitrogen Helium Oxygen Argon Acetylene
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-03-2014
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Orange County Environmental Health as the Certified Unified Program Agency (OC CUPA) is the administrating agency for the Hazardous Materials Disclosure and Business Emergency Plan programs (HMD/BEP) previously administered by the Orange County Fire Authority. During the months of August and December of 2013, the OC CUPA sent out letters to regulated businesses requesting them to electronically submit their HMD/BEP forms. Electronic submission of these forms is a legal requirement. Failure to submit HMD/BEP forms is in violation of the California Health & Safety Code Chapter 6.95. According to our records there is no electronic submission for this facility. Please go to www.esubmit.ocgov.com to request a user name and password and submit your HMD/BEP forms within the next 30 days. Businesses may also submit forms via the California Environmental Reporting System. Please verify that all owner information that is pre populated on the E-Submit Portal is still [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Enforcement Action:
Site ID: 418870
Site Name: PARA TECH COATING INC
Site Address: 35 ARGONAUT
Site City: ALISO VIEJO
Site Zip: 92656
Enf Action Date: 08-07-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Failure to Electronically Submit HMD/BEP.
Enf Action Division: Orange County Environmental Health
Enf Action Program: UNSPEC
Enf Action Source: CERS,

Coordinates:
Site ID: 418870
Facility Name: PARA TECH COATING INC
Env Int Type Code: HMBP
Program ID: 10548292
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.591870
Longitude: -117.725470

PARA TECH COATING INC (Continued) **1001815610**

Affiliation:

Affiliation Type Desc:	Legal Owner
Entity Name:	Metal Improvement Company LLC
Entity Title:	Not reported
Affiliation Address:	13925 Ballantyne Corporated Place ste 400
Affiliation City:	Charlotte
Affiliation State:	NC
Affiliation Country:	United States
Affiliation Zip:	28277
Affiliation Phone:	(248) 344-2650,

Affiliation Type Desc:	Identification Signer
Entity Name:	Patricia Langraphi
Entity Title:	Quality/ Compliance Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Document Preparer
Entity Name:	Patricia Langraphi
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Parent Corporation
Entity Name:	PARA TECH COATING INC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	CUPA District
Entity Name:	Orange County Env Health
Entity Title:	Not reported
Affiliation Address:	1241 East Dyer RoadSuite 120
Affiliation City:	Santa Ana
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92705-5611
Affiliation Phone:	(714) 433-6406,

Affiliation Type Desc:	Environmental Contact
Entity Name:	Patricia Langraphi
Entity Title:	Not reported
Affiliation Address:	35 ARGONAUT
Affiliation City:	ALISO VIEJO
Affiliation State:	CA

PARA TECH COATING INC (Continued) **1001815610**

Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	35 ARGONAUT
Affiliation City:	ALISO VIEJO
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92656
Affiliation Phone:	,
Affiliation Type Desc:	Operator
Entity Name:	Patricia Langraphi
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(800) 999-4942,

F23 **CHEVRON 200913** **RCRA-LQG** **1000686467**
WSW **23022 ALISO CREEK RD** **SWEEPS UST** **CAD983637851**
1/8-1/4 **ALISO VIEJO, CA 92656** **CA FID UST**
0.200 mi. **FINDS**
1057 ft. **Site 1 of 6 in cluster F** **ECHO**

Relative: **Higher**

Actual: **485 ft.**

RCRA Listings:

Date Form Received by Agency:	20140301
Handler Name:	Chevron 200913
Handler Address:	ALISO CREEK RD
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAD983637851
Contact Name:	KATHY NORRIS
Contact Address:	PO BOX 6004
Contact City,State,Zip:	SAN RAMON, CA 94583
Contact Telephone:	877-386-6044
Contact Fax:	Not reported
Contact Email:	NAWTDESK@CHEVRON.COM
Contact Title:	LEAD WASTE TEC
EPA Region:	09
Land Type:	Private
Federal Waste Generator Description:	Large Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	2013
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	ALISO CREEK RD
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Chevron Usa Inc
Owner Type:	Private
Operator Name:	Chevron Usa Inc

CHEVRON 200913 (Continued) **1000686467**

Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20141120
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2013

Click Here for Biennial Reporting System Data:
Year: 2003

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:
Waste Code: D001
Waste Description: Ignitable Waste

Waste Code: D018
Waste Description: Benzene

CHEVRON 200913 (Continued) **1000686467**

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: CHEVRON USA INC	
Legal Status:	Private
Date Became Current:	19900614
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: CHEVRON PRODUCTS CO.	
Legal Status:	Private
Date Became Current:	19900614
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 6004
Owner/Operator City,State,Zip:	SAN RAMON, CA 94583
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: CHEVRON STATIONS INC.	
Legal Status:	Private
Date Became Current:	19900614
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: CHEVRON USA INC	
Legal Status:	Private
Date Became Current:	19900614
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 6004
Owner/Operator City,State,Zip:	SAN RAMON, CA 94583
Owner/Operator Telephone:	925-842-1000
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: CHEVRON PRODUCTS COMPANY	
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	P O BOX 6004
Owner/Operator City,State,Zip:	SAN RAMON, CA 94583
Owner/Operator Telephone:	925-842-5931

CHEVRON 200913 (Continued) **1000686467**

Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20140301
Handler Name: CHEVRON 200913
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20020617
Handler Name: CHEVRON STATION NO 200913
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20040223
Handler Name: CHEVRON 200913
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 44711
NAICS Description: GASOLINE STATIONS WITH CONVENIENCE STORES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

CHEVRON 200913 (Continued) **1000686467**

SWEEPS UST:

Name:	CHEVRON
Address:	23022 ALISO CREEK RD
City:	ALISO VIEJO
Status:	Active
Comp Number:	12182
Number:	9
Board Of Equalization:	Not reported
Referral Date:	09-30-92
Action Date:	09-15-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	30-000-012182-000001
Tank Status:	A
Capacity:	12000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	3

Name:	CHEVRON
Address:	23022 ALISO CREEK RD
City:	ALISO VIEJO
Status:	Active
Comp Number:	12182
Number:	9
Board Of Equalization:	Not reported
Referral Date:	09-30-92
Action Date:	09-15-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	30-000-012182-000002
Tank Status:	A
Capacity:	12000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Name:	CHEVRON
Address:	23022 ALISO CREEK RD
City:	ALISO VIEJO
Status:	Active
Comp Number:	12182
Number:	9
Board Of Equalization:	Not reported
Referral Date:	09-30-92
Action Date:	09-15-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	30-000-012182-000003
Tank Status:	A
Capacity:	12000
Active Date:	Not reported
Tank Use:	M.V. FUEL

CHEVRON 200913 (Continued) **1000686467**

STG: P
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 30010575
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 1300 S BCH BLVD / P O BOX 2
Mailing Address 2: Not reported
Mailing City,St,Zip: ALISO VIEJO 92656
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

FINDS:
Registry ID: 110002877245

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.
California's Hazardous Waste Tracking System Data Mart (HWTS-DATAMART) provides information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000686467
Registry ID: 110002877245
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002877245
Name: CHEVRON 200913
Address: 23022 ALISO CREEK RD
City,State,Zip: ALISO VIEJO, CA 92656

F24
WSW
1/8-1/4
0.200 mi.
1057 ft.

CHEVRON # 0200913
23022 ALISO CREEK RD
ALISO VIEJO, CA 92656

Site 2 of 6 in cluster F

UST **U004344178**
N/A

Relative:
Higher

Actual:
485 ft.

UST:

Name:	CHEVRON # 0200913
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Facility ID:	12182
Permitting Agency:	ORANGE COUNTY
CERSID:	Not reported
Latitude:	33.5940106
Longitude:	-117.7269038
Owner type:	Not reported
Facility type:	Not reported
Num of inuse ust:	Not reported
Num of closed ust:	Not reported
Num of oos ust:	Not reported
Epa region:	Not reported
Tribal lands:	Not reported
Tank owner name:	Not reported
Tank owner mailing address:	Not reported
Tank owner mailing city:	Not reported
Tank owner mailing zip:	Not reported
Tank owner mailing state:	Not reported
Tank operator name:	Not reported
Tank operator mailing address:	Not reported
Tank operator mailing city:	Not reported
Tank operator mailing zip:	Not reported
Tank operator mailing state:	Not reported
Tankidnumber:	Not reported
Tank status:	Not reported
Tank configuration:	Not reported
Tank closure date:	Not reported
Tank installation date:	Not reported
Tank num of compartments:	Not reported
Tank contents:	Not reported
Tank capacity gallons:	Not reported
Tank type:	Not reported
Tank pc construction:	Not reported
Tank pwpiping construction:	Not reported
Tank piping type:	Not reported
Tank piping construction:	Not reported
Tank sacrificial anode:	Not reported
Tank cp impressed current:	Not reported
Tank cp shutoff:	Not reported
Tank alarms:	Not reported
Tank ball float:	Not reported
Tank spill bucket:	Not reported

F25
WSW
1/8-1/4
0.200 mi.
1057 ft.

CHEVRON # 0200913
23022 ALISO CREEK RD
ALISO VIEJO, CA 92656

Site 3 of 6 in cluster F

UST **U003938660**
N/A

Relative:
Higher

Actual:
485 ft.

ORANGE CO. UST:

Name:	CHEVRON # 0200913
Address:	23022 ALISO CREEK
City,State,Zip:	ALISO VIEJO 92656
Facility ID:	FA24729
Notes:	Not reported

Name:	CHEVRON # 0200913
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656-1540
Facility ID:	FA0024729
Notes:	Not reported

F26
WSW
1/8-1/4
0.200 mi.
1057 ft.

CHEVRON STATION #200913/1404
23022 ALISO CREEK RD
ALISO VIEJO, CA 92656

Site 4 of 6 in cluster F

UST FINDER **1028190943**
N/A

Relative:
Higher

Actual:
485 ft.

UST FINDER:

Object ID:	735174
Facility ID:	CA10441546
Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Address Match Type:	PointAddress
Open USTs:	3
Closed USTs:	Not reported
TOS USTs:	Not reported
Population 1500ft:	353
Private Wells 1500ft:	0
Within 100yr Floodplain:	No
Land Use:	Developed, Medium Intensity
Within SPA:	Not reported
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Not reported
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Open UST(s)
Date of Last Inspection:	Not reported
EPA Region:	9
Tribe:	Not reported
Coordinate Source:	Geocode
X Coord:	-117.728512985
Y Coord:	33.5928980040001
Latitude:	33.5928980044987
Longitude:	-117.728512984574

UST FINDER:

CHEVRON STATION #200913/1404 (Continued) **1028190943**

Object ID:	2269855
Facility ID:	CA10441546
Tank ID:	CA10441546-001_A Stand-alone Tank_1
Tank Status:	Open
Installation Date:	2004/06/22 15:59:59+00
Removal Date:	Not reported
Tank Capacity:	20000
Substances:	Regular Unleaded
Tank Wall Type:	Double Wall

Object ID:	2269856
Facility ID:	CA10441546
Tank ID:	CA10441546-002_A Stand-alone Tank_1
Tank Status:	Open
Installation Date:	2004/06/22 15:59:59+00
Removal Date:	Not reported
Tank Capacity:	15000
Substances:	Premium Unleaded
Tank Wall Type:	Double Wall

Object ID:	2269857
Facility ID:	CA10441546
Tank ID:	CA10441546-003_A Stand-alone Tank_1
Tank Status:	Open
Installation Date:	2016/05/13 15:59:59+00
Removal Date:	Not reported
Tank Capacity:	10000
Substances:	Diesel
Tank Wall Type:	Double Wall

F27
WSW
1/8-1/4
0.200 mi.
1057 ft.

CHEVRON STATION #200913/1404
23022 ALISO CREEK RD
ALISO VIEJO, CA 92656

Site 5 of 6 in cluster F

CERS HAZ WASTE **S123298347**
CERS TANKS **N/A**
CHMIRS
CERS

Relative:
Higher

Actual:
485 ft.

CERS HAZ WASTE:

Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	104900
CERS ID:	10441546
CERS Description:	Hazardous Waste Generator

CERS TANKS:

Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	104900
CERS ID:	10441546
CERS Description:	Underground Storage Tank

CHMIRS:

Name:	Not reported
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656

CHEVRON STATION #200913/1404 (Continued) **S123298347**

OES Incident Number:	18-5178
OES notification:	07/31/2018
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Service Station
Cleanup By:	Responsible Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Type:	PETROLEUM
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1440
Year:	2018
Agency:	Chevron
Incident Date:	07/31/2018
Admin Agency:	Orange County Emergency Management Division
Amount:	Not reported
Contained:	Stopped,Contained
Site Type:	Not reported
E Date:	Not reported
Substance:	Gasoline
Quantity Released:	2
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Number of Fatalities:	Not reported
#1 Pipeline:	No
#2 Pipeline:	No
#3 Pipeline:	No
#1 Vessel >= 300 Tons:	No
#2 Vessel >= 300 Tons:	No
#3 Vessel >= 300 Tons:	No
Evacs:	No
Injuries:	No
Fatals:	No
Comments:	Not reported
Description:	Customer overfilled their vehicle and the automatic shutoff on the pump did not engage. Spilled approximately 2 gallons onto concrete. Spill was cleaned up by service station personnel. Not reported

CERS:

Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	104900
CERS ID:	10441546
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	104900
Site Name:	Chevron Station #200913/1404
Violation Date:	07-05-2016
Citation:	23 CCR 16 2636(f)(1) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(1)
Violation Description:	Failure of the double-walled pressurized piping to be continuously monitored with a system that activates an audible and visual alarm or stops flow at the dispenser when a leak is detected.
Violation Notes:	Returned to compliance on 07/05/2016. Diesel turbine sump sensor failed testing. Sensor was replaced and successfully tested. Abated violation I504
Violation Division:	Orange County Environmental Health
Violation Program:	UST
Violation Source:	CERS,

Site ID:	104900
Site Name:	Chevron Station #200913/1404
Violation Date:	05-17-2016
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the pressurized piping to meet one or more of the following requirements: monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour, and will restrict the flow of product through the piping or trigger an alarm when a release occurs.
Violation Notes:	Returned to compliance on 05/17/2016. 87 octane PLLD failed testing during the annual monitoring system certification. Leak detector was replaced and passed testing later that day
Violation Division:	Orange County Environmental Health
Violation Program:	UST
Violation Source:	CERS,

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Site ID: 104900
Site Name: Chevron Station #200913/1404
Violation Date: 05-07-2014
Citation: HSC 6.7 25292(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25292(e)
Violation Description: Failure to maintain secondary containment, as evidenced by failure of secondary containment testing.
Violation Notes: Returned to compliance on 05/18/2015. The following secondary components failed SB 989 testing performed on 4-28-14: UDCs 1/2, 3/4, 5/6, 7/8, 9/10, 11/12 & 13/14 and the vent termination sump. According to the report, entry fittings are dried out and cracked. Address situation and submit modification plans to Health Care Agency within 30 days.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-17-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct an Underground Storage Tank (UST) inspection and witness the annual monitoring system certification and spill bucket testing. Met with Steven Lantz, service technician with Tanknology. The site has the following double walled (DW) tanks: - 15k gallon (premiun) - 10k gallon (biodiesel) - 20k gallon (regular unleaded) - nine UDCs The system is monitored by a Veeder Root TLS 350R system. The monitor is operational for audible and visual alarms and the display reads "all functions normal." Sensors: Tank Annulars - VR303 Sumps - VR209 UDCs - VR208 Pipe Monitoring - VR208 Vent Sump: VR208 Sensors were observed at the lowest point. Sensor out and fail-safe were verified and passed. All sensors tested, were operational and passed. Leak detectors are PLLDs (electronic). Overfill protection is with flapper valves. Spill buckets were hydrostatically tested with no changes in water level. Testing was conducted by Steven Lantz with [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-07-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Final SR inspection notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-08-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted latest submittal in CERS
Eval Division: Orange County Environmental Health
Eval Program: HMRRP

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-22-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File review and calls for update on status
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-05-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined submittal. The two "solid" disclosures and six of the "liquid" disclosures are listed at levels below disclosure threshold. If the maximum daily amounts listed are accurate, delete these materials from the inventory. If the maximum daily amounts are at least 500 pounds (solid) or 55 gallons (liquid), change the amounts on the disclosure. Resubmit after modifications have been performed.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-17-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Plans expired and were replaced with SR0126102
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-02-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I reviewed Overfill Prevention Equipment Inspection Report Form for activities conducted on 7/20/21. All tested components passed test. Facility has Fill Tube Shut-Off Valve for overfill protection with equipment activating between 93.6% and 93.7%.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-03-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received SB989 testing for 6 months post dispenser upgrade conducted on12/16/16. All product, vent, vapor and UDC's passed at that time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval General Type: Other/Unknown
Eval Date: 04-25-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: SB 989 test notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-03-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed SB989 dated 3/3/17. All portions requiring testing have passed. The diesel system is VPH so does not require testing.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-03-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct an Underground Storage Tank (UST) inspection and witness the annual monitoring system certification and spill bucket testing. Met with Matt Lipke, service technician with Tanknology. The site has the following double walled (DW) tanks: - 15k gallon (premium) - 10k gallon (biodiesel) - 20k gallon (regular unleaded) - nine UDCs The system is monitored by a Veeder Root TLS 350R system. The monitor is operational for audible and visual alarms and the display reads "all functions normal." Sensors: Tank Annulars - VR303; Sumps - VR209; UDCs - VR208; Pipe Monitoring - VR208; Vent Sump: VR208 Sensors were observed at the lowest point. Sensor out and fail-safe were verified and passed. All sensors tested, were operational and passed. Leak detectors are PLLDs (electronic). Tanks utilizes flappers for overfill protection. Spill buckets were hydrostatically tested with no changes in water level. Testing was conducted by Matt Lipke with Tanknology. Technician certifications (I
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-13-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Plan check review and approval.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including th dumpster area.

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Permission to inspect granted by the manager on duty. Hazardous waste properly stored, labeled and dated. Documentation for hazardous waste pickup available for review during the past three years. Emergency response/contingency plan complete, kept on site and available for review. Training provided to all nine employees within the past 12 months. No violations noted at this time.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Walked facility with the latest submitted hazardous material inventory and site map. Did not observe any additional hazardous material stored at or above disclosure threshold. Hazardous material containers appeared to be in satisfactory condition. No sign of leaking or previous releases. Locations for site map requirements were accurate. Business emergency plan complete and available for review. Training provided to all nine employees within the past 12 months. * Propane may be deleted from the hazardous material inventory. The propane stored on site falls under the retail exemption.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to witness monitoring system certification activities and to conduct routine UST inspection. Dilon Ratnayake granted consent to conduct inspection. Annulars are wet . Sensors shut down respective turbine at sensor out and high liquid level. Sump sensors alarmed properly (visual and audible) and shut down respective turbine when submerged in water. UDC sensors alarmed properly (visual and audible) and shut down all turbines when submerged in water. Dispensers with diesel also shut down diesel turbine. Vacuum sensors for diesel tank system were tested and passed. Fail-safe and sensor out were tested and passed. Line leak detectors were tested and passed. Spill buckets were tested by donut (vacuum) with no changes in pressure. Valid permit, designated operator documentation, monthly inspection reports with responses to alarms, monitoring plan, response plan, employee training records (maintained in Emergency Response Procedures binder), tank [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-16-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification
Eval Division: Orange County Environmental Health

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-17-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine small quantity hazardous waste inspection. Anu, Cashier, provided consent to inspect. The hazardous waste drum is properly labeled, dated and stored closed. Drums are stored in trash enclosure area. A perimeter walk was conducted. Municipal dumpster does not appear to contain any hazardous waste. Manifests were available and reviewed. Last picked up was on 2/9/2022 by Clean Harbor. Emergency response information is posted and employees are reported to be trained. Inspection report emailed permitdesk@chevron.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-20-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct hazardous materials chemical inventory and business emergency plan inspection. Anna Donaldson granted consent to conduct inspection. I walked through facility and inspected hazardous material storage areas inside and outside building, including "Electrical Room" next to car wash tunnel. There has been no changes in types and/or volumes of the hazardous material stored on site since last inspection or previous reporting period. Facility has been reporting propane tanks for sale (retail) that are not reportable. Please delete retail propane tanks from inventory. Facility stores the following hazardous materials at disclosure threshold: - Diesel - Gasoline - Low PH Presoak 203 (car wash solution) - Alkaline Presoak 105 (car wash solution) - Liquid Carbon Dioxide Site map must be revised as follows and resubmitted: - There are no storm drains in car wash tunnel as shown. There is only a drain inside the car wash tunnel. - Car wash [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-25-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for primary piping inspection. Current ICC certifications provided for Hector Cardenas (service technician, vapor installation & repair and UST installation & retrofitting). Also. current ICC certification for Vincent Santangelo (UST installation & retrofitting) provided. Primary piping held pressure for > than 60 minutes. All fittings/connections were "soaped". No leaking/bubbling noticed.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-26-2020
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: An on-site inspection was conducted this date. The annual monitoring system certification was performed by Luis Navarro (Tanknology) on 5/12/2020 and was NOT witnessed by this agency on that date due to COVID-19 precautions. This facility contains: 3 - USTs (reg, prem, diesel) Monitor system is a Veeder-Root monitor panel. NOTE: At the time of the inspection the panel was in alarm for an "Auto-Dialer Error." The operator showed me that a service call had been placed prior to my arrival. The following were tested on 5/12/20 and PASSED per the test report submitted to this agency by the service technician: - Sensors: -- Tank Annulars: VR303 -- Sumps: VR209 -- UDCs: VR208 - Sensors, initiated positive shutdown to the turbines when tested in water - Fail Safe and Positive Shutdown - Spill buckets using a visual hydrostatic test - Leak detectors. PLLDs (electronic) Documents reviewed onsite: - Permit to operate - Previous Monitoring System [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-29-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for a UST system monitoring certification performed on 5-15-15. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-29-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS cfo/FR expires 4/25/18 DO- Jesus Lopez 4/17/19 monitoring cert results from testeing done on 5/1/2018 - all components passed at that time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-11-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS this date accepted UST info. The SB989 post modification 6 month testing dated 11/29/2016 was reviewed. All lines, UDCs and sumps passed at that time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Date: 03-24-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Plan review and call to Greg Hohn regarding status. Said Chevron put the install on hold.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-14-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the secondary containment test report for a test conducted 3/25/20. NOTE: 87 and 91 UST annulars hydrostatically monitored and diesel UST AB2481 compliant * Test failures noted below are in violation and must be repaired/replaced and re-tested (see violation) The following components were tested: 87 UST: PASS Vent piping run Fill sump FAIL Product piping run Piping/STP sump 91 UST PASS Vent piping run Fill sump FAIL Product piping run Piping/STP sump UDCs PASS 3/4 5/6 7/8 9/10 15/16 17/18 **TIED TO DIESEL UST** 1/2 11/12 13/14
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-15-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-20-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification for 5-2
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-21-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-25-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Notes: Service request status as of this date: Hi Monica, The anniversary date for the plan approval is 5-11-16. If there are no changes to the scope of work, I can extend the plan check (permit) to the new tank set date (5-31-16). If the tank set gets delayed again we will need a new submittal (application/plans/fees). Lance Lance, The construction start date for this site has been delayed, new start date 05/09/2016. We anticipate setting the new tank 05/31/2016, please let me know if we need to extend our permit that will expire 05/11/2016. Thank You Monica Molinar Project Manager West Wind Consulting/Chevron Products Team 145 S. State College Blvd., Suite 500 Brea, CA 92821 714-671-3212 Office 714-671-3232 Fax 714-745-0415 Cell mmolinar@chevron.com From: Malis, Lance [mailto:LMalis@ochca.com] Sent: Monday, February 29, 2016 9:23 AM To: Molinar, Monica [West Wind] [Contractor] Subject: [**EXTERNAL**] RE: 200913 - 23022 Aliso Creek Rd., [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-27-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Amendment to plans submitted. Initial review and calls to Wayne Perry.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-02-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Jeffrey Crisostomo of Tanknology currently performing a UST system monitoring certification. Current ICC, Veeder-Root and VMI certifications provided. Facility consists of two USTs, nine UDCs and a vent termination sump. The tank annulars are brine filled. Tank annular sensors (303s) appear to be located at the proper position. The four tank top sumps, nine UDcs and vent termination box were free of liquid. Sensors (208s) located at the low areas of secondary containment. Reviewed designated operator (DO) inspection reports during the past 12 months. All documented alarms in the DO reports were followed up on. Corrective action documentation attached to the corresponding reports. Employee training current per 5-19-14 DO report. UPC forms submitted on 4-30-14 (CERS) were reviewed and accepted on this date. Financial responsibility certification valid through 4-30-15. SB 989 testing was performed on 4-28-14. Many [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-08-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site. ELD testing postponed.

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-08-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the secondary containment test report for a post-repair test (SR0141635) conducted 5/8/2020. The following components PASSED testing: Secondary piping run (2) Piping sump (2)
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-15-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for final inspection. All aspects of the installation and modifications have been completed. A full facility UST system monitoring procedure including integrity testing for newly installed components being perfommed. New facility permit will be issued upon operational status results received regarding the testing.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-16-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received modification plans to correct failed secondary containment components.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-18-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Plan reviewed and approved
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-03-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the monitoring system certification test report, site map, and spill bucket test report for a test conducted 5/12/20. The following components PASSED testing: - Tank Annular Sensors (3) - Line Leak Detectors - STP Sump Sensors (3) - Fill Sump Sensors (3) - UDC Sensors (6) - Vent Sump (1) - Fail Safe/Sensor Out - Spill Buckets Visual Test

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-09-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Violation status review. Closed violations that indicated they were abated during the inspection.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-01-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: emailed copy to Lisa Patrick Pfrang, Tanknology ICC- 8202676 VR A29052 3 tanks electronic PLLD sensors - 303 tanks/ sumps, udss 209/463

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-02-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Routine inspection conducted this date in regards to hazardous waste, consent to enter, inspect and take photographs was given by Lisawati Djojo, manager Hazardous waste containers on-site this date consisted of: solids and liquids contaminated with fuel The containers are in compliance with all applicable labeling requirements this date. Per records, employees receive Hazardous Waste Management Training on the job. Consolidated waste receipts/ manifests were reviewed this date. Hazardous Waste Emergency Response information and was posted. Inspected municipal trash dumpster and area, no apparent hazardous waste in this area. Perimeter of facility inspected, no water runoff or staining noted at this time. Discussed Hazardous Waste Program, Hazardous Materials Program, and Management of Universal Waste. E-mailed copy of report this date.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-03-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine hazardous materials and business emergency plan inspection. The cashier, provided consent to inspect. Observed the facility and inspected hazardous materials storage. The following materials were observed inamounts that meet or exceed the minimum volumes required for disclosure: CO2, gasoline, alkaline presoak 105, low pH Cleaner 203, biodiesel B20. Hazardous Materials disclosed in CERS 10441546 match what is reported on site. Employee training

CHEVRON STATION #200913/1404 (Continued) **S123298347**

records were available and reviewed. Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If there is a change in the type of amount of chemicals that are maintained on site, please submit revised

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-07-2014
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for SB 989 testing performed on 4-28-14. Six of the eight UDCs, and the vent termination sump failed.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-11-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Certificate of financial responsibility (CFR) and designated operator (DO) notification updated/submitted in CERS. CFR valid through 4-30-17 DO notification dated 4-20-16 Accepted submittal.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-15-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS. Removed materials from inventory that did not meet the minimum reporting thresholds.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-23-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received change of designated operator (DO) notification dated 9-16-13. Deborah Rowe is listed as the primary DO. ICC # 8164556 exp 6-30-14.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-27-2014
Violations Found: No

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Type: Other, not routine, done by local agency
Eval Notes: Closed plan check. Deleted violation TM02.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-14-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor cert notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-14-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the monitoring system certification test report, site map, and spill bucket test report for a test conducted 5/12/2020. The following components PASSED testing: - Tank Annular Sensors (3) - STP Sump Sensors (3) - Fill Sump Sensors (3) - UDC Sensors (8) - Vacuum Sensors (3) - Fail Safe/Sensor Out - Spill Buckets Visual Test - Line Leak Detectors
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-17-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for a UST system monitoring certification performed on 5-5-16. Violation I198 abated . All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-18-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Fix violation status in EC (close > open for previously corrected violations)
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-30-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed monitoring certification results for testing done on 5/2/2017. All components passed.
Eval Division: Orange County Environmental Health

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-30-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS. Review of test results for diesel tank install and disponser upgrade under SR0126102, all components passed Financial responcibility/CFO expires 4/20/2018 DO Jesus Lopez, exp 4/17/19
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-02-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Lisa Djojo. Hazardous waste properly stored, labeled and dated. Hazardous waste contingency plan available for review. Manifests for hazardous waste pickup reviewed on site. Employee training records kept on site and available for review. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-04-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed submittal. The following modifications need to be made: Both gasoline disclosures should be listed as pure (gasoline has a CAS #). Mixture components box should then be blank. The mixture components box should be blank for the CO2 disclosure. The three disclosures listing 30 gallons as the maximum daily amount are below the disclosure requirement. Delete these chemicals from the disclosure. Propane has been removed from this facility. It also would not need to be disclosed because of the retail exemption. Delete propane from the disclosure. The site map appears to be acceptable. Re submit with modifications. * Emergency response and training plans accepted in CERS
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-15-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Steven Gallardo of Tank Tec currently performing a UST system monitoring certification. Current ICC, Veeder-Root and VMI certifications provided. Facility consists of tr\\hree USTs, nine UDCs and a vent termination sump. The tank annulars are brine filled. Tank annular sensors (303s) appear to be located at the proper position. The Six tank top sumps, nine UDcs

CHEVRON STATION #200913/1404 (Continued) **S123298347**

and vent termination box were free of liquid. Sensors located at the low areas of secondary containment. The vent termination box has a 208 sensor. All other sumps and UDCs have 209 sensors. Reviewed designated operator (DO) inspection reports during the past 12 months. All documented alarms in the DO reports were followed up on. Corrective action documentation attached to the corresponding reports. UST training provided to all employees within the past year by the DO. Records available for review. Financial responsibility certification valid through [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-05-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal. Tank sump sensors were changed from Veeder-Root 208s to 209s.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-23-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for a modification inspection. Alan Evans of Wayne Perry on site. Current ICC (service technician and retro fitting) certifications provided. Current Bravo certification also provided. Piping penetration fittings have been replaced in all nine UDCs and in the vent termination sump. Secondary testing to be performed on this date Witnessed first 15 minute testing on UDCs 9/10, 11/12, 13/14 & 15/16. All four passed. * Send the complete testing results to Health Care Agency

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-17-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received secondary containment testing report for all UDCs and the vent sump. All passed. Violations previously deleted. SR0124107 closed.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-18-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for spill bucket retesting performed on 7-3-13. Regular (87) spill bucket passed (Tanknology). Deleted violation TM05. No violations noted at this time.

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-23-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Plan review. Call for modification status
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-12-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Activities required to close SR
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-23-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Initial plan review
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-12-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File review regarding compliance
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-15-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: SB 989 test notification for 3-30-17
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-22-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval General Type: Other/Unknown
Eval Date: 03-26-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File purge.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-03-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Accepted in CERS this date Financial responsibility/ CFO exp 4/30/2018 DO statement Jesus Lopez exp 4/17/2019
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-03-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine small quantity hazardous waste inspection. The cashier provided consent to inspect. The hazardous waste drum is properly labeled, dated and stored closed. Drums are stored in trash enclosure area. A perimeter walk was conducted. Municipal dumpster does not appear to contain any hazardous waste at the time of the inspection. Manifests were available and reviewed. Last picked up was on 2/3/23 by Adams Services. Emergency response information is posted and employees are reported to be trained. Inspection report emailed permitdesk@chevron.com
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-15-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Muhammad Shah . Hazardous waste properly stored, labeled and dated. Hazardous waste/material contingency plan kept on site and available for review. Manifests for hazardous waste pickup and universal waste handling reviewed on site. Employee training records kept on site and available for review. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-15-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Jeffrey Crisostomo of Tanknology currently performing a UST system monitoring certification.

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Current ICC, Veeder-Root and VMI certifications provided. Facility consists of two USTs, nine UDCs and a vent termination sump. The tank annulars are brine filled. Tank annular sensors (303s) appear to be located at the proper position. The four tank top sumps, nine UDcs and vent termination box were free of liquid. Sensors (208s) located at the low areas of secondary containment. Reviewed designated operator (DO) inspection reports during the past 12 months. All documented alarms in the DO reports were followed up on. Corrective action documentation attached to the corresponding reports. Employee training provided on 4-29-15 by the DO. Records available for review. Latest Recs submittal reviewed and accepted on this date. Financial responsibility certification valid through 4-30-16. SB 989 testing was performed [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-17-2019
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for overfill prevention testing performed on 1-21-19. Regular, supreme and diesel flapper valves passed.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-20-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct routine hazardous waste inspection. Anna Donaldson granted consent to conduct inspection. I walked the perimeter and inspected hazardous waste storage area in trash enclosure. I did not observe any hazardous waste in municipal trash. Fuel filters/hoses (1), spill pads contaminated with fuel (1) and sump/ test water (1) drums are stored closed and labeled. Manifests were reviewed. Business emergency plan is available on site (in Emergency Response Procedures Binder). Emergency contact information is posted on the wall in cashier area and is also available in Emergency Response Procedures Binder.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-24-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed copies of Monitoring System Certification Form and Spill Container Testing Report Form for activities conducted on 5/13/21. All components passed test.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Date: 05-26-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Secondary piping held pressure for > than 60 minutes. All fittings/connections were "soaped". No leaking/bubbling noticed. The annular space for the new piping termination box and UDCs 1/2, 11/12 & 13/14 to be under vacuum (not brine). * Inspection required two separate visits.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-02-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for initial hazardous materials and business emergency plan audit. Observed the facility and inspected hazardous materials storage. The following hazardous materials were observed in amounts that exceed the required disclosure quantities: - Two gasoline USTs - One (> 1000 cubic feet) CO2 compressed gas cylider - Three 55 gallon drums of car wash chemicals
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-08-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted latest submittal in CERS
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-10-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for ELD testing performed on 6-9-16. One tank, two tank top sumps, Junction boxes with tank connection, three UDCs, one transition sump, and the product & vent pipelines were tested. All testing passed per Sergio L Nunez (CA tank tester #06-1727)
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-16-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Initial plan review.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Date: 06-27-2019
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for a monitoring certification performed on 5-13-19. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-05-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for a UST system monitoring certification performed on 6-15-16. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-22-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: file and plan review for status and inspection prep
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-27-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for secondary containment re testing performed on 10-23-14. Nine UDCs and the vent termination sump passed two consecutive 15 minute tests. Closed SR0124107
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-12-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Plan review and approval. Call to Greg Hohn.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-05-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: File review regarding status of modification.
Eval Division: Orange County Environmental Health
Eval Program: UST

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-06-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS accepted DO-Jesus Lopez exp 10/22/2017 finacial responsibility/cfo-4/30/2017
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-22-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-02-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct hazardous materials chemical inventory and business emergency plan inspection this date, consent to enter, inspect and take photographs was given by - Lisawati Djojo, manager The HMBEP has been submitted through CERS10441546 Employee Business Emergency Plan Training was reviewed this date. Safety/cleanup equipment is available. Hazardous materials storage area were reviewed at this time. The facility has the following hazardous materials that exceed the required disclosure quantities: -pH low car wash presoak -pH high car waste presoak -CO2 33 gallons -unleaded gas 35000 gal -desiel-10000 gal **Please note, you are required to review the submittal yearly and resubmit prior to March 1st each year. You will get communication (probably email) indicating you should go in and review and resubmit around January of each year as a reminder. Emailed copy of inspection this date.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-02-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Routine inspection conducted this date in regards to underground storage tank, consent to enter, inspect and take photographs was given by Lisawati Djojo, manager Monitoring system certification was conducted at this time. Jorge Hernandez, of Tanknology performed the monitor cert. Ensure submittal of monitor cert test results within 30 days. Tester provided the following certifications: ICC tech exp 6/30/2017 Veeder-Root tech #b45883 exp 8/13/2017 VMI/TLDT-5000 exp 2/11/18 Number of UST s -3 with 303 sensors Leak detector type -electronic Veeder Root Sensor types - 209's in tank sumps, 208 in vent termination box 9 UDC type -208's in dispensers The Veeder-Root

CHEVRON STATION #200913/1404 (Continued) **S123298347**

monitoring panel showed all functions normal. Sensors and sumps in good order this date. The following documents were available for review: CUPA Business Activities form, CUPA Business Owner / Operator Identification form CUPA UST Facility Information form, CUPA UST Tank Information CUPA [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-08-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: A on-site follow-up inspection was conducted this date (5/8/20). The violations noted below are in reference to a review of this facility's secondary containment test conducted 3/25/20. On this date Juan Martinez (Wayne Perry) provided current ICC and a Fastech ELD certifications (hydrostatic testing). Both the 87 and 91 STP sumps and the 87 and 91 product piping runs were tested for post-repair tightness (see SR0141635) to meet the secondary containment test requirements. OUTSTANDING VIOLATIONS - 5/8/20 NONE CORRECTED VIOLATIONS - 5/8/20 I382 - The following UST components were repaired and subsequently re-tested this date to meet secondary containment requirments. 87 STP sump: PASS (NOTE: Initially failed test, but sump was emptied of water, and putty was re-applied and cured. Second test yielded PASS results). 91 STP sump: PASS 87 product line: PASS 91 product line: PASS An inspection report is to be emailed to: permitdesk@chevron.com

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-13-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for the tank set. 10,000 gallon brine filled Xerxes tank on site, still on truck bed. UL # S-993266 Tank was placed on a designated inspection area. No tank damage or leaking was observed. Tank was set in tank pit, secured and pressurized to 5 psi. Two four inch liquid filled guages were used to determine pressure. All fittings (bungs & bolts) for the tank were "soaped". No bubbling observed. Pressure held for > one hour with no indication of pressure loss. Refer to field activity page and chain of custody for further details regarding the soil sampling.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Luis Navarro of Tanknology currently performing a UST system monitoring certification. Current ICC, Veeder-Root and VMI certifications provided. Facility consists of three USTs, nine UDCs and a vent termination sump. The

CHEVRON STATION #200913/1404 (Continued) **S123298347**

tank annulars are brine filled. Tank annular sensors (303s) appear to be located at the proper position. The Six tank top sumps, nine UDCs and the vent termination box were free of liquid. Sensors located at the proper area of secondary containment. Leak detectors are electronic Veeder Root. Veeder-Root 209's are in the tank sumps. Veeder-Root 208's are in the vent termination box and UDCs. Vacuum sensors (463s) for the diesel components and UDCs 1/2, 15/16 & 17/18. Reviewed designated operator (DO) inspection reports during the past 12 months. All documented alarms in the DO reports were followed up on. Corrective action verbiage/documentation attached to the corresponding reports. UST training [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-15-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine inspection. Walked facility with the latest submitted site map. Did not observe any additional hazardous materials stored at or above disclosure threshold. Site map was accurate as to the various disclosed locations. Reviewed and accepted latest submittal in CERS.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Coordinates:
Site ID: 104900
Facility Name: Chevron Station #200913/1404
Env Int Type Code: HWG
Program ID: 10441546
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.592860
Longitude: -117.728520

Affiliation:
Affiliation Type Desc: Environmental Contact
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004 (ATTN: PERMIT DESK)
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94583
Affiliation Phone: ,

Affiliation Type Desc: UST Permit Applicant
Entity Name: CHARLES BITTLE - 6/21/2016
Entity Title: RETAIL HES
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Affiliation Zip: Not reported
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: UST Tank Owner
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: CUPA District
Entity Name: Orange County Env Health
Entity Title: Not reported
Affiliation Address: 1241 East Dyer RoadSuite 120
Affiliation City: Santa Ana
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92705-5611
Affiliation Phone: (714) 433-6406,

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004 (ATTN: PERMIT DESK)
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94583
Affiliation Phone: ,

Affiliation Type Desc: UST Property Owner Name
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: UST Tank Operator
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: Parent Corporation
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: Not reported

CHEVRON STATION #200913/1404 (Continued) **S123298347**

Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Document Preparer
Entity Name:	Pedro R Carranza
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Identification Signer
Entity Name:	Pedro R Carranza
Entity Title:	RETAIL HES SPECIALIST
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Legal Owner
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004 (ATTN: PERMIT DESK)
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94583
Affiliation Phone:	(925) 842-9002,
Affiliation Type Desc:	Operator
Entity Name:	Chevron Station #200913/1404
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(949) 362-5166,
Affiliation Type Desc:	Property Owner
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004 (ATTN: PERMIT DESK)
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94583
Affiliation Phone:	(925) 842-9002,

F28
WSW
1/8-1/4
0.200 mi.
1057 ft.

CHEVRON STATION #200913/1404
23022 ALISO CREEK RD
ALISO VIEJO, CA 92656

Site 6 of 6 in cluster F

UST **U004354138**
N/A

Relative:
Higher

Actual:
485 ft.

UST:

Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Facility ID:	FA0024729
Permitting Agency:	Orange County Environmental Health
CERSID:	10441546
Latitude:	33.5928600
Longitude:	-117.728520
Owner type:	Non-Government
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Tank owner mailing address:	P.O. BOX 6004, ATTN: PERMIT DESK
Tank owner mailing city:	SAN RAMON
Tank owner mailing zip:	94583
Tank owner mailing state:	CA
Tank operator name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Tank operator mailing address:	P.O. BOX 6004, ATTN: PERMIT DESK
Tank operator mailing city:	SAN RAMON
Tank operator mailing zip:	94583
Tank operator mailing state:	CA
Tankidnumber:	3
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	5/13/2016 12:00:00 AM
Tank num of compartments:	1
Tank contents:	13
Tank capacity gallons:	10000
Tank type:	Double Wall
Tank pc construction:	Fiberglass
Tank pwpiping construction:	Fiberglass
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	Yes
Tank ball float:	No
Tank spill bucket:	Yes

Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Facility ID:	FA0024729
Permitting Agency:	Orange County Environmental Health
CERSID:	10441546
Latitude:	33.5928600

CHEVRON STATION #200913/1404 (Continued) **U004354138**

Longitude:	-117.728520
Owner type:	Non-Government
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Tank owner mailing address:	P.O. BOX 6004, ATTN: PERMIT DESK
Tank owner mailing city:	SAN RAMON
Tank owner mailing zip:	94583
Tank owner mailing state:	CA
Tank operator name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Tank operator mailing address:	P.O. BOX 6004, ATTN: PERMIT DESK
Tank operator mailing city:	SAN RAMON
Tank operator mailing zip:	94583
Tank operator mailing state:	CA
Tankidnumber:	2
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	6/22/2004 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Premium Unleaded
Tank capacity gallons:	15000
Tank type:	Double Wall
Tank pc construction:	Fiberglass
Tank pwpiping construction:	Flexible
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	Yes
Tank ball float:	No
Tank spill bucket:	Yes

Name:	CHEVRON STATION #200913/1404
Address:	23022 ALISO CREEK RD
City,State,Zip:	ALISO VIEJO, CA 92656
Facility ID:	FA0024729
Permitting Agency:	Orange County Environmental Health
CERSID:	10441546
Latitude:	33.5928600
Longitude:	-117.728520
Owner type:	Non-Government
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Tank owner mailing address:	P.O. BOX 6004, ATTN: PERMIT DESK
Tank owner mailing city:	SAN RAMON
Tank owner mailing zip:	94583

CHEVRON STATION #200913/1404 (Continued) **U004354138**

Tank owner mailing state:	CA
Tank operator name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Tank operator mailing address:	P.O. BOX 6004, ATTN: PERMIT DESK
Tank operator mailing city:	SAN RAMON
Tank operator mailing zip:	94583
Tank operator mailing state:	CA
Tankidnumber:	1
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	6/22/2004 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Regular Unleaded
Tank capacity gallons:	20000
Tank type:	Double Wall
Tank pc construction:	Fiberglass
Tank pwpiping construction:	Flexible
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	Yes
Tank ball float:	No
Tank spill bucket:	Yes

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29 **SUSAN LYSTER** **RCRA NonGen / NLR** **1027088251**
SSE **2 RAINWOOD** **CAC003160661**
1/8-1/4 **ALISO VIEJO, CA 92656**
0.236 mi.
1248 ft.

Relative: **Lower**

Actual: **384 ft.**

RCRA Listings:

Date Form Received by Agency:	20220207
Handler Name:	Susan Lyster
Handler Address:	2 RAINWOOD
Handler City,State,Zip:	ALISO VIEJO, CA 92656
EPA ID:	CAC003160661
Contact Name:	SUSAN LYSTER
Contact Address:	2 RAINWOOD
Contact City,State,Zip:	ALISO VIEJO, CA 92656
Contact Telephone:	714-357-3720
Contact Fax:	Not reported
Contact Email:	SUSANLYSTER@YAHOO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	2 RAINWOOD
Mailing City,State,Zip:	ALISO VIEJO, CA 92656
Owner Name:	Susan Lyster
Owner Type:	Other

SUSAN LYSTER (Continued) **1027088251**

Operator Name:	Susan Lyster
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20220207
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: SUSAN LYSTER	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	2 RAINWOOD
Owner/Operator City,State,Zip:	ALISO VIEJO, CA 92656
Owner/Operator Telephone:	714-357-3720
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

SUSAN LYSTER (Continued) **1027088251**

Owner/Operator Indicator: Operator
Owner/Operator Name: SUSAN LYSTER
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 2 RAINWOOD
Owner/Operator City,State,Zip: ALISO VIEJO, CA 92656
Owner/Operator Telephone: 714-357-3720
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20220207
Handler Name: SUSAN LYSTER
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

G30 **UNITED PARCEL SERVICE** **RCRA-LQG** **1000594559**
SW **22 BROOKLINE DRIVE** **LUST** **CAD983584004**
1/4-1/2 **LAGUNA HILLS, CA 92656** **CERS HAZ WASTE**
0.421 mi. **SWEEPS UST**
2224 ft. **Site 1 of 2 in cluster G** **CERS TANKS**
CA FID UST
Relative: **CHMIRS**
Higher **FINDS**
ECHO
Actual: **Cortese**
595 ft. **HIST CORTESE**
CERS

RCRA Listings:
Date Form Received by Agency: 20220217
Handler Name: United Parcel Service
Handler Address: BROOKLINE DRIVE
Handler City,State,Zip: LAGUNA HILLS, CA 92656
EPA ID: CAD983584004

UNITED PARCEL SERVICE (Continued) **1000594559**

Contact Name:	CHARI AL KILANI
Contact Address:	BROOKLINE DRIVE
Contact City,State,Zip:	LAGUNA HILLS, CA 92656
Contact Telephone:	949-643-6644
Contact Fax:	Not reported
Contact Email:	SOUTHCALENVIRONMENTAL@UPS.COM
Contact Title:	FACILITIES ENGINEER
EPA Region:	09
Land Type:	Private
Federal Waste Generator Description:	Large Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	2021
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Ca
State District:	4
Mailing Address:	BROOKLINE DRIVE
Mailing City,State,Zip:	LAGUNA HILLS, CA 92656
Owner Name:	United Parcel Service Inc
Owner Type:	Private
Operator Name:	United Parcel Service Inc
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20220630
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No

UNITED PARCEL SERVICE (Continued) **1000594559**

Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2021

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste
Waste Code:	D002
Waste Description:	Corrosive Waste
Waste Code:	D003
Waste Description:	Reactive Waste
Waste Code:	D005
Waste Description:	Barium
Waste Code:	D006
Waste Description:	Cadmium
Waste Code:	D007
Waste Description:	Chromium
Waste Code:	D008
Waste Description:	Lead
Waste Code:	D039
Waste Description:	Tetrachloroethylene
Waste Code:	P075
Waste Description:	Nicotine, & Salts (Or) Pyridine, 3-(1-Methyl-2-Pyrrolidinyl)-,(S)-, & Salts
Waste Code:	U002
Waste Description:	2-Propanone (I) (Or) Acetone (I)
Waste Code:	U117
Waste Description:	Ethane, 1,1'-Oxybis-(I) (Or) Ethyl Ether (I)
Waste Code:	U239
Waste Description:	Benzene, Dimethyl- (I,T) (Or) Xylene (I)

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	UNITED PARCEL SERVICE INC
Legal Status:	Private
Date Became Current:	19910610
Date Ended Current:	Not reported
Owner/Operator Address:	55 GLENLAKE PKWY NE

UNITED PARCEL SERVICE (Continued) **1000594559**

Owner/Operator City,State,Zip:	ATLANTA, GA 30328
Owner/Operator Telephone:	661-313-1830
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	SOUTHCALENVIRONMENTAL@UPS.COM
Owner/Operator Indicator:	Operator
Owner/Operator Name: NOT REQUIRED	
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: UNITED PARCEL SERVICE INC	
Legal Status:	Private
Date Became Current:	19910610
Date Ended Current:	Not reported
Owner/Operator Address:	55 GLENLAKE PKWY NE
Owner/Operator City,State,Zip:	ATLANTA, GA 30328
Owner/Operator Telephone:	661-313-1830
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	SOUTHCALENVIRONMENTAL@UPS.COM
Owner/Operator Indicator:	Owner
Owner/Operator Name: VALACAL	
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: UNITED PARCEL SERVICE INC	
Legal Status:	Private
Date Became Current:	19910610
Date Ended Current:	Not reported
Owner/Operator Address:	55 GLENLAKE PKWY NE
Owner/Operator City,State,Zip:	ATLANTA, GA 30328
Owner/Operator Telephone:	661-313-1830
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	SOUTHCALENVIRONMENTAL@UPS.COM
Owner/Operator Indicator:	Owner
Owner/Operator Name: UNITED PARCEL SERVICE INC	
Legal Status:	Private

UNITED PARCEL SERVICE (Continued) **1000594559**

Date Became Current:	19910610
Date Ended Current:	Not reported
Owner/Operator Address:	55 GLENLAKE PKWY NE
Owner/Operator City,State,Zip:	ATLANTA, GA 30328
Owner/Operator Telephone:	661-313-1830
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	SOUTHCALENVIRONMENTAL@UPS.COM

Historic Generators:

Receive Date:	20220217
Handler Name: UNITED PARCEL SERVICE	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Ca
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

Receive Date:	19910610
Handler Name: UNITED PARCEL SERVICE	
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Ca
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	20220124
Handler Name: UNITED PARCEL SERVICE	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Ca
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

List of NAICS Codes and Descriptions:

NAICS Code:	49211
NAICS Description:	COURIERS AND EXPRESS DELIVERY SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

UNITED PARCEL SERVICE (Continued) **1000594559**

Evaluation Action Summary:
Evaluations: No Evaluations Found

LUST:

Name:	UNITED PARCEL SERVICE
Address:	22 BROOKLINE
City,State,Zip:	ALISO VIEJO, CA 92656
Lead Agency:	ORANGE COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605902532
Global Id:	T0605902532
Latitude:	33.5920773
Longitude:	-117.7289683
Status:	Completed - Case Closed
Status Date:	01/04/1996
Case Worker:	GH
RB Case Number:	9UT3197
Local Agency:	ORANGE COUNTY LOP
File Location:	Local Agency
Local Case Number:	95UT025
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel, Gasoline
EPA Region:	9
Coordinate Source:	Google Geocode
Cuf Case:	NO
Quantity Released Gallons:	0
Begin Date:	04/06/1995
Leak Reported Date:	04/06/1995
How Discovered:	Tank Closure
How Discovered Description:	Not reported
Discharge Source:	Not reported
Discharge Cause:	Not reported
Stop Method:	Close and Remove Tank
Stop Description:	Not reported
No Further Action Date:	01/04/1996
CA Water Watershed Name:	San Juan - Laguna - Aliso (901.13)
Dwr Groundwater Subbasin Name:	Not reported
Disadvantaged Community:	Not reported
CA Enviroscreen 3 Score:	1-5% (lowest scores)
CA Enviroscreen 4 Score:	5-10%
Military DOD Site:	No
Facility Project Subtype:	Not reported
RWQCB Region:	SAN DIEGO RWQCB (REGION 9)
Site History:	Not reported

LUST:

Global Id:	T0605902532
Contact Type:	Local Agency Caseworker - Primary Caseworker
Contact Name:	GENIECE HIGGINS
Organization Name:	ORANGE COUNTY LOP
Address:	1241 EAST DYER ROAD SUITE 120
City:	SANTA ANA
Email:	ghiggins@ochca.com
Phone Number:	7144336260

UNITED PARCEL SERVICE (Continued) **1000594559**

LUST:
Global Id: T0605902532
Action Type: ENFORCEMENT
Date: 04/14/2021
Action: Historic Files

Global Id: T0605902532
Action Type: Other
Date: 04/06/1995
Action: Leak Discovery

Global Id: T0605902532
Action Type: Other
Date: 04/06/1995
Action: Leak Reported

Global Id: T0605902532
Action Type: ENFORCEMENT
Date: 01/04/1996
Action: Closure/No Further Action Letter

LUST:
Global Id: T0605902532
Status: Open - Case Begin Date
Status Date: 04/06/1995

Global Id: T0605902532
Status: Completed - Case Closed
Status Date: 01/04/1996

LUST REG 9:
Region: 9
Status: Case Closed
Case Number: 9UT3197
Local Case: 95UT25
Substance: Gasoline
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Local Agency: Orange
How Found: Not reported
How Stopped: Not reported
Source: Not reported
Cause: Not reported
Lead Agency: Local Agency
Case Type: Soil only
Date Found: / /
Date Stopped: / /
Confirm Date: / /
Submit Workplan: 4/26/95
Prelim Assess: / /
Desc Pollution: Not reported
Remed Plan: / /
Remed Action: Not reported
Began Monitor: Not reported

UNITED PARCEL SERVICE (Continued) **1000594559**

Release Date: 04/26/1995
Enforce Date: Not reported
Closed Date: 1/4/96
Enforce Type: Not reported
Pilot Program: LOP
Basin Number: 901.13
GW Depth: 65'+
Beneficial Use: MUNBU
NPDES Number: Not reported
Priority: 2A
File Dispn: Administratively opened on database, however no file physically exists
Interim Remedial Actions: Not reported
Cleanup and Abatement order Number: Not reported
Waste Discharge Requirement Number: Not reported

ORANGE CO. LUST:
Name: UNITED PARCEL SERVICE
Address: 22 BROOKLINE DR
City,State,Zip: ALISO VIEJO, CA 92656
Region: ORANGE
Facility Id: 95UT025
Current Status: CLOSED
Type of Closure: Closure certification issued
Released Substance: Not reported
Date Closed: 01/04/1996
File Location: Local Agency

CERS HAZ WASTE:
Name: UPS - LAGUNA
Address: 22 BROOKLINE DR
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 79269
CERS ID: 10156111
CERS Description: Hazardous Waste Generator

SWEEPS UST:
Name: UNITED PARCEL SERVICE
Address: 22 BROOKLINE DR
City: ALISO VIEJO
Status: Active
Comp Number: 10049
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-010049-000001
Tank Status: A
Capacity: 1000
Active Date: Not reported
Tank Use: PETROLEUM
STG: P
Content: Not reported
Number Of Tanks: 5

UNITED PARCEL SERVICE (Continued) **1000594559**

Name: UNITED PARCEL SERVICE
Address: 22 BROOKLINE DR
City: ALISO VIEJO
Status: Active
Comp Number: 10049
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-010049-000004
Tank Status: A
Capacity: 1000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: OTHER
Number Of Tanks: Not reported

Name: UNITED PARCEL SERVICE
Address: 22 BROOKLINE DR
City: ALISO VIEJO
Status: Active
Comp Number: 10049
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-010049-000005
Tank Status: A
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Name: UNITED PARCEL SERVICE
Address: 22 BROOKLINE DR
City: ALISO VIEJO
Status: Active
Comp Number: 10049
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-010049-000006
Tank Status: A
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P

UNITED PARCEL SERVICE (Continued) **1000594559**

Content: DIESEL
Number Of Tanks: Not reported

Name: UNITED PARCEL SERVICE
Address: 22 BROOKLINE DR
City: ALISO VIEJO
Status: Active
Comp Number: 10049
Number: 9
Board Of Equalization: Not reported
Referral Date: 09-30-92
Action Date: 09-15-92
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 30-000-010049-000007
Tank Status: A
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

CERS TANKS:
Name: UPS - LAGUNA
Address: 22 BROOKLINE DR
City,State,Zip: ALISO VIEJO, CA 92656
Site ID: 79269
CERS ID: 10156111
CERS Description: Underground Storage Tank

CA FID UST:
Facility ID: 30010022
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7146436644
Mail To: Not reported
Mailing Address: 25201 PASEO ALICIA
Mailing Address 2: Not reported
Mailing City,St,Zip: ALISO VIEJO 92656
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

CHMIRS:
Name: Not reported
Address: 22 BROOKLINE DR
City,State,Zip: ALISO VIEJO, CA 92656
OES Incident Number: 22-6381
OES notification: 10/28/2022

UNITED PARCEL SERVICE (Continued) **1000594559**

OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Road
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Type:	PETROLEUM
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1138
Year:	2022
Agency:	Hazmat1
Incident Date:	10/28/2022
Admin Agency:	Orange County Emergency Management Division
Amount:	Not reported
Contained:	Stopped,Contained
Site Type:	Not reported
E Date:	Not reported
Substance:	Gasoline
Quantity Released:	20
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	No

UNITED PARCEL SERVICE (Continued) **1000594559**

#2 Pipeline:	No
#3 Pipeline:	No
#1 Vessel >= 300 Tons:	No
#2 Vessel >= 300 Tons:	No
#3 Vessel >= 300 Tons:	No
Evacs:	No
Injuries:	No
Fatals:	No
Comments:	Not reported
Description:	Caller states there was a motor vehicle accident which caused a release of 20 gallons of gasoline onto asphalt. Release is stopped and contained with no waterways impacted. Contractor is performing cleanup.

FINDS:
Registry ID: 110002845556

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
All generators and treatment, storage, and disposal (TSD) facilities who handle hazardous waste are required to report to the EPA Administrator at least once every two years. The data collected is used to create the National Biennial Resource Conservation and Recovery Act (RCRA) Hazardous Waste Report. This data is processed within the RCRA Information (RCRAInfo) database
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.
The California Environmental Protection Agency (CalEPA) has recently implemented a new data warehouse system (nSite). This data warehouse combines and merges facility and site information from five different systems managed within CalEPA. The five systems are: California Environmental Reporting System (CERS),EnviroStor, GeoTracker, California Integrated Water Quality System (CIWQS), andToxic Release Inventory (TRI).
California's Hazardous Waste Tracking System Data Mart (HWTS-DATAMART) provides information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000594559
Registry ID:	110002845556
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002845556
Name:	UNITED PARCEL SERVICE
Address:	22 BROOKLINE DRIVE
City,State,Zip:	LAGUNA HILLS, CA 92656

CORTESE:
Name: UNITED PARCEL SERVICE

UNITED PARCEL SERVICE (Continued) **1000594559**

Address:	22 BROOKLINE
City,State,Zip:	ALISO VIEJO, CA 92656
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0605902532
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

HIST CORTESE:

edr_fname:	UNITED PARCELS SERVICE
edr_fadd1:	22 BROOKLINE
City,State,Zip:	ALISO VIEJO, CA 92656
Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	9UT3197

CERS:

Name:	UNITED PARCEL SERVICE
Address:	22 BROOKLINE
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	769575
CERS ID:	T0605902532
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	GENIECE HIGGINS - ORANGE COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	1241 EAST DYER ROAD SUITE 120
Affiliation City:	SANTA ANA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	7144336260,

Name:	UPS - LAGUNA
Address:	22 BROOKLINE DR
City,State,Zip:	ALISO VIEJO, CA 92656
Site ID:	79269

UNITED PARCEL SERVICE (Continued) **1000594559**

CERS ID: 10156111
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 01-07-2019
Citation: HSC 6.7 25291(a)(2) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(a)(2)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Returned to compliance on 02/05/2019. Facility is still out of compliance on the failed SB989 tested components.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 01-16-2020
Citation: HSC 6.7 25284 - California Health and Safety Code, Chapter 6.7, Section(s) 25284
Violation Description: Failure to obtain a valid permit to operate from the UPA including but not limited to unpaid permit fees.
Violation Notes: This facility currently has an outstanding violation that has prevented the operator from obtaining a current Underground Storage Tank Permit from this agency. The following violation is uncorrected: I481 (dated 10/1/2019) - Facility has failed Secondary component for theT4 New oil piping sump and T5Waste oil piping sump.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 10-21-2020
Citation: HSC 6.7 25291(a)(1) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(a)(1)
Violation Description: Failure to construct, operate, and maintain primary containment as product-tight.
Violation Notes: A test of Tank 1's (87 unleaded) annular space conducted in September 2020 indicates that the annular space is unable to hold vacuum pressure. Additionally the test report indicates the contents of the UST have been removed and water has subsequently entered the primary tank. Submit plans to this agency within 30 days (11/21/2020) detailing the repair or removal of this tank.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 08-16-2021
Citation: HSC 6.7 25284 - California Health and Safety Code, Chapter 6.7, Section(s) 25284
Violation Description: Failure to obtain a valid permit to operate from the UPA including but not limited to unpaid permit fees.
Violation Notes: This facility is operating underground tanks without a permit due to

UNITED PARCEL SERVICE (Continued) **1000594559**

failure in gasoline's tanks primary containment in 9/2020. Failure in gasoline tank must be addressed within 30 days of this inspection report to prevent further enforcement action.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 02-05-2021
Citation: 23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description: Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 pounds per square inch and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes: Returned to compliance on 03/26/2021. Diesel line leak detector in South fuel area did not pass test. Failed line leak detector must be repaired/replaced and retested within 30 days of this inspection.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 08-16-2021
Citation: HSC 6.7 25291(a)(2) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(a)(2)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Diesel West, New Oil and Waste Oil Lines, UDCs 2 and 8 South failed tests on 7/22/21. Investigation to determine all secondary containment failures must be conducted and if necessary, plans for repair/replacement must be submitted to this Agency within 30 days of this report.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 09-29-2021
Citation: 23 CCR 16 2712(b)(1)(G) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(1)(G)
Violation Description: Failure to comply with one or more of the following overfill prevention equipment requirements: Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or Restrict delivery of flow to the tank at least 30 minutes before the tank overfills, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity; and activate an audible alarm at least five minutes before the tank overfills; or Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent of capacity; or Provide positive shut-off of flow to the tank so that none of the fittings located on the top of the tank are exposed to

UNITED PARCEL SERVICE (Continued) **1000594559**

product due to overfilling. Install/retrofit overfill prevention equipment that does not use flow restrictors on vent piping to meet overfill prevention equipment requirements when the overfill prevention equipment is installed, repaired, or replaced on and after October 1, 2018. For USTs installed before October 1, 2018, perform an inspection by October 13, 2018 and every 36 months thereafter. For USTs installed on and after October 1, 2018, perform an inspection at installation and every 36 months thereafter. Inspected within 30 days after a repair to the overfill prevention equipment. Inspected using an applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Inspected by a certified UST service technician. Maintain records of overfill prevention equipment inspection for 36 months.

Violation Notes: Returned to compliance on 12/13/2021. The Shut-Off Valve in New Oil tank (T4) is broken and waste oil tank's overfill prevention equipment was not tested due to broken/disconnected probe wiring. Overfill prevention equipment for both new oil and waste oil tanks must replaced/repaired and retested within 30 day of this inspection report.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 01-27-2021
Citation: HSC 6.7 25292.2(a) - California Health and Safety Code, Chapter 6.7, Section(s) 25292.2(a)
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 02/03/2021. Certification of Financial Responsibility (CFR) for this facility expired on 4/26/20. Current CFR must be submitted electronically and a copy be maintained on site within 30 days of this inspection.
Violation Division: Orange County Environmental Health
Violation Program: UST
Violation Source: CERS,

Site ID: 79269
Site Name: UPS - Laguna
Violation Date: 01-07-2019
Citation: 23 CCR 16 2665(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665(b)
Violation Description: "Failure to submit a copy of the overfill prevention equipment inspection results on the Overfill Prevention Equipment Inspection Report Form to the UPA within 30 days after the inspection. "
Violation Notes: Returned to compliance on 02/05/2019. OBSERVATION: Owner/operator failed to submit a copy of the overfill prevention equipment inspection results on the Overfill Prevention Equipment Inspection Report Form to the UPA within 30 days after the inspection. CORRECTIVE ACTION: Submit a copy of the overfill prevention equipment inspection results on the Overfill Prevention Equipment Inspection Report Form to the UPA within 30 days. Allan Painter states that the overfill inspection was done in September of 2018, he does not have a copy of the results, and they have not been submitted to this Agency. Find and submit a copy of the overfill testing results within

UNITED PARCEL SERVICE (Continued) **1000594559**

	30 days to abate this violation.
Violation Division:	Orange County Environmental Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	79269
Site Name:	UPS - Laguna
Violation Date:	01-08-2018
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes:	Returned to compliance on 02/14/2018. OBSERVATION: The facility has not accurately submitted the Hazardous Materials Inventory Chemical Description pages make the following changes and resubmit to the CUPA. 1. On the chemical disclosures for solids (which most are as you solidify most waste), change the units for solids to pounds, and delete all chemical disclosures that do not exceed 500 pounds for solids. In the case of the wastes from spills, review of your manifests show that the poundages for: waste flammable solids, waste oxidizing solids, waste organic peroxides, waste corrosive solids and waste other regulated solids are all well under the 500 pounds at all times. Review to verify then remove disclosures for these wastes as well as drain oil filters, drained paper filters, possibly the grease if max daily is less than 500 pounds, remove spent brake fluid, and possibly petroleum contaminated solid if less than 500 pounds stored onsite. 2. research the waste generated in April 2017, listed as 3 drums [Truncated]
Violation Division:	Orange County Environmental Health
Violation Program:	HMRRP
Violation Source:	CERS,
Site ID:	79269
Site Name:	UPS - Laguna
Violation Date:	08-13-2018
Citation:	HSC 6.7 25291(a)(2) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(a)(2)
Violation Description:	Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes:	The following components have been notified as Components FAILING; T3 S- diesel piping sump (visual fail- piping encapsulation deterioration), T4 New Oil piping sump (visual fail- piping encapsulation deterioration) T5 waste oil piping sump (visual fail- piping encapsulation deterioration) T1- 87 piping sump (visual fail- piping encapsulation deterioration), T1- 87 secondary piping run (stated to be from leaking boot inside UDC1) T2 Diesel piping run (stated to be from leaking boot inside UDC3) T2- diesel piping sump (visual fail- piping encapsulation deterioration), Diesel UDC 1 and 3 Please submit a plan check for repair of the failed components to this Agency within 30 days. If there is a question regarding the necessity of plan check for certain repairs or modifications, please contact this Agency for clarification. Plan Check Fees and the Facility Modification Application can be found at www.occupainfo.com Please schedule the retest for the [Truncated]
Violation Division:	Orange County Environmental Health
Violation Program:	UST

UNITED PARCEL SERVICE (Continued) **1000594559**

Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-07-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Onsite UST monitoring cert and inspection. Please note, outstanding violation for secondary containment not being tight is still outstanding, the plan check has been approved under SR0134753, discussion with Allan Painter this date. The contractor had requested to postpone modifications to the system until after the holidays and it was authorized, please note that the UST operating permit will come up for reissue on July 1st, so ensure that all violations are abated quickly to avoid loss of permit to operate. Allan Painter states that they plan on doing the work in the near future. Monitoring certification performed by Bob Toomey, ICC exp 8/31/19, VR- A31644 exp 9/8/2020, VMI exp 8/3/2020 5 tanks onsite, sensors 208/303/305 emailed inspection to Allan Painter this date.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-09-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Kalena Fitzpatrick. Manifests for hazardous waste pickup reviewed on site. Documentation for universal waste handling reviewed on site. Hazardous waste inspection log kept on site and available for review. Employee training records reviewed on site. Hazardous waste properly stored, identified and dated. Hazardous waste contingency kept on site and available for review. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-09-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspected perimeter of facility including the dumpster area. Permission to inspect and take necessary photos granted by Jim Carracino. Manifests for hazardous waste pickup reviewed on site. Documentation for universal waste handling reviewed on site. Hazardous waste inspection log kept on site and available for review. Employee training records reviewed on site. Hazardous waste properly stored, identified and dated. Hazardous waste contingency kept on site and available for review. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Date: 01-12-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed latest disclosures in CERS. Please address the following: Put something other than water in the mixture components box for car wash detergent [chemical name CAS# %weight]. Mixture components boxes are blank for waste aerosols, waste flammable solids, waste oxidizing solids, waste organic peroxides, waste corrosive solids and other regulated substances. At least one line for each of these boxes need to be completed. Fill in the percent weights in the mixture components box for the engine wash disclosure. Different site maps were submitted for the latest two disclosures (11-23-15 & 12-30-15). The 12-30-15 site map is smaller and it is difficult to locate some of the requirements. * Make sure locations for the evacuation staging area, emergency shut offs (electrical, water and natural gas) and sewers are legible. Resubmit after modifications have been performed.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-14-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results regarding the UST system monitor certification performed on 1-9-15. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-16-2020
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: An on-site inspection was conducted this date to witness the annual monitoring system certification. Bob Toomey (Packham & Toomey Inc) conducted the monitoring system certification and provided current Veeder-Root, VMI, and ICC certifications. NOTE: Per operator, T4 Motor Oil and T5 Waste Oil are under consideration to be closed and replaced with APSTs. At this time the tanks are monitored, but are not in use and outstanding violations exist for these USTs (T4 and T5). ALSO NOTE: This monitoring system also includes a remote communication system to alert a corporate office of any alarms at this site. OUTSTANDING VIOLATIONS - 1/16/2020 I382 - Facility has failed Secondary component for the T4 New oil piping sump and T5 Waste oil piping sump. I481 - Facility has failed to correct the above violation and has been been operating without a valid UST permit. This facility contains: 5 - USTs (T1 87, T2 Diesel, T3 South Diesel, T4 Motor Oil, T5 Waste Oil) Monitor [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-22-2014
Violations Found: No

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for the tank system monitoring certification performed on 1-9-14. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-27-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct routine hazardous waste inspection. Jennifer Naughton and Spencer Howmann granted access to conduct inspection in vehicle service and facility's warehouse. I walked the perimeter and through vehicle service area and inspected waste storage areas in vehicle service and warehouse's hazardous waste storage areas. I did not observe any hazardous waste in trash cans throughout facility. All aboveground storage tanks and waste drums storing hazardous waste are stored closed and properly labeled. Manifests were reviewed. Emergency contact information is posted throughout facility.
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-28-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to witness monitoring system certification testing activities and to conduct routine UST inspection. Jason Boos granted consent to conduct inspection. Facility has one diesel, one waste oil and one new motor oil tank. Diesel, waste oil and new motor oil annulars are wet . Sensors shut down respective turbine at sensor out and high liquid level. Diesel tank's piping sump sensor functioned/alarmed properly (visual and audible) and shut down turbine when submerged in water. Waste oil and new motor oil tanks' piping sump sensors functioned/alarmed properly, both visual and audible, when submerged in water. Diesel tank's fill sump is direct bury. Fill sump sensors for waste oil and new motor oil tanks alarmed properly, both visual and audible, when submerged in water. UDCs have stand alone sensors that stop flow of gas when activated and both functioned properly when tested. Diesel line leak detector was tested and passed. Fail-safe and sensor [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-08-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Report emailed to Micahel Granche
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

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Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-08-2018
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Declined materials in CERS this date. Report emailed to Micahel Granche
Eval Division:	Orange County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS,

Eval General Type:	Other/Unknown
Eval Date:	01-09-2014
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	On site for initial hazardous materials and business emergency plan audit Observed the facility and inspected hazardous materials storage. The following hazardous materials were observed in amounts that exceed the required disclosure quantities: - One 55 gallon drum of used radiator coolant - Two 55 gallon drums of new radiator coolant - Two diesel USTs - One gasoline UST - One used oil UST - One new oil UST - One 55 drum of waste brake fluid - Various drums and containers of new oils - Various compressed gas cylinders Chemical disclosure, BEP, site map and facility forms submitted via CERS on 2-28-13. Disclosure to be reviewed.
Eval Division:	Orange County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS,

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-09-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	On site for a routine underground tank inspection and to observe the annual monitor certification for five underground tanks. Met with Bob Toomey of Packham/Toomey Inc. Current ICC, VMI and Veeder Root certifications provided. The five tank top sumps and eight UDCs were free of liquid. Sensors were located at the low area of secondary containment. Secondary testing was performed on 7/18/12 and is current until 7/18/15. Financial certification is valid through 3-25-15. Reviewed monthly designated operator (DO) reports for the past 12 months. DO reports properly completed and followed up on when needed. Corrective action documentation available for review. DO training provided on 9-14-14. Reviewed and did not accept latest UST submittal in CERS. * The sensor model number for the annular space in tanks 2 and 4 are listed as 302s. Per Bob Toomey they are 303s. Please make both changes and resubmit.
Eval Division:	Orange County Environmental Health
Eval Program:	UST
Eval Source:	CERS,

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-12-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Inspected perimeter of facility including the dumpster area. Permission to inspect granted by Kalena Fitzpatrick. Manifests for hazardous waste pickup kept on site and available for review during

UNITED PARCEL SERVICE (Continued) **1000594559**

the past three years. Hazardous waste contingency plan posted on site. Hazardous waste properly stored, labeled and dated. Weekly hazardous waste storage area inspection log kept on site and available for review. No violations noted at this time.

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-12-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine underground tank inspection and to observe the annual monitor certification for five underground tanks. Met with Bob Toomey of Packham/Toomey Inc. Current ICC, VMI and Veeder Root certifications provided. The tank top sumps and UDCs were free of liquid. Sensors were located at the low area of secondary containment. Secondary testing was performed on 7/20/15 and is current until 7/20/18. Financial certification is valid through 4-3-16. Reviewed monthly designated operator (DO) reports for the past 12 months. DO reports properly completed and followed up on when needed. Corrective action documentation available for review. DO training provided to five employees on 4-14-15. Reviewed latest UST submittal in CERS. DO certification is current (12-16-16). CFR is current. No violations noted at this time.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-18-2022
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed Overfill Prevention Equipment Inspection Report Form for tests conducted on 12/13/21 after completion of repairs on New Oil and Used Oil tanks. Fill Tube Shut-Off Valve installed in New Oil tank passed with overfill equipment activating at 94% and new probe in Waste Oil tank was activated at 88%. Please be advised that this facility is still operating remaining tanks without a permit to due outstanding secondary containment violation cited in this agency's inspection report dated 8/16/21 for failure in UDC 8 during testing activities on 7/22/21.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-23-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: The following CLASS II violations remain uncorrected: I382 (dated 8/13/2018) - Facility has failed Secondary component for the T4 New oil piping sump and T5 Waste oil piping sump. I481 (dated 1/16/2020) - Operating UST without a valid permit Failure to correct the violations listed above will result in a Notice of Violation (NOV) and the violations being elevated to Class I, which will require formal enforcement by OC CUPA in the form of an Administrative Enforcement

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Order (AEO) or referral to the District Attorney s Office, which will include the assessment of administrative penalties outlined in H&SC section 25404.1.1. Continue to correct all outstanding violations. An re-inspection of this facility may occur within 30 days of the last inspection (2/16/2020) to determine the status of the above uncorrected violations.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-27-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site to witness monitoring system certification testing activities and to conduct routine UST inspection. A facility contact on site to assist with authorizing tank system for testing activities was not present on site. UDCs have two stand alone sensors, one for diesel pump and one for gasoline. Sensors for diesel dispensers, except for pump #4 that has a broken handle, were tested and passed by shutting down dispenser. Other components in fuel island area could not be tested since gasoline tank which has a leak in primary containment is empty and diesel turbines could not be turned on. Motor oil and used motor oil tanks are not in used and will be tested when testing activities in fuel island are conducted. Valid permit, designated operator documentation, monthly inspection reports, responses to alarms, monitoring plan, response plan, employee training records, tank pages, certification of financial responsibility (expired 4/26/20), copies of monitoring [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-03-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received a copy of Monitoring System Certification Form and Spill Container Testing Report Form for activities conducted on 2/5/21. All tested components passed testing except for the line leak detector for south diesel tank. Please be advised that the failed line leak detector must be repaired/replaced and retested by 3/5/21. Gasoline tank/components were not tested and "failed" due to breach in tank's primary wall. Tank removal plans were submitted to this agency on 2/26/21.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-23-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: An on-site follow-up inspection was conducted this date (3/23/2020). Access to the facility was provided by Johnnie Stankus. The violations noted below are in reference to a visit or review of your facility conducted on 10/11/2019. OUTSTANDING VIOLATIONS - 3/23/2020

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NONE CORRECTED VIOLATIONS - 3/23/2020 I481 - Belshire Environmental Services conducted secondary containment tests of both the Waste Oil and New Oil piping sumps (INCON tests). The contractor demonstrated PASS results for both sumps. This facility has abated all outstanding violations and may now be issued an Underground Storage Tank permit. An inspection report is to be emailed to: JHBAILEY@UPS.COM; jstankus@ups.com

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-08-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-29-2022
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency has received UST removal plans under SR0150117: The following tank(s) are included in the plan check for removal: 1 x 1000 gallon tank, motor oil 1 x 1000 gallon tank, waste oil As the owner and/or operator of the UST(s), the following requirements apply: - All residual liquid, solids, or sludges shall be removed and handled as hazardous waste or recyclable materials - Tank removal and soil sampling procedures must be conducted in accordance with 23CCR 2672 The following documents must be submitted within 60 days of UST removal: - Complete soil/water sample analysis, including the original white copy of the OCHCA chain of custody - Copy of certificate of UST destruction - Copy of uniform hazardous waste manifest(s) for transport of residual liquid, solids, or sludge waste removed from the tank - Hazardous Waste Tank Closure Certification Form Removal plans are valid for one year from the date of approval. Plan Check Fee Notice UST plan [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-01-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Monitor certification notification

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Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-25-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received results for secondary containment testing performed on 7-20 15. All 23 components passed testing.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-11-2019
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This facility has NOT been issued a permit due to Failed Secondary Components. On 7/29/19 - Inspector Lance Malis spoke to District Environmental Coordinator, facility is in the process of getting bids to remove tanks. On 7/9/19 - SR0134753 permit was pulled. Facility will receive a permit once in compliance. PLEASE NOTE: 25299. VIOLATIONS; CIVIL AND CRIMINAL PENALTIES (a) Any operator of an underground tank system shall be liable for a civil penalty of not less than five hundred dollars ($500) or more than five thousand dollars ($5,000) for each underground storage tank for each day of violation for any of the following violations: (1) Operating an underground tank system which has not been issued a permit, in violation of this chapter. .
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-14-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received plans for secondary testing failures from 7/31/18 testing under SR0134753
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-15-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of facility info and emergency plans accepted this date. Noted need for submittal of 2017 submittal inventory.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-11-2016
Violations Found: No

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Eval Type: Other, not routine, done by local agency
Eval Notes: File purge
Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-19-2022
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site to witness secondary containment testing after completion of repairs on UDC 8 that failed during initial SB989 testing on 7/22/21. UDC was filled with water and passed a 15 minute test using Incon. Scope of work approved for this repair was to "Replace OPW bottom entry penetration (PEF-3515X) and retest. However, I was notified that the repair included breaking ground and replacing boot from outside of UDC. This agency did not witness soap test on new boot and verify that line held pressure after installation and before backfilling. Brandon McDaniel of Jones Covey Group Incorporated conducted test and has valid ICC and monitoring equipment manufacturing certifications.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 06-17-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS. Sensors model numbers were corrected for tank numbers 2 & 4. CFR and LRP updated
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-29-2021
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: I reviewed Overfill Prevention Equipment Inspection Report Form for activities conducted on 9/13/21. Facility has Fill Tube Shut-Off Valve for overfill protection. Overfill prevention equipment passed test in all tanks, except for New Oil tank (T4), with equipment activating at 95%. Waste oil tank's overfill prevention equipment was not tested due to broken/disconnected probe wiring. Overfill prevention equipment for waste oil must replaced/repaired and retested within 30 day of this inspection report. The Shut-Off Valve in New Oil tank (T4) is broken and must replaced/repaired and retested within 30 day of this inspection report.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-01-2019
Violations Found: No
Eval Type: Other, not routine, done by local agency

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Notes: On 5-3-19 the following secondary components passed testing: Product piping, vent piping and turbine sump for tanks 1 (gasoline) & 2 (diesel) Turbine sump for tank 3 (diesel) Did not list results for UDCs 1 & 3. Currently the three sumps, two product lines, two vent lines and two sumps are being tested (6 month retest). Francisco Urena of P F Services Inc on site to perform testing. Current ICC and Incon certifications provided. Tanks 4 (new oil) & 5 (waste oil) were not repaired/modified. Violations I481 (operating without a permit) and I382 (secondary containment maintained tight and has been confirmed by testing) are still open. Tanks need to be immediately repaired or removed. Submit new modification or removal plans to Health Care Agency.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-27-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS submittal accepted Do Pablo Fuerte, exp 9/30/18
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-08-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: CERS review
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-09-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine underground tank inspection and to observe the annual monitor certification for five underground tanks. Met with Bob Toomey of Packham/Toomey Inc. Current ICC, VMI and Veeder Root certifications provided. The five tank top sumps and eight UDCs were free of liquid. Sensors were located at the low area of secondary containment. Secondary testing was conducted on 7/18/12 and is current until 7/18/15. Financial certification is valid through 3-27-14. Reviewed the compliance binder, which includes the current permitting forms and monitoring plan. Reviewed monthly designated operator (DO) reports. DO reports properly completed and followed up on when needed. DO training provided according to the 12-5-13 report. No violations noted at this time.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-09-2015
Violations Found: No

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Type: Routine done by local agency
Eval Notes: On site for a routine compliance inspection. Walked facility with Jim Carracino. Did not observe any qualifying hazardous materials stored on site that were omitted from the disclosure. Reviewed and did not accept the chemical inventory and site map submittal in CERS. Please address the following: If the chemical is listed as pure, List the CAS number and leave the mixture components box blank. When the chemical is listed as a mixture or waste, make sure the mixture components box has at least one line completely filled out (chemical name, CAS # and % weight). If there is not a CAS number for the component, delete that line from the box. The site map was not legible. Make sure locations for all items on the checklist are included and legible on the site map. Resubmit after modifications have been performed. * Latest response and training plans were accepted in CERS
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-16-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed monitoring certification dated 1/8/2018. All components passed.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-18-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS submittal, DO updated, Robert Toomey ICC 5253051-uc financial resp/cfo letter exp 3/6/2018
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-19-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed monitoring system certification from testing dated 1/9/17. All components passed.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-20-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received report for a UST system monitoring certification performed on 1-12-16. All monitoring equipment operational per manufacturer's specifications.
Eval Division: Orange County Environmental Health

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-05-2021
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for follow up inspection to witness monitoring system certification testing activities for components that were not tested during initial inspection conducted on1/27/21. Gasoline tank's annular and sump sensors were only tested for functionality, visual and audible alarms, due to leak in primary containment and it being empty. Both sensors alarmed properly. All other tanks' annulars are wet." Diesel tanks' annular sensors alarmed properly (both visual and audible) and shut down respective turbine at sensor out and low liquid level. Waste oil and new motor oil tanks' annular sensors alarmed properly, both visual and audible, at sensor out and low liquid level. Turbine sump sensors for diesel tanks alarmed properly (visual and audible) and shut down respective turbine when submerged in water. Fuel tanks have direct bury fill sumps at this facility. Fill sump sensors for waste oil and new motor oil tanks alarmed properly, both visual and audible, [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-03-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS info accepted DO -Robert Toomey financial responsibility/CFO exp 3/6/2018 and 3/24/2018
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-19-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: This Agency received the secondary containment test report for a test conducted 3/23/2020. This test was conducted in reference to SR0134753. The following components PASSED testing: Piping/fill sump (Used oil, new oil)
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-16-2021
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed Secondary Containment Testing Report Form (3 year SB989) for activities conducted on 7/22/21. All components passed test, except for the following: - Diesel West - Product Line - New Oil - Product Line - Waste Oil Line - UDCs 2 and 8 South Investigation to determine all secondary containment failures must be

UNITED PARCEL SERVICE (Continued) **1000594559**

conducted and if necessary, plans for repair/replacement must be submitted to this Agency within 30 days of this report. In addition, this facility is currently operating underground tanks without a permit since this agency has not received any correspondence or notifications regarding removing and/or replacing gasoline tank that had a primary containment failure in 9/2020. Failure in gasoline tank must be addressed within 30 days of this inspection report to prevent further enforcement action.

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-13-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Overfill Prevention Equipment inspection was conducted on this date after completion of repairs. Fill Tube Shut-Off Valve in New Oil tank passed with overfill equipment activating at 94.1% and probe in Waste Oil tank activating at 90%. Outstanding violation I101 regarding failure to comply with overfill prevention equipment requirements, cited in inspection report dated 9/29/21, has been corrected. In addition, outstanding violation I016 regarding UST's primary containment not being maintained product tight, cited in inspection report dated 10/21/20, has been corrected due to removal of the gasoline tank that did not pass test in 9/2020. Please be advised that the following outstanding violations cited in inspection report dated 8/26/21, will be corrected upon submittal of updated tank information in CERS and completion of repairs in UDC 8 with scope of work included in plan submitted to this agency on 12/6/21: - Violation I382 regarding failure to maintain [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 01-08-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: CERS review

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-08-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Tester Bob Toomey, ICC exp 8/31/19, Veeder Root exp 9/11/18, VMI exp 8/19/18 Report emailed to Micahel Granche

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-09-2017
Violations Found: No

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Type: Routine done by local agency
Eval Notes: Routine inspection conducted this date in regards to underground storage tank, consent to enter, inspect and take photographs was given by Mike Grance-, Engineering Sup Monitoring system certification was conducted at this time. Bob Toomey, performed the monitor cert. Ensure submittal of monitor cert test results within 30 days. Tester provided the following certifications: ICC Tech 5253051 exp 9/2/17, Veeder-Root tech #a31644 exp 9/11/18 VMI/vaporless 8/19/18 Number of UST s -6 Leak detector type -vaporless Sensor types -205/303/001 UDC type -single wall The Veeder-Root monitoring panel showed all functions normal. Sensors and sumps in good order this date, but due to the extreme rain conditions, rain water entered some of the sumps, but will be removed prior to completion of the monitoring cert. The following documents were available for review: CUPA Business Activities form, CUPA Business Owner / Operator Identification form CUPA UST Facility [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-20-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for routine Hazardous Materials Business Plan (HMBP). Juan Carlos Gomez, UPS Corporate Environmental Coordinator, provided consent to inspect. Observed the following materials on site at reportable quantities: diesel fuels, car was detergent, car wash reverse osmosis antiscalant, engine wash detergent, acetylene, oxygen, waste aerosols, lubricating grease, lubricating oil, antifreeze, used motor oil, hydraulic oil, transmission fluid, used antifreeze, Hazardous Materials disclosed in CERS (10156111) match what is reported on site. Training was reported to be conducted and logs are kept online Per California Health & Safety Code Ch. 6.95, businesses that store and handle hazardous materials at or over reportable quantities (55 gal of a liquid, 500 lbs of a solid, 200 cubic ft of a compressed gas) must prepare and implement an HMBP. The facility is responsible for identifying all hazardous materials, including hazardous wastes, which are at or above disclosure thresholds. If
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-20-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine hazardous waste inspection. Juan Carlos Gomez, UPS Corporate Environmental Coordinator, provided consent to inspect. Walked throughout the vehicle service facility and inspected the waste storage area in the vehicle service and warehouse's hazardous waste storage areas. Hazardous waste were properly labeled, stored, and dated. Hazardous space was not observed in trash cans throughout the facility. Metals are stored for recycling and a logged is maintained. Manifests were available and reviewed. Pick ups are by Veolia ES Technical Solutions. A review of the manifests indicates that this facility is a large quantity hazardous waste

UNITED PARCEL SERVICE (Continued) **1000594559**

generator Emergency response information is posted and employees are reported to be trained and training records are maintained online. No hazardous waste violations were observed on this date. Inspection report emailed to Juan Carlos Gomez at juancarlosgomez@ups.com

Eval Division: Orange County Environmental Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-20-2023
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct a routine Underground Storage Tank (UST) inspection and witness the annual monitoring system certification and spill bucket testing. Met with David Walker with Belshire Environmental. Technician certifications (VR, ICC and monitoring equipment manufacturing certifications) were verified Also present was Juan Gomez, UPS Corporate Environmental Coordinator, for the site. The facility has one double walled 10,000 gallon UST containing diesel. The system is monitored by a Veeder Root TLS 350 panel. The monitor is operational for audible and visual alarms and display reads "all functions normal." Overfill protection is by flapper valves. Tank annular is "wet" and monitored by VR303, fill and sump are monitored by VR208 sensors, and the UDCs have stand alone sensors that stop flow of gas when activated. Sensors were observed at the lowest point. Sensor out and fail-safe were verified and passed. All sensors tested and verified to be operational. Diesel line leak detecto

Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 01-27-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site to conduct hazardous materials chemical inventory and business emergency plan inspection. Jennifer Naughton and Spencer Howmann granted access to conduct inspection in vehicle service and facility's warehouse. I walked through facility and inspected hazardous material storage areas in vehicle service and warehouse. There has been changes in types and/or volumes of the hazardous material stored on site since last inspection or previous reporting period. The following changes were observed on site and inventory must be updated: - Lubricating grease has decreased from 165 gallons to 55 gallons - Lubrication oil has decreased from 1365 gallons to 305 gallons since underground storage tank is not in use - Used motor oil has decreased from 1000 gallons to 110 gallons since underground storage tank is not in use - Diesel Exhaust Fluid is below disclosure threshold of 550 gallons since it is considered an irritant and must be deleted from reporting - mixture [Truncated]

Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-03-2021
Violations Found: No

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Type: Other, not routine, done by local agency
Eval Notes: Updated Certification of Financial Responsibility (CFR) with coverage period from 3/25/20 to 3/25/21 was submitted to CERS this date. Facility contact, Jason Boos, Building and Systems Engineering Supervisor, has access to UST documents in CERS and was confirmed during onsite inspection conducted on 1/27/21. Violation I583 regarding failure to maintain current CFR, cited during onsite routine inspection conducted on 1/27/21, has been corrected.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-05-2019
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Received and reviewed monitoring system certification from testing dated 1/7/19 All components passed at that time. Overfill prevention also submitted for testing done on 9/19/18. The testing appears to only include flapper valves, which are in all but the waste oil tank. Cers lists tank 1-3 as ball float and flapper tank 4 as audible/visual and flapper tank 5 (waste oil audible only), The ATG's were tested and passed on 1/7/19 Contacted Edwin Otubuah Environmental Contact. Requested additional info on if the tank 1-3 ball floats were tested or removed, or if he will be updated CERS to remove ball float notation for overfill prevention.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-14-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: 2018 HMBEP Annual Certification Approval. The following documents were received and ACCEPTED on CERS: Business Activities, Business Ownership Information, Chemical Inventory, Facility Site Map, Emergency Plan.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-14-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Review of CERS, accepted this date DO Robert Toomey
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-15-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: accepted CERS submittal. DO Robert Toomey
Eval Division: Orange County Environmental Health

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 02-16-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Accepted submittal for 2017
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal in CERS.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 04-21-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed a copy of Monitoring System Certification Report for activities conducted on 3/26/21 after replacement and retesting of the line leak detector for south diesel tank. Line leak detector passed test. Outstanding violation I198 regarding failure of the functional line leak detector (LLD) monitoring pressurized piping to detect a release, cited during inspection conducted on 2/5/21, has been corrected.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 05-23-2022
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: I received and reviewed the following documents attached to an email with pictures documenting installation of new boot outside/beneath UDC: - Secondary Containment Testing Report Form for activities conducted on 3/3/22 not witnessed by this agency. UDC 8, secondary piping for new oil, waste oil and diesel west tanks were tested. All tested components passed except for waste oil tank secondary pipe. - Secondary Containment Testing Report Form for activities conducted on 4/19/22, after completion of repairs and witnessed by this agency. UDC 8 was tested and passed. Outstanding violation I382 regarding failure to maintain secondary containment, cited in inspection report dated 8/16/21, will be corrected when waste oil tank is removed/repaired.
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Date: 06-17-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and declined submittal in CERS. Please address the following: Add [ATF 64743-57-0 %weight] to the mixture components box for the transmission fluid disclosure. Put something other than water in the mixture components box for car wash detergent [chemical name CAS# %weight]. Disclosure threshold for helium and argon/CO2(mixture) is 1000 cubic feet or greater. Maximum daily amount listed for both are below this threshold. Delete these from the disclosure if the maximum daily amounts are accurate. If the maximum daily amounts are at or above disclosure threshold, modify the quantities. Mixture components box for spent antifreeze is blank. Use [ethylene glycol 107-21-1 50%] on the line in the box. Mixture components boxes are blank for waste aerosols, waste flammable solids, waste oxidizing solids, waste organic peroxides, waste corrosive solids and other regulated substances. At least one line in these boxes need to be completed. Fill in the percent weights in [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 07-15-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: SB 989 test notification
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-13-2018
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Recieved and reviewed SB989 testing reports for testing done on 7/31/18. Components PASSING; T3 S-diesel secondary -piping run/overfill box/UDC diesel master/UDC diesel S T4 new oil piping run T5 Waste oil piping run/ and overfill box T1- 87 overfill box T2 diesel overfill box Diesel UDC 2 and 4 and 5 and 6 Components FAILING; T3 S- diesel piping sump (visual fail- piping encapsulation deterioration), T4 New Oil piping sump (visual fail- piping encapsulation deterioration) T5 waste oil piping sump (visual fail- piping encapsulation deterioration) T1- 87 piping sump (visual fail- piping encapsulation deterioration), T1- 87 secondary piping run (stated to be from leaking boot inside UDC1) T2 Diesel piping run (stated to be from leaking boot inside UDC3) T2- diesel piping sump (visual fail- piping encapsulation deterioration), Diesel UDC 1 and 3 Copy of report emailed to UPS J.H Bailey and to Environmental contace Edwin Otubuah
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 08-25-2016
Violations Found: No

UNITED PARCEL SERVICE (Continued) **1000594559**

Eval Type: Other, not routine, done by local agency
Eval Notes: Reviewed and accepted submittal.
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-21-2020
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: A vacuum test conducted on Tank 1 (87 unleaded) UST annular space was conducted in September 2020. A failure was noted in the test report and must be corrected (see violation for more details). A copy of this inspection report will be emailed to: jstankus@ups.com; matthewballard@ups.com
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 11-16-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: The following tanks were removed on 11/4/2021 under plan check SR0145688: - 10K gallon tank, regular - 10K gallon tank, diesel Soil sampling was conducted in accordance with 23CCR 2672. Please submit the following documents to this Agency within 60 days of UST removal: - Complete soil/water sample analysis, including white copy of chain of custody - Copy of certificate of UST destruction - Copy of uniform hazardous waste manifest(s) for transport of residual liquid, solids, or sludge waste removed from the tank - Hazardous Waste Tank Closure Certification Form - Information regarding backfill, including source, volume, purchase receipts, certified clean documentation. Backfill must be in accordance with DTSC Clean Imported Fill Material Guidance. Hard copies of documents must be sent to Dan Weerasekera at 1241 E. Dyer Rd., Suite 120, Santa Ana, CA 92705. CERS UPDATE REQUIRED Please submit an update into CERS to reflect the tanks that were removed. [Truncated]
Eval Division: Orange County Environmental Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-27-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Accepted submittal of HM for
Eval Division: Orange County Environmental Health
Eval Program: HMRRP
Eval Source: CERS,

Enforcement Action:
Site ID: 79269
Site Name: UPS - Laguna
Site Address: 22 BROOKLINE DR
Site City: ALISO VIEJO
Site Zip: 92656

UNITED PARCEL SERVICE (Continued) **1000594559**

Enf Action Date:	10-05-2021
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	Orange County Environmental Health
Enf Action Program:	UST
Enf Action Source:	CERS,

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	Orange County Env Health
Entity Title:	Not reported
Affiliation Address:	1241 East Dyer RoadSuite 120
Affiliation City:	Santa Ana
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92705-5611
Affiliation Phone:	(714) 433-6406,

Affiliation Type Desc:	Environmental Contact
Entity Name:	Juan Carlos Gomez
Entity Title:	Not reported
Affiliation Address:	5255 Lovelock Street
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92110
Affiliation Phone:	,

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1331 S. Vernon Street, Attn: Buildings & Systems Engineering
Affiliation City:	Anaheim
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92805
Affiliation Phone:	,

Affiliation Type Desc:	Identification Signer
Entity Name:	James Carracino
Entity Title:	Corporate Environmental Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Operator
Entity Name:	United Parcel Service
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported

UNITED PARCEL SERVICE (Continued) **1000594559**

Affiliation Phone: (949) 643-6644,

Affiliation Type Desc: Property Owner
Entity Name: United Parcel Service Inc.
Entity Title: Not reported
Affiliation Address: 55 Glenlake Parkway, N.E.
Affiliation City: Atlanta
Affiliation State: GA
Affiliation Country: United States
Affiliation Zip: 30328
Affiliation Phone: (909) 974-7909,

Affiliation Type Desc: Document Preparer
Entity Name: Juan Carlos Gomez
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Legal Owner
Entity Name: United Parcel Service
Entity Title: Not reported
Affiliation Address: 55 Glenlake N.E.
Affiliation City: Atlanta
Affiliation State: GA
Affiliation Country: United States
Affiliation Zip: 30328
Affiliation Phone: (562) 896-2498,

Affiliation Type Desc: Parent Corporation
Entity Name: United Parcel Service, Inc.
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: UST Tank Owner
Entity Name: UPS - Laguna
Entity Title: Not reported
Affiliation Address: 22 Brookline Drive
Affiliation City: Aliso Viejo
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 92656
Affiliation Phone: (949) 643-6644,

Affiliation Type Desc: UST Permit Applicant
Entity Name: Tom Cuce
Entity Title: President
Affiliation Address: Not reported
Affiliation City: Not reported

UNITED PARCEL SERVICE (Continued) **1000594559**

Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(909) 974-7909,
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	United Parcel Services, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, N.E.
Affiliation City:	ATLANTA
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(909) 974-7909,
Affiliation Type Desc:	UST Tank Operator
Entity Name:	UPS - Laguna
Entity Title:	Not reported
Affiliation Address:	22 Brookline Drive
Affiliation City:	Aliso Viejo
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92656
Affiliation Phone:	(949) 643-6644,

G31 **UNITED PARCEL SERVICE** **UST FINDER RELEASE** **1029123209**
SW **22 BROOKLINE** **N/A**
1/4-1/2 **ALISO VIEJO, CA 92656**
0.421 mi.
2224 ft. **Site 2 of 2 in cluster G**

Relative: **Higher**
Actual: **595 ft.**

UST FINDER RELEASE:

Object ID:	69039
Facility ID:	Not reported
Lust ID:	CAT0605902532
Name:	UNITED PARCEL SERVICE
Address:	22 BROOKLINE
City,State,Zip:	ALISO VIEJO, CA 92656
Address Match Type:	StreetAddress
Reported Date:	Not reported
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	443
Domestic Wells within 1500ft:	0
Land Use:	Developed, Medium Intensity
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Within 100yr Floodplain:	No
Tribe:	Not reported

UNITED PARCEL SERVICE (Continued) **1029123209**

EPA Region:	9
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	Geocode
X Coord:	-117.72991
Y Coord:	33.59067
Latitude:	33.59067
Longitude:	-117.72991

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LAGUNA HILLS	S128935388	ARTISTIC MAINTENANCE INC	SE CORNER MOULTON & RIDGE ROUT	92653	CPS-SLIC
LAGUNA HILLS	S102432591	GOLDEN RAIN FOUNDATION OF LAG HILL	24401 MOULTON PKY	92653	LUST, EMI

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/20/2023
Date Data Arrived at EDR: 12/20/2023
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 03/26/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/29/2024
Date Data Arrived at EDR: 02/01/2024
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/29/2024
Date Data Arrived at EDR: 02/01/2024
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/03/2023
Date Data Arrived at EDR: 08/07/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 64

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/26/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/26/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/12/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 77

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/06/2023
Date Data Arrived at EDR: 11/07/2023
Date Made Active in Reports: 02/05/2024
Number of Days to Update: 90

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/04/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 84
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 11/16/2023
Date Data Arrived at EDR: 11/16/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 89

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 89

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/17/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/18/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/13/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 03/07/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 08/15/2023
Date Data Arrived at EDR: 08/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/12/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 86

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 11/16/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/13/2023
Number of Days to Update: 83

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/26/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176
Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 11/17/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 82
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/23/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/23/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 09/28/2023
Date Made Active in Reports: 12/18/2023
Number of Days to Update: 81
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: California Environmental Reporting System Hazardous Waste
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 78
Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 11/17/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 82
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83
Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/21/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 11/22/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/15/2024
Number of Days to Update: 85

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/12/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 77

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/20/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/01/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 10/05/2023
Number of Days to Update: 79

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/18/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 84

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 09/28/2023
Date Data Arrived at EDR: 11/10/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 89

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/13/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/10/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 12/11/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/13/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA Watch List

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/14/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/13/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 86

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/15/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 70

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/17/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 09/01/2023
Date Data Arrived at EDR: 09/27/2023
Date Made Active in Reports: 12/21/2023
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/12/2024
Next Scheduled EDR Contact: 04/19/2024
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 57

Source: Nuclear Regulatory Commission
Telephone: 301-415-0717
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/27/2023
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 03/25/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/11/2024
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 5

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/02/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/15/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/02/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 1

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Quarterly

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/01/2023
Date Data Arrived at EDR: 11/17/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 88

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/21/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/22/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/22/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 12

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 02/22/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/03/2023
Date Data Arrived at EDR: 11/08/2023
Date Made Active in Reports: 11/20/2023
Number of Days to Update: 12

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 12/17/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/13/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 89

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/10/2023
Date Data Arrived at EDR: 11/10/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 89

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/13/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-267-2675
Last EDR Contact: 12/28/2023
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/29/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/10/2017
Number of Days to Update: 63

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/29/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: No Update Planned

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data
The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-4700
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing
A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 11/30/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/26/2024
Number of Days to Update: 88

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/06/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing
Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 11/30/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHROME PLATING: Chrome Plating Facilities Listing

This listing represents chrome plating facilities the California State Water Resources Control Board staff identified as possibly being a source of Per- and polyfluoroalkyl substance (PFAS) contamination. Sites and locations were identified by staff with the Division of Water Quality in the California State Water Board. Data was collected from the CA Air Resources Board 2013 and 2018 - Cr VI emission survey, CA Emission Inventory, CA HAZ Waste discharge database and by reviewing storm water permits. Former chrome plating sites are also included that are open site investigation or remediation cases with the Regional Water Quality Control Boards and the Department of Toxic Substances Control.

Date of Government Version: 11/30/2023
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/13/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 03/07/2024
Number of Days to Update: 85

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 03/31/2023
Date Data Arrived at EDR: 05/08/2023
Date Made Active in Reports: 07/31/2023
Number of Days to Update: 84

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

DRYCLEAN TEHAMA CO DIST: Tehama County Air Pollution Control District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Tehama County Air Pollution Control District.

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/24/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1468

Source: Tehama County Air Pollution Control District
Telephone: 530-527-3717
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN GLENN CO DIST: Glenn County Air Pollution Control District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Glenn County Air Pollution Control District.

Date of Government Version: 01/08/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: Glenn County Air Pollution Control District
Telephone: 530-934-6500
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN NO SONOMA CO DIST: Norther Sonoma County County Air Pollution Control District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Northern Sonoma County Air Pollution Control District.,

Date of Government Version: 01/05/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: Santa Barbara County Air Pollution Control District
Telephone: 707-433-5911
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SACRAMENTO METO DIST: Sacramento Metropolitan Air Quality Management DistrictDrycleaner Facility Listing
A listing of drycleaner facility locations, for the Sacramento Metropolitan Air Quality Management District.

Date of Government Version: 01/03/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: Sacramento Metropolitan Air Quality Management District
Telephone: 916-874-3958
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 11/14/2023
Date Data Arrived at EDR: 11/16/2023
Date Made Active in Reports: 02/12/2024
Number of Days to Update: 88

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

DRYCLEAN VENTURA CO DIST: Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Ventura County Air Pollution Control District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 02/08/2024
Number of Days to Update: 23

Source: Ventura County Air Pollution Control District
Telephone: 805-645-1421
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 11/21/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

DRYCLEAN AMADOR: Amador Air District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Amador Air Quality Management District

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 77

Source: Amador Air Quality Management District
Telephone: 209-257-0112
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/31/2023
Date Data Arrived at EDR: 09/08/2023
Date Made Active in Reports: 11/27/2023
Number of Days to Update: 80

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Annually

DRYCLEAN SAN DIEGO CO DIST: San Diego County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Diego County Air Pollution Control District.

Date of Government Version: 08/08/2023
Date Data Arrived at EDR: 08/09/2023
Date Made Active in Reports: 10/26/2023
Number of Days to Update: 78

Source: San Diego County Air Pollution Control District
Telephone: 858-586-2616
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN BUTTE CO DIST: Butte County Air Quality Management DistrictDrycleaner Facility Listing
Butte County Air Quality Management DistrictDrycleaner Facility Listing.

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 10/18/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 90

Source: Butte County Air Quality Management District
Telephone: 530-332-9400
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN FEATHER RIVER DIST: Feather River Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Feather River Air Quality Management District.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 06/05/2023
Number of Days to Update: 88

Source: Feather River Air Quality Management District
Telephone: 530-634-7659
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN EAST KERN DIST: Eastern Kern Air Pollution Control District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Eastern Kern Air Pollution Control District.

Date of Government Version: 01/12/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79

Source: Eastern Kern Air Pollution Control District
Telephone: 661-862-9684
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN IMPERIAL CO DIST: Imperial County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Imperial County Air Pollution Control District

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79

Source: Imperial County Air Pollution Control District
Telephone: 442-265-1800
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MENDO CO DIST: Mendocino County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mendocino County Air Quality Management District.

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/28/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 77

Source: Mendocino County Air Quality Management District
Telephone: 707-463-4354
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MOJAVE DESERT DIST: Mojave Desert Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mojave Desert Air Quality Management District.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 78

Source: Mojave Desert Air Quality Management District
Telephone: 760-245-1661
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN YOLO-SOLANO DIST: Yolo-Solano Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Yolo-Solano Air Quality Management District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/05/2024
Date Made Active in Reports: 03/20/2024
Number of Days to Update: 75

Source: Yolo-Solano Air Quality Management District
Telephone: 530-757-3650
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SHASTA CO DIST: Shasta County Air Quality Management District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Shasta County Air Quality Management District.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 78

Source: Shasta County Air Quality Management District
Telephone: 530-225-5674
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MONTEREY BAY DIST: Monterey Bay Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Monterey Bay Air Quality Management District.

Date of Government Version: 01/03/2024
Date Data Arrived at EDR: 01/05/2024
Date Made Active in Reports: 03/20/2024
Number of Days to Update: 75

Source: Monterey Bay Air Quality Management District
Telephone: 831-647-9411
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SAN LUIS OB CO DIST: San Luis Obispo County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Luis Obispo County Air Pollution Control District.

Date of Government Version: 01/03/2024
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/20/2024
Number of Days to Update: 76

Source: San Luis Obispo County Air Pollution Control District
Telephone: 805-781-5756
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN PLACER CO DIST: Placer County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Placer County Air Quality Management District.

Date of Government Version: 05/15/2023
Date Data Arrived at EDR: 05/17/2023
Date Made Active in Reports: 08/14/2023
Number of Days to Update: 89

Source: Placer County Air Quality Management District
Telephone: 530-745-2335
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SAN JOAQ VAL DIST: San Joaquin Valley Air Pollution Control District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Joaquin Valley Air Pollution Control District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/21/2024
Number of Days to Update: 77

Source: San Joaquin Valley Air Pollution Control District
Telephone: 559-230-6001
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN BAY AREA DIST: Bay Area Air Quality Management District Drycleaner Facility Listing
Bay Area Air Quality Management District Drycleaner Facility Listing.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1432

Source: Bay Area Air Quality Management District
Telephone: 415-516-1916
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN CALAVERAS CO DIST: Calaveras County Environmental Management Agency Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Calaveras County Environmental Management Agency.

Date of Government Version: 06/17/2019
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1412
Source: Calaveras County Environmental Management Agency
Telephone: 209-754-6399
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Varies

DRYCLEAN GRANT: Grant Recipients List
Assembly Bill 998 (AB 998) established the Non-Toxic Dry Cleaning Incentive Program to provide financial assistance to the dry cleaning industry to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 816
Source: California Air Resources Board
Telephone: 916-323-0006
Last EDR Contact: 01/26/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

DRYCLEAN LAKE CO DIST: Lake County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Lake County Air Quality Management District,

Date of Government Version: 04/29/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1455
Source: Lake County Air Quality Management District
Telephone: 707-263-7000
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN NO COAST UNIFIED DIST: North Coast Unified Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the North Coast Unified Air Quality Management District.

Date of Government Version: 11/30/2016
Date Data Arrived at EDR: 04/19/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1473
Source: North Coast Unified Air Quality Management District
Telephone: 707-443-3093
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN NO SIERRA DIST: Northern Sierra Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Northern Sierra Air Quality Management District,

Date of Government Version: 05/07/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1455
Source: Northern Sierra Air Quality Management District
Telephone: 530-274-9350
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SANTA BARB CO DIST: Santa Barbara County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Santa Barbara County Air Pollution Control District.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1475
Source: Santa Barbara County Air Pollution Control District
Telephone: 805-961-8867
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 06/09/2023
Date Made Active in Reports: 08/30/2023
Number of Days to Update: 82
Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/14/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 78
Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 01/11/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 78
Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86
Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

ICE: Inspection, Compliance and Enforcement
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/07/2024
Date Data Arrived at EDR: 02/07/2024
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 0
Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/07/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/07/2024
Date Data Arrived at EDR: 02/07/2024
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 0
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/07/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 03/21/2024
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Quarterly

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 10/26/2023
Date Data Arrived at EDR: 10/27/2023
Date Made Active in Reports: 01/29/2024
Number of Days to Update: 94

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 03/21/2024
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/03/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Annually

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 86

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/06/2023
Date Data Arrived at EDR: 11/07/2023
Date Made Active in Reports: 02/05/2024
Number of Days to Update: 90

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 11/22/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/23/2024
Number of Days to Update: 86

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/06/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 02/29/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Annually

SANTA CRUZ CO SITE MITI: Site Mitigation Listing

Sites may become contaminated with toxic chemicals through illegal dumping or disposal, from leaking underground storage tanks, or through industrial or commercial activities.The goal of the site mitigation program is to protect the public health and the environment while facilitating completion of contaminated site clean-up projects in a timely manner.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 06/23/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 20

Source: Santa Cruz Environmental Health Services
Telephone: 831-454-2761
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 90

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/15/2024
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 11/29/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 11/22/2023
Date Data Arrived at EDR: 11/22/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 86
Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 78
Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/05/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Varies

UST FINDER: UST Finder Database

EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-564-0394
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Varies

UST FINDER RELEASE: UST Finder Releases Database

US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/31/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 79

Source: Environmental Protecton Agency
Telephone: 202-564-0394
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: Semi-Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 12/26/2023
Date Data Arrived at EDR: 12/26/2023
Date Made Active in Reports: 03/19/2024
Number of Days to Update: 84

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 77

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/18/2023
Date Data Arrived at EDR: 12/18/2023
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 86

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 10/20/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 84

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 10/25/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 83

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/05/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/08/2022
Date Data Arrived at EDR: 08/09/2022
Date Made Active in Reports: 09/01/2022
Number of Days to Update: 23

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 01/17/2024
Date Data Arrived at EDR: 01/18/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 76

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 10/27/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 11/21/2023
Number of Days to Update: 20

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/09/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/18/2024
Date Made Active in Reports: 03/26/2024
Number of Days to Update: 68

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/09/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/10/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/29/2023
Number of Days to Update: 76

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/04/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/13/2023
Date Data Arrived at EDR: 07/13/2023
Date Made Active in Reports: 09/27/2023
Number of Days to Update: 76

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 12/01/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 12/14/2023
Number of Days to Update: 1

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 12/01/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 03/07/2024
Number of Days to Update: 85
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/11/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/19/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/04/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 04/12/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 06/13/2023
Number of Days to Update: 42
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72
Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 03/22/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 4

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/20/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/15/2023
Date Data Arrived at EDR: 11/20/2023
Date Made Active in Reports: 02/15/2024
Number of Days to Update: 87

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 03/22/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/31/2023
Date Data Arrived at EDR: 11/03/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 81

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/13/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/13/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/10/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/13/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 11/09/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 11/21/2023
Number of Days to Update: 12

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/29/2024
Number of Days to Update: 85

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/21/2024
Number of Days to Update: 77

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/16/2023
Number of Days to Update: 85

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/25/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/09/2022
Date Made Active in Reports: 03/01/2023
Number of Days to Update: 82

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/25/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2024
Date Data Arrived at EDR: 01/18/2024
Date Made Active in Reports: 01/26/2024
Number of Days to Update: 8

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 90

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/12/2024
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 11/27/2023
Date Data Arrived at EDR: 11/27/2023
Date Made Active in Reports: 02/16/2024
Number of Days to Update: 81

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 02/27/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/04/2023
Date Data Arrived at EDR: 04/05/2023
Date Made Active in Reports: 06/27/2023
Number of Days to Update: 83

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83
Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/01/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 83
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Quarterly

SAN FRANCISO COUNTY:

SAN FRANCISCO MAHER: Maher Ordinance Property Listing
a listing of properties that fall within a Maher Ordinance, for all of San Francisco

Date of Government Version: 10/15/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 86
Source: San Francisco Planning
Telephone: 628-652-7483
Last EDR Contact: 01/18/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/08/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/08/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 90

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/01/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 11/07/2023
Date Data Arrived at EDR: 11/08/2023
Date Made Active in Reports: 11/16/2023
Number of Days to Update: 8

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/16/2024
Next Scheduled EDR Contact: 06/03/2024
Data Release Frequency: No Update Planned

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/09/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/23/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/08/2022
Date Data Arrived at EDR: 02/10/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/04/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 08/03/2023
Date Data Arrived at EDR: 08/24/2023
Date Made Active in Reports: 09/12/2023
Number of Days to Update: 19

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/26/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 12/05/2023
Date Data Arrived at EDR: 02/01/2024
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 27

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2024
Date Data Arrived at EDR: 01/18/2024
Date Made Active in Reports: 04/03/2024
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 10/07/2022
Date Data Arrived at EDR: 10/07/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 75

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/29/2024
Next Scheduled EDR Contact: 05/13/2024
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/11/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2023
Date Data Arrived at EDR: 10/20/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 83

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/22/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/02/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/26/2023
Date Data Arrived at EDR: 10/24/2023
Date Made Active in Reports: 01/11/2024
Number of Days to Update: 79

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/16/2024
Next Scheduled EDR Contact: 04/29/2024
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 02/26/2024
Number of Days to Update: 89

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/05/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/18/2023
Date Data Arrived at EDR: 12/26/2023
Date Made Active in Reports: 03/19/2024
Number of Days to Update: 84

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/22/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 10/30/2023
Date Data Arrived at EDR: 11/03/2023
Date Made Active in Reports: 01/23/2024
Number of Days to Update: 81

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/22/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/06/2023
Date Data Arrived at EDR: 11/07/2023
Date Made Active in Reports: 01/31/2024
Number of Days to Update: 85

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/06/2024
Next Scheduled EDR Contact: 05/20/2024
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 03/29/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/26/2024
Next Scheduled EDR Contact: 05/06/2024
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/05/2024
Next Scheduled EDR Contact: 04/22/2024
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/12/2024
Next Scheduled EDR Contact: 05/27/2024
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/01/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.
Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ARGONAUT - MLC HOLDINGS, INC.
95 ARGONAUT
ALISO VIEJO, CA 92656

TARGET PROPERTY COORDINATES

Latitude (North):	33.594593 - 33° 35' 40.53''
Longitude (West):	117.724449 - 117° 43' 28.02''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	432780.4
UTM Y (Meters):	3717248.8
Elevation:	397 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	50006201 SAN JUAN CAPISTRANO, CA
Version Date:	2022

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

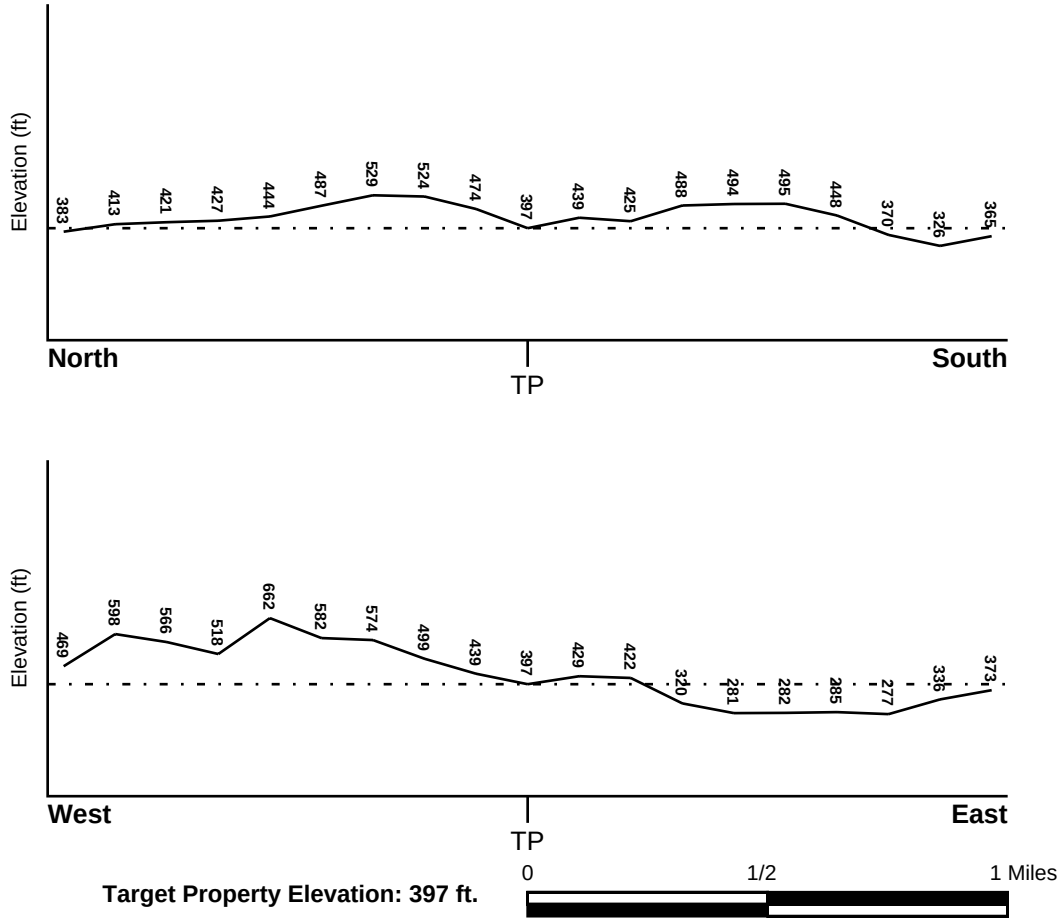
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06059C0426J	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06059C0427J	FEMA FIRM Flood data
06059C0428J	FEMA FIRM Flood data
06059C0429J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SAN JUAN CAPISTRANO	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

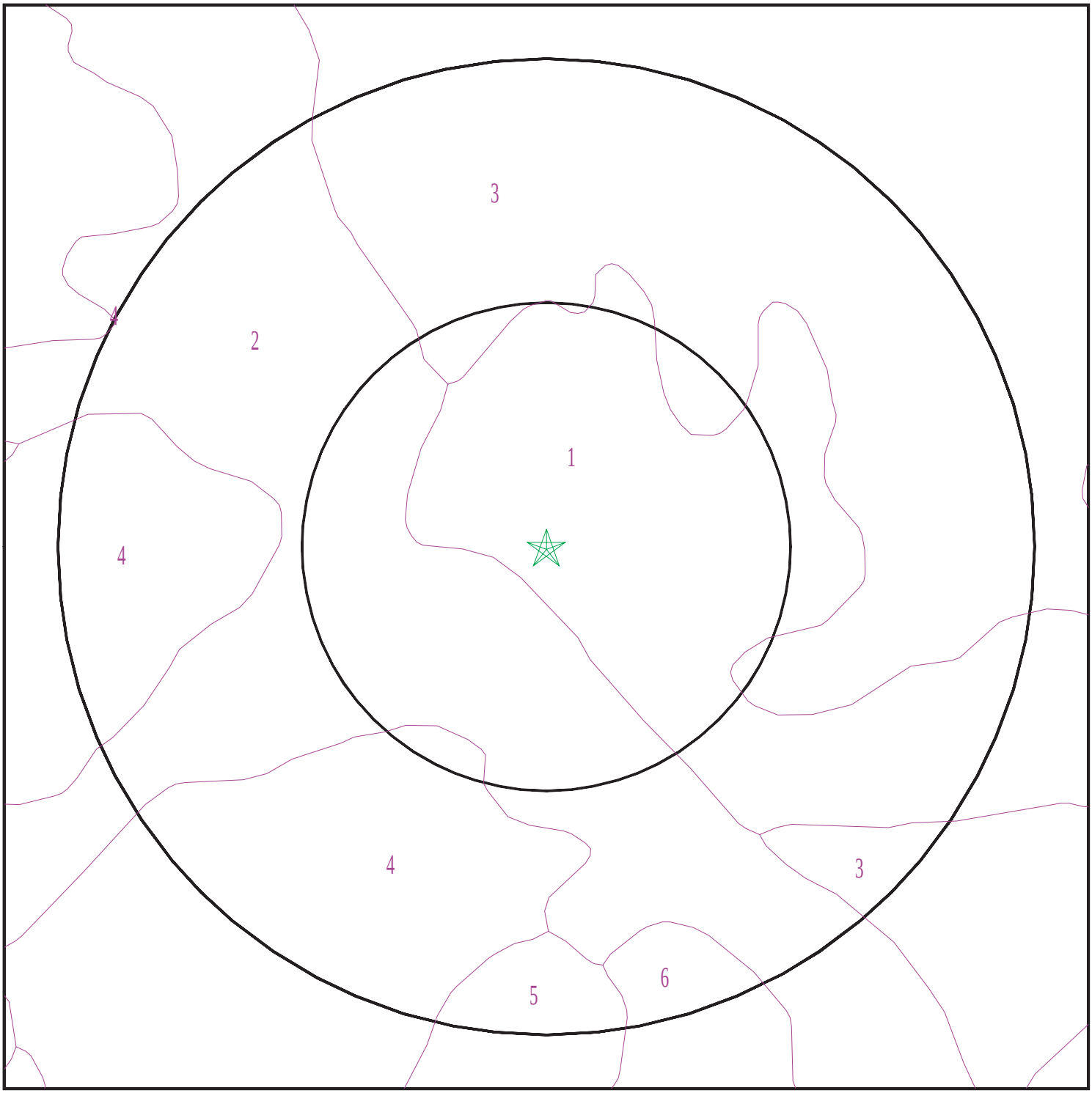
Era:	Cenozoic
System:	Tertiary
Series:	Miocene
Code:	Tm *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 07614512.2r



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Argonaut - MLC Holdings, Inc.	CLIENT:	Hillmann Environmental Co.
ADDRESS:	95 Argonaut Aliso Viejo CA 92656	CONTACT:	Vivianne Bisson
		INQUIRY #:	07614512.2r
LAT/LONG:	33.594593 / 117.724449	DATE:	April 04, 2024 8:18 am

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: CALLEGUAS

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:
2	14 inches	18 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:

Soil Map ID: 2

Soil Component Name: CAPISTRANO

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	27 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.3 Min: 5.6
2	27 inches	64 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.3 Min: 5.6

Soil Map ID: 3

Soil Component Name: BALCOM

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	33 inches	clay loam	Not reported	Not reported	Max: Min:	Max: Min:
2	33 inches	38 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: CIENEBA

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	7 inches	11 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 5

Soil Component Name: BOSANKO

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	20 inches	31 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	31 inches	35 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 6

Soil Component Name: BALCOM

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	29 inches	clay loam	Not reported	Not reported	Max: Min:	Max: Min:
2	29 inches	33 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

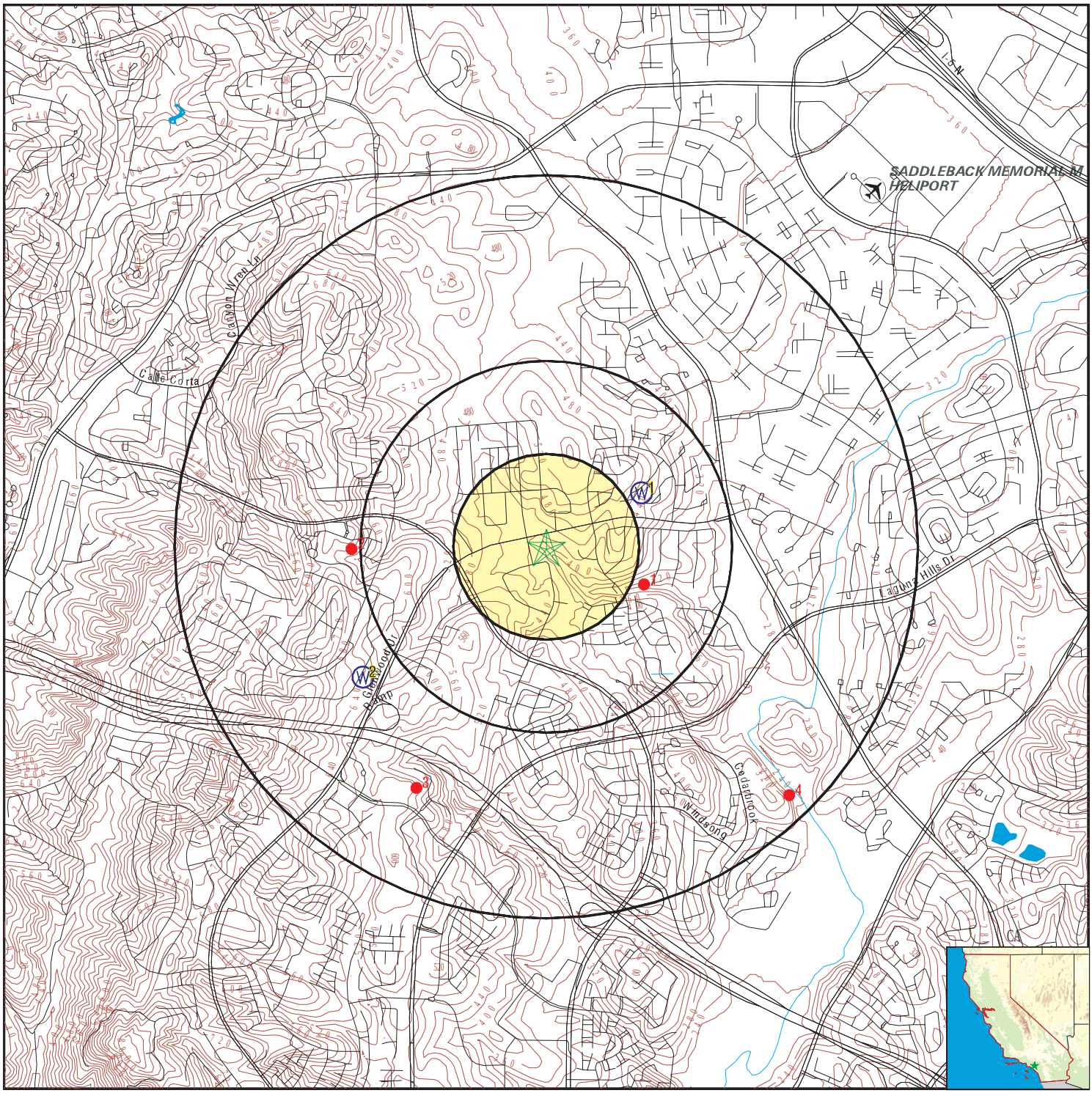
MAP ID	WELL ID	LOCATION FROM TP
1	CADWR0000020107	1/4 - 1/2 Mile ENE
2	CADWR0000032092	1/2 - 1 Mile SW

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG17000001397	1/4 - 1/2 Mile ESE
2	CAOG17000011428	1/2 - 1 Mile West
3	CAOG17000001396	1/2 - 1 Mile SSW
4	CAOG17000014763	1/2 - 1 Mile SE

PHYSICAL SETTING SOURCE MAP - 07614512.2r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Argonaut - MLC Holdings, Inc.	CLIENT:	Hillmann Environmental Co.
ADDRESS:	95 Argonaut Aliso Viejo CA 92656	CONTACT:	Vivianne Bisson
		INQUIRY #:	07614512.2r
LAT/LONG:	33.594593 / 117.724449	DATE:	April 04, 2024 8:18 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
ENE
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR0000020107**

Well ID:	07S08W04G001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	07S08W04G001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=07S08W04G001S&store_num=		
GeoTracker Data:	Not Reported		

2
SW
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000032092**

Well ID:	07S08W05R001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	07S08W05R001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=07S08W05R001S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
ESE **OIL_GAS** **CAOG17000001397**
1/4 - 1/2 Mile

OIL_GAS:

API #:	0405901153	Well #:	1
Well Type:	Oil & Gas	Well Status:	Idle
Lease Name:	Lease by South Fullerton Oil Co.		
Well Design:	1	Operator ID:	07952
Operator Name:	South Fullerton Oil Co.	Field Name:	Any Field
Area Name:	Any Area	Place:	Aliso Viejo
GIS Source:	hud	Confidential Well:	N
Directionally Drilled:	N	Spud Date:	Not Reported
Well Record Request URL:	https://filerequest.conservation.ca.gov/WellRecord?api=05901153		

2
West **OIL_GAS** **CAOG17000011428**
1/2 - 1 Mile

OIL_GAS:

API #:	0405901154	Well #:	2
Well Type:	Dry Hole	Well Status:	Plugged
Lease Name:	Moulton	Well Design:	Moulton 2
Operator ID:	07952	Operator Name:	South Fullerton Oil Co.
Field Name:	Any Field	Area Name:	Any Area
Place:	Aliso Viejo	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		
Well Record Request URL:	https://filerequest.conservation.ca.gov/WellRecord?api=05901154		

3
SSW **OIL_GAS** **CAOG17000001396**
1/2 - 1 Mile

OIL_GAS:

API #:	0405900995	Well #:	1
Well Type:	Oil & Gas	Well Status:	Idle
Lease Name:	Lease by Roy Hartman	Well Design:	1
Operator ID:	07443	Operator Name:	Roy Hartman
Field Name:	Any Field	Area Name:	Any Area
Place:	Aliso Viejo	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		
Well Record Request URL:	https://filerequest.conservation.ca.gov/WellRecord?api=05900995		

4
SE **OIL_GAS** **CAOG17000014763**
1/2 - 1 Mile

OIL_GAS:

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

API #:	0405901137	Well #:	88-4
Well Type:	Dry Hole	Well Status:	Plugged
Lease Name:	Moulton	Well Design:	Moulton 88-4
Operator ID:	S3100	Operator Name:	Shell Western E&P Inc.
Field Name:	Any Field	Area Name:	Any Area
Place:	Aliso Viejo	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		
Well Record Request URL:	https://filerequest.conservation.ca.gov/WellRecord?api=05901137		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92656	74	2

Federal EPA Radon Zone for ORANGE County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ORANGE COUNTY, CA

Number of sites tested: 30

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.763 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

Geothermal Wells Listing
Department of Conservation
Telephone: 916-445-9686
Geothermal well means a well constructed to extract or return water to the ground after it has been used for heating or cooling purposes. Geothermal wells in California (except for wells on federal leases which are administered by the Bureau of Land Management) are permitted, drilled, operated, and permanently sealed and closed (plugged and abandoned) under requirements and procedures administered by the Geothermal Section of the Department of Conservations Geologic Energy Management Division (CalGEM, formerly DOGGR).

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX E

Historical Records Documentation

Argonaut - MLC Holdings, Inc.

95 Argonaut

Aliso Viejo, CA 92656

Inquiry Number: 7614512.8

April 04, 2024

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/04/24

Site Name:

Argonaut - MLC Holdings, Inc.
95 Argonaut
Aliso Viejo, CA 92656
EDR Inquiry # 7614512.8

Client Name:

Hillmann Environmental Co.
1745 W Orangewood Avenue
Orange, CA 92868-0000
Contact: Vivianne Bisson

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2020	1"=500'	Flight Year: 2020	USDA/NAIP
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: August 03, 1989	USDA
1981	1"=500'	Flight Date: October 30, 1981	USGS
1974	1"=500'	Flight Date: November 06, 1974	USGS
1972	1"=500'	Flight Date: October 30, 1972	USGS
1967	1"=500'	Flight Date: May 07, 1967	USGS
1963	1"=500'	Flight Date: February 28, 1963	USGS
1952	1"=500'	Flight Date: December 12, 1952	USDA
1946	1"=500'	Flight Date: December 29, 1946	USGS
1938	1"=500'	Flight Date: June 21, 1938	USDA

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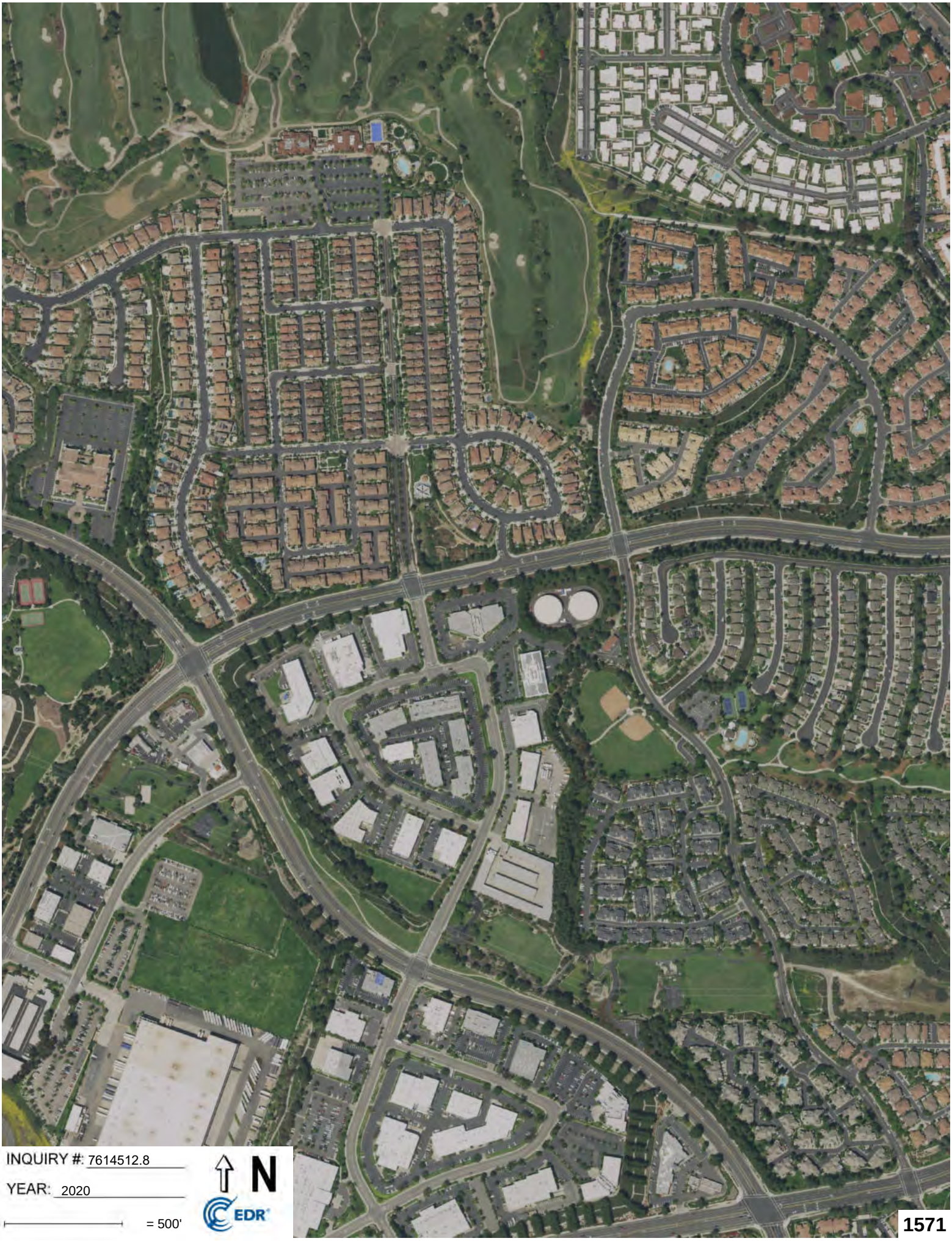
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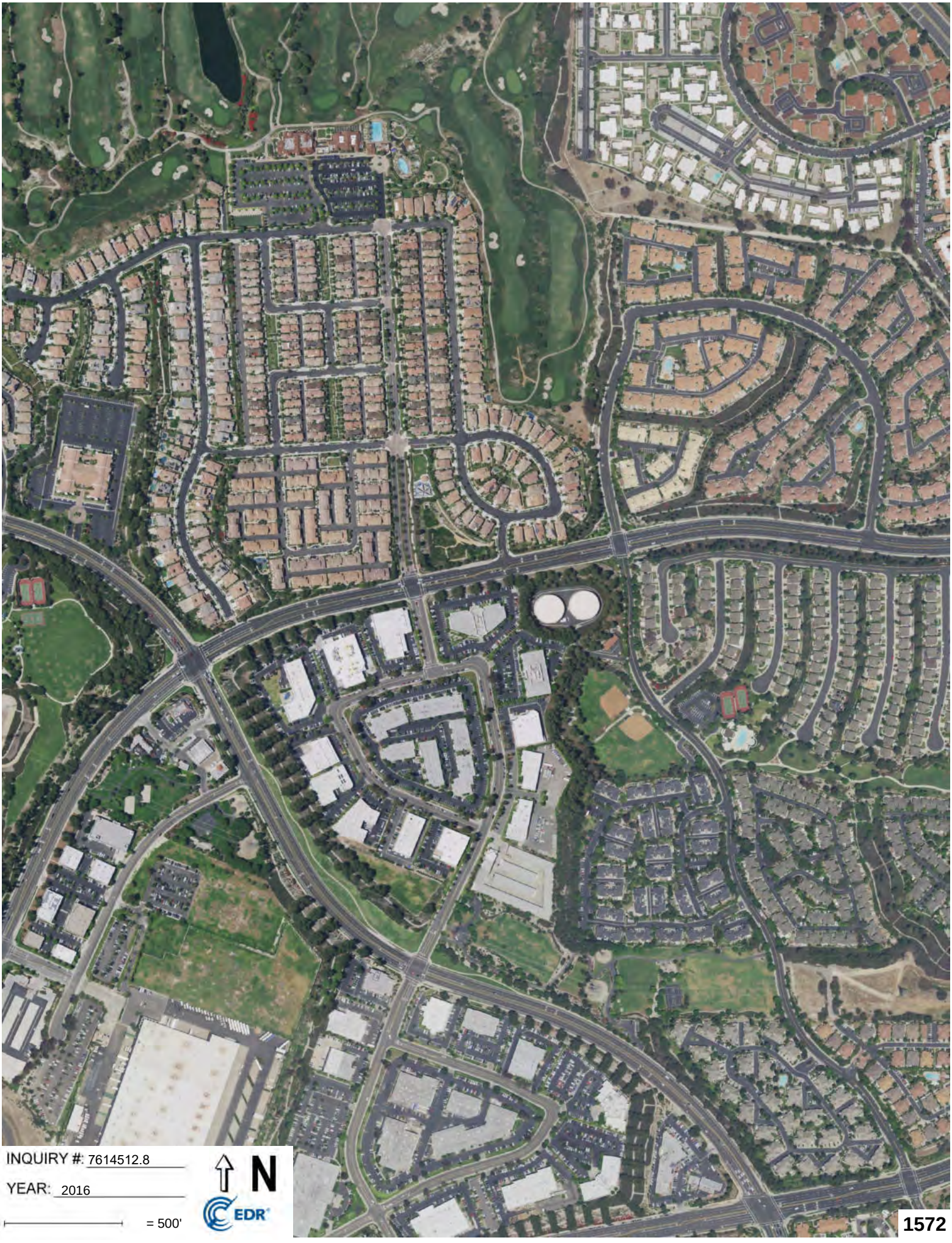
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INQUIRY #: 7614512.8
YEAR: 2020
= 500'
N
EDR


INQUIRY #: 7614512.8
YEAR: 2016
= 500'
N
EDR


INQUIRY #: 7614512.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 7614512.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 7614512.8
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 7614512.8
YEAR: 2002
= 500'
N
EDR



INQUIRY #: 7614512.8

YEAR: 1994

= 500'

N

EDR


INQUIRY #: 7614512.8
YEAR: 1989
= 500'
N
EDR
1578



INQUIRY #: 7614512.8

YEAR: 1981

= 500'

N

EDR

1579



INQUIRY #: 7614512.8

YEAR: 1974

= 500'

N

EDR

1580



INQUIRY #: 7614512.8

YEAR: 1972

= 500'

N

EDR



INQUIRY #: 7614512.8

YEAR: 1967

= 500'

N

EDR

1582



INQUIRY #: 7614512.8

YEAR: 1963

= 500'

N

EDR

1583



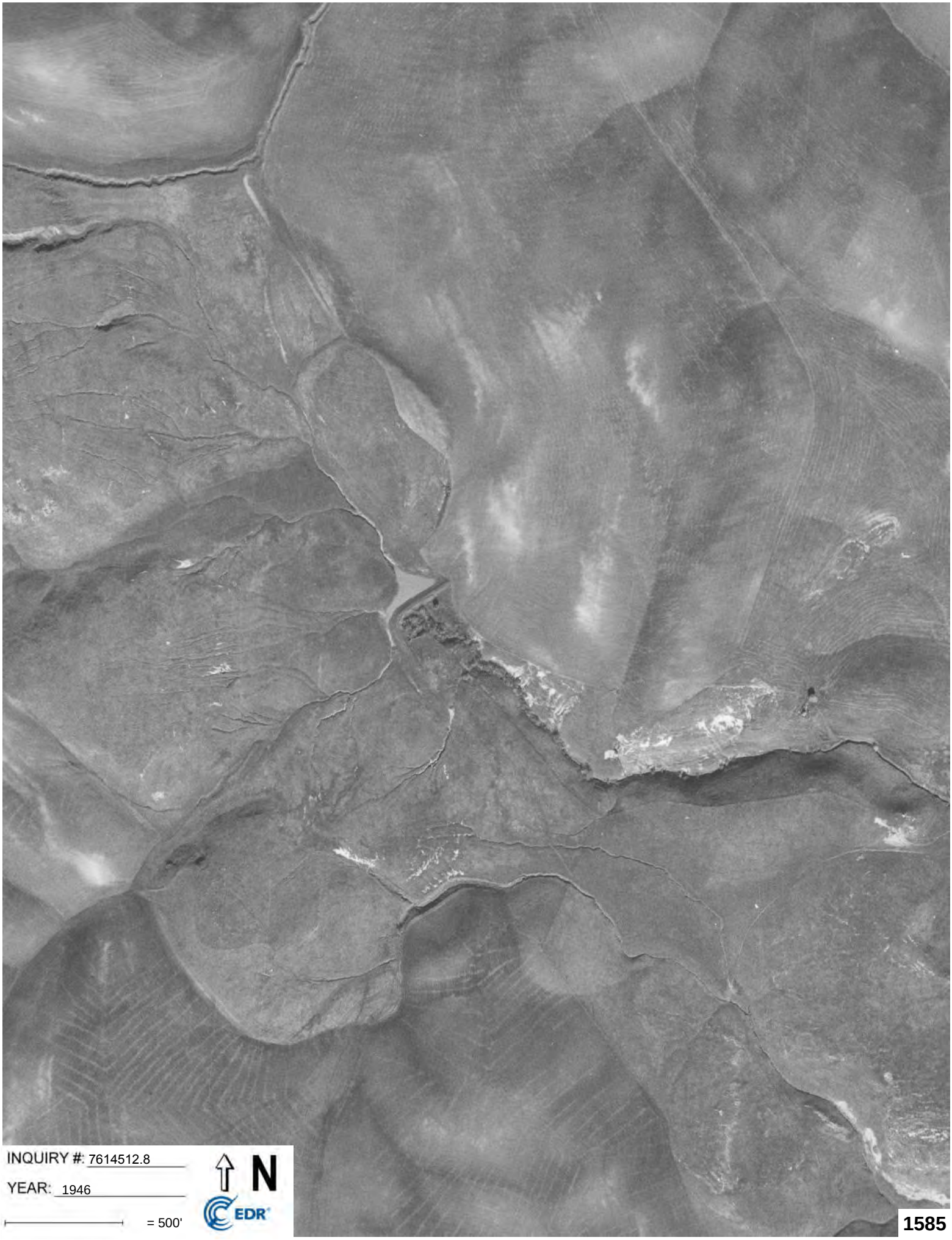
INQUIRY #: 7614512.8

YEAR: 1952

= 500'

N

EDR



INQUIRY #: 7614512.8

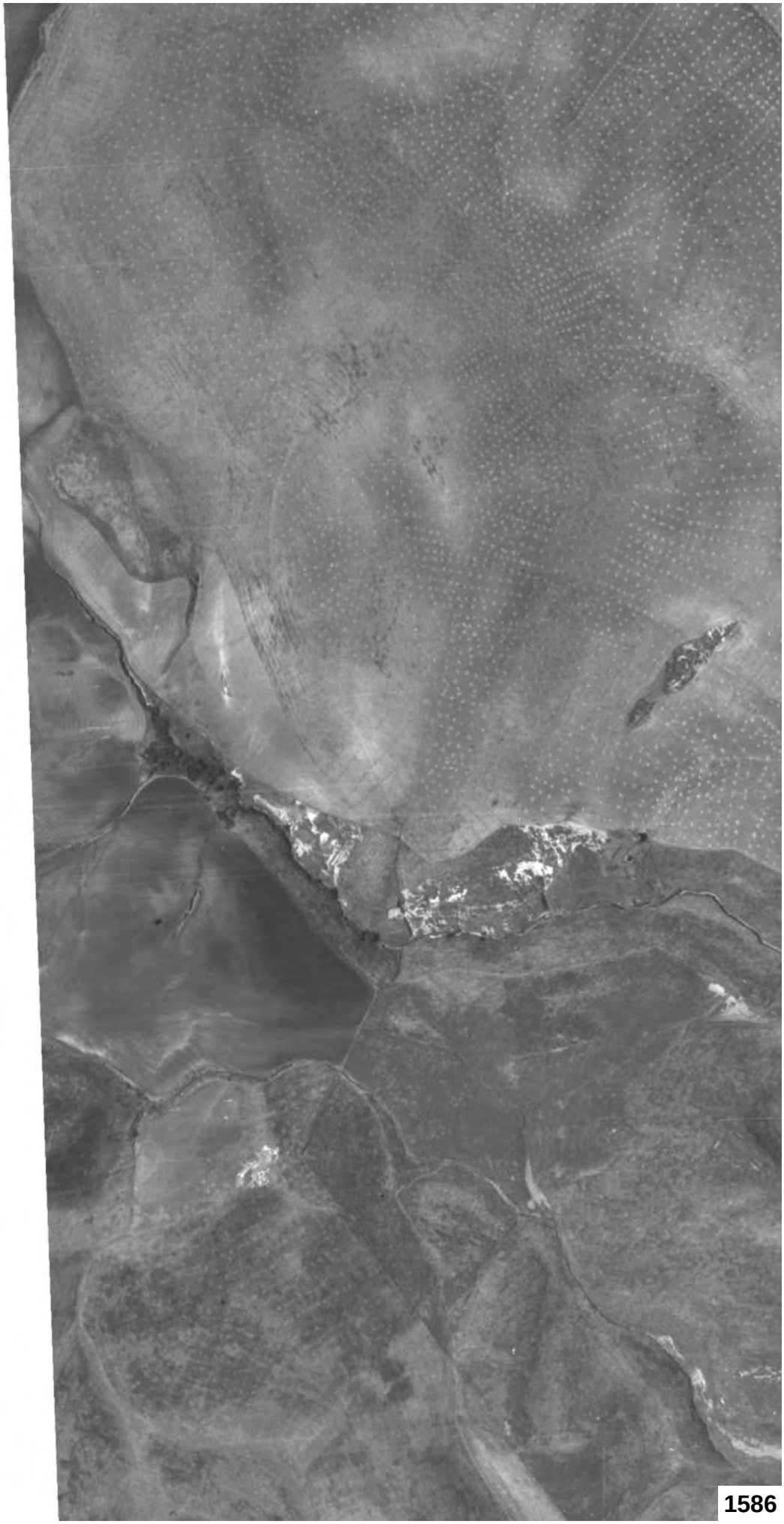
YEAR: 1946

= 500'

N

EDR

1585



INQUIRY #: 7614512.8

YEAR: 1938

= 500'

N

EDR

1586

Argonaut - MLC Holdings, Inc.
95 Argonaut
Aliso Viejo, CA 92656

Inquiry Number: 7614512.4
April 04, 2024

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

04/04/24

Site Name:	Client Name:
Argonaut - MLC Holdings, Inc.	Hillmann Environmental Co.
95 Argonaut	1745 W Orangewood Avenue
Aliso Viejo, CA 92656	Orange, CA 92868-0000
EDR Inquiry # 7614512.4	Contact: Vivianne Bisson

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Hillmann Environmental Co. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	C3-9987	**Latitude:**	33.594593 33° 35' 41" North
Project:	Argonaut - MLC Holdings, Inc.	**Longitude:**	-117.724449 -117° 43' 28" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	432781.86
		UTM Y Meters:	3717441.87
		Elevation:	397.77' above sea level

Maps Provided:

2022	1948
2018	1942
2015	1902
2012	
1981	
1974	
1968	
1949	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2022 Source Sheets



San Juan Capistrano
2022
7.5-minute, 24000



Laguna Beach
2022
7.5-minute, 24000

2018 Source Sheets



San Juan Capistrano
2018
7.5-minute, 24000



Laguna Beach
2018
7.5-minute, 24000

2015 Source Sheets



San Juan Capistrano
2015
7.5-minute, 24000



Laguna Beach
2015
7.5-minute, 24000

2012 Source Sheets



San Juan Capistrano
2012
7.5-minute, 24000



Laguna Beach
2012
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1981 Source Sheets



San Juan Capistrano
1981
7.5-minute, 24000
Aerial Photo Revised 1977

1974 Source Sheets



San Juan Capistrano
1974
7.5-minute, 24000
Aerial Photo Revised 1974

1968 Source Sheets



San Juan Capistrano
1968
7.5-minute, 24000
Aerial Photo Revised 1967

1949 Source Sheets



San Juan Capistrano
1949
7.5-minute, 24000
Aerial Photo Revised 1946

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1948 Source Sheets



San Juan Capistrano
1948
7.5-minute, 24000
Aerial Photo Revised 1946

1942 Source Sheets



SANTA ANA
1942
15-minute, 50000

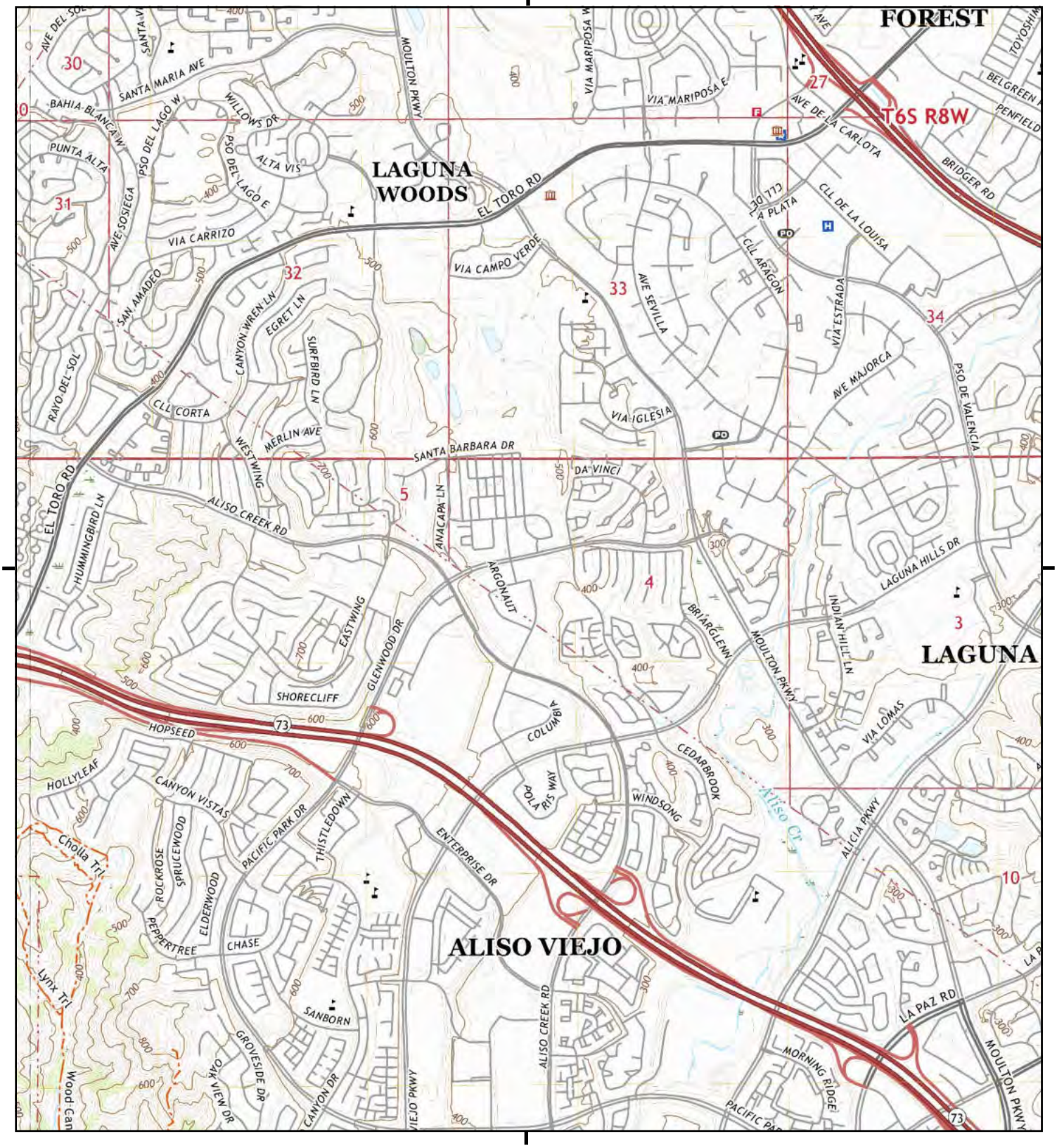


SANTIAGO PEAK
1942
15-minute, 50000

1902 Source Sheets



Corona
1902
30-minute, 125000



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

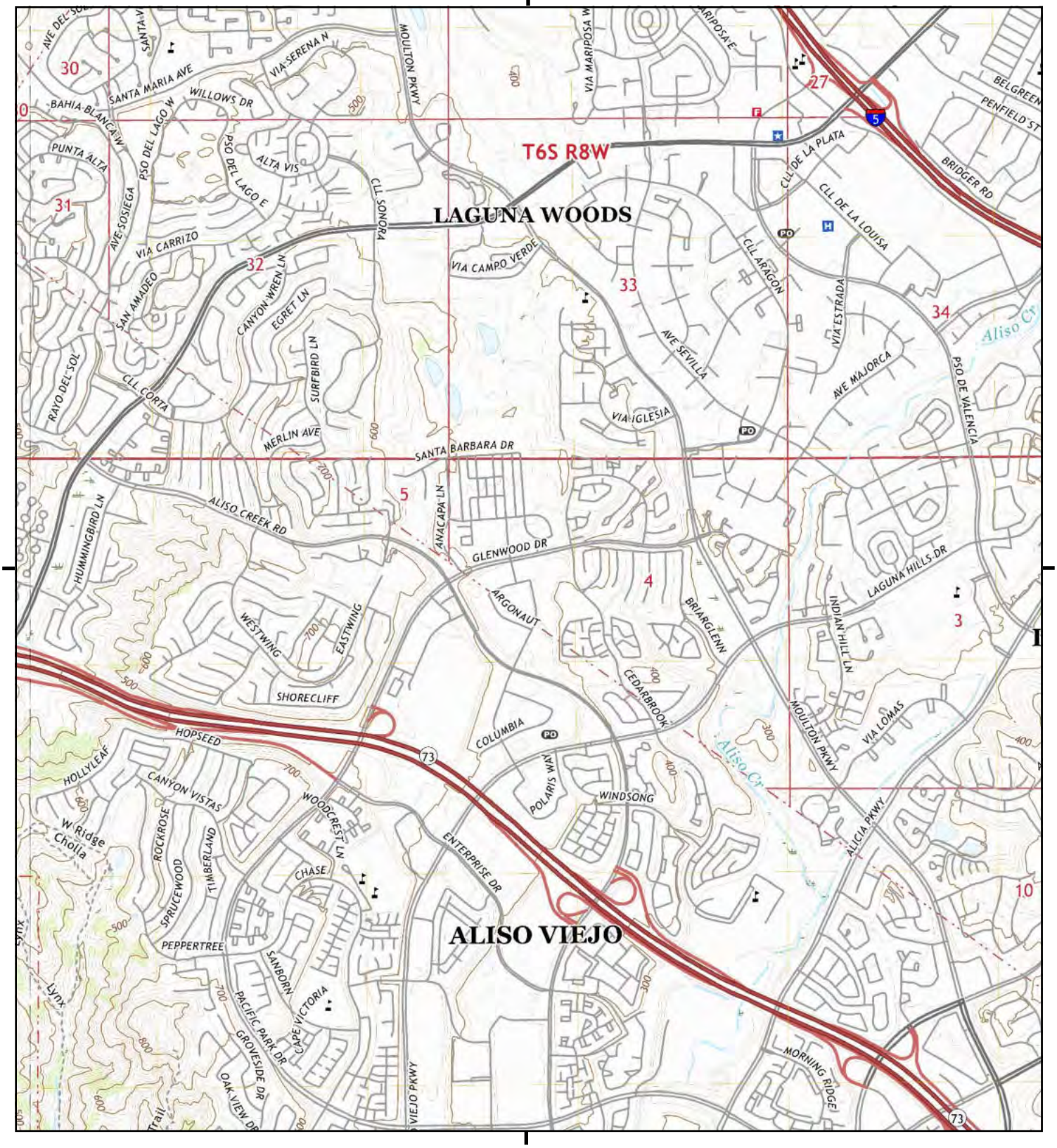
TP, San Juan Capistrano, 2022, 7.5-minute
SW, Laguna Beach, 2022, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

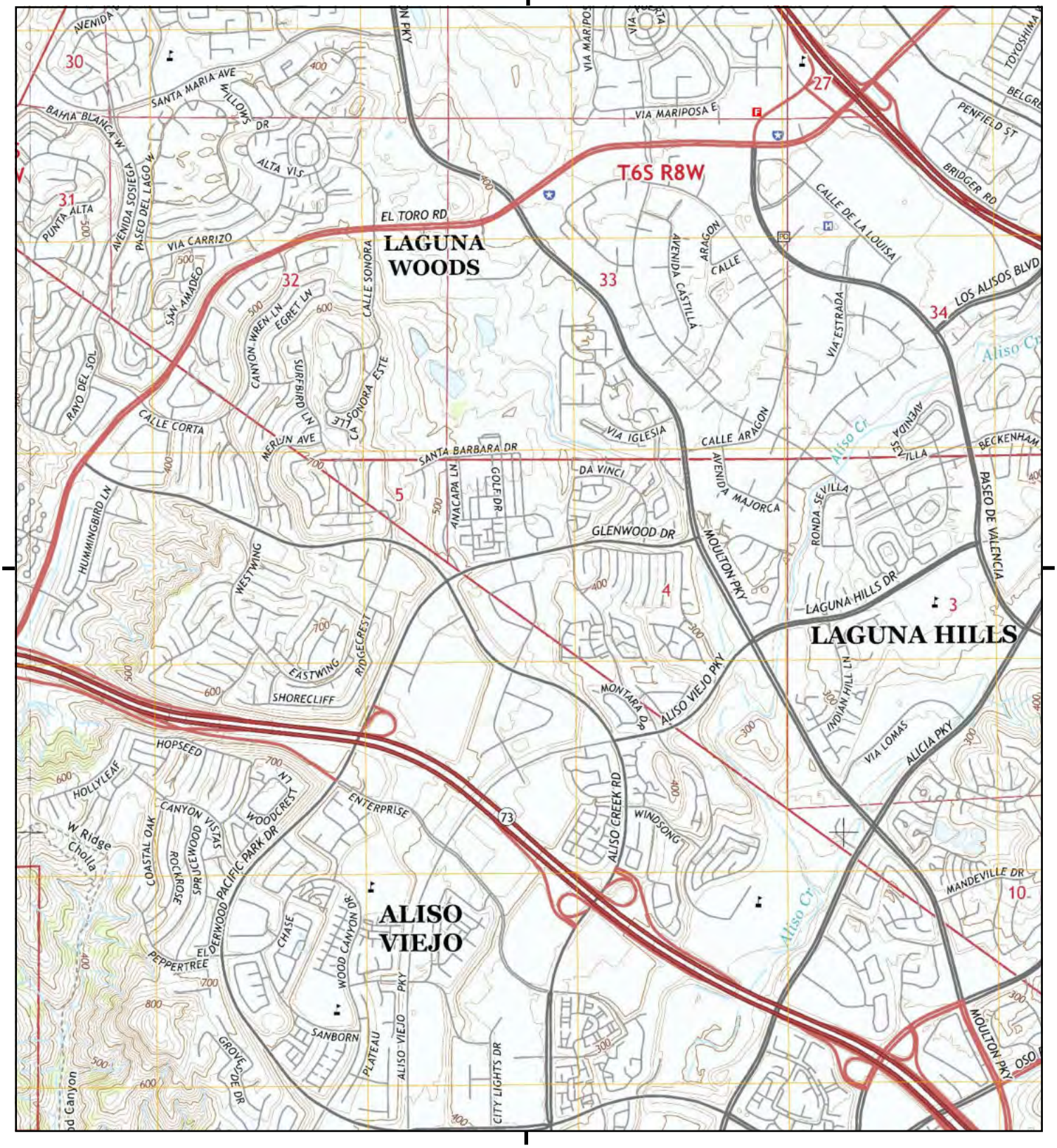
TP, San Juan Capistrano, 2018, 7.5-minute
SW, Laguna Beach, 2018, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

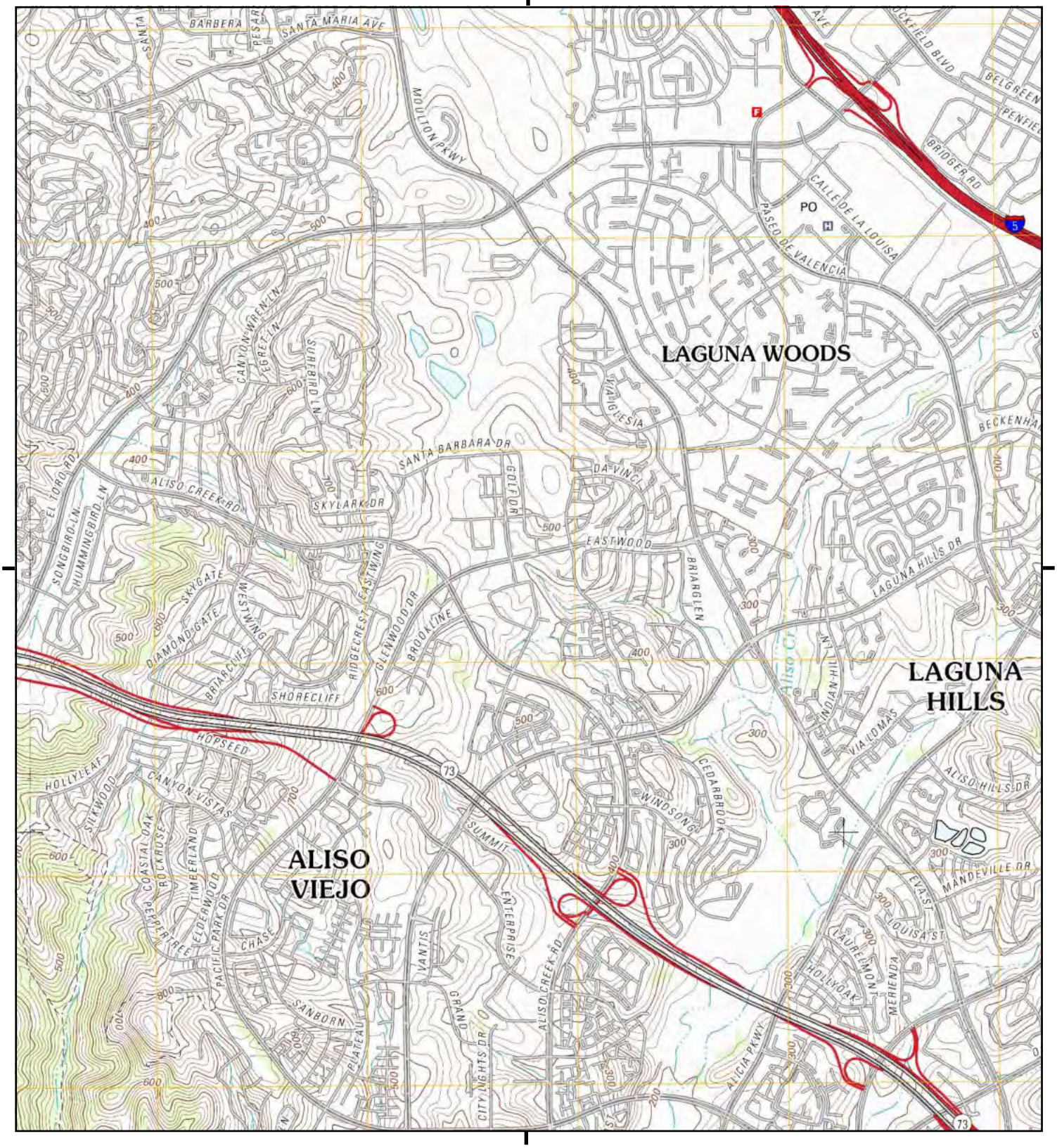
Historical Topo Map

2015


LAGUNA WOODS
LAGUNA HILLS
ALISO VIEJO
T6S R8W
EL TORO RD
VIA MARIPOSA E
SANTA MARIA AVE
BAHIA BLANCA W
PUNTA ALTA
VIA CARRIZO
SAN AMADEO
CANYON WREN LN
EGRET LN
SURFBIRD LN
CALLE SONORA
CALLE SONORA ESTE
RAYO DEL SOL
CALLE CORTA
MERLIN AVE
SANTA BARBARA DR
VIA IGLESIA
CALLE ARAGON
AVENIDA CASTILLA
VIA ESTRADA
LOS ALISOS BLVD
DA VINCI
ANACAPA LN
GOLF DR
GLENWOOD DR
MOULTON PKY
LAGUNA HILLS DR
PASEO DE VALENCIA
AVENIDA SEVILLA
RONDA SEVILLA
AVENIDA MAJORCA
BECKENHAM
HUMMINGBIRD LN
WESTWING
EASTWING
RIDGECREST
SHORECLIFF
MONTARA DR
ALISO VIEJO PKY
INDIAN HILL LN
VIA LOMAS
ALICIA PKY
HOPSEED
HOLLYLEAF
CANYON VISTAS
WOODCREST
ENTERPRISE
ALISO CREEK RD
WINDSONG
MANDEVILLE DR
W Ridge
Cholla
COASTAL OAK
ROCKROSE
SPRUCEWOOD
EL DERWOOD
PACIFIC PARK DR
PEPPERTREE
CHASE
WOOD CANYON DR
SANBORN
PLATEAU
ALISO VIEJO PKY
GROVESIDE DR
CITY LIGHTS DR
MOULTON PKY
OSO
Aliso Cr
Aliso Cr
Aliso Cr
Aliso Creek
ALTA VIS
WILLOWS DR
AVENIDA SOSIEGA
PASEO DEL LAGO W
CALLE DE LA LOUISA
BRIDGER RD
PENFIELD ST
TOYOSHIMA
BELGRE
VIA MARIPOSA
AVENIDA
AVENIDA
AVENID

Historical Topo Map

2012



This report includes information from the following map sheet(s).

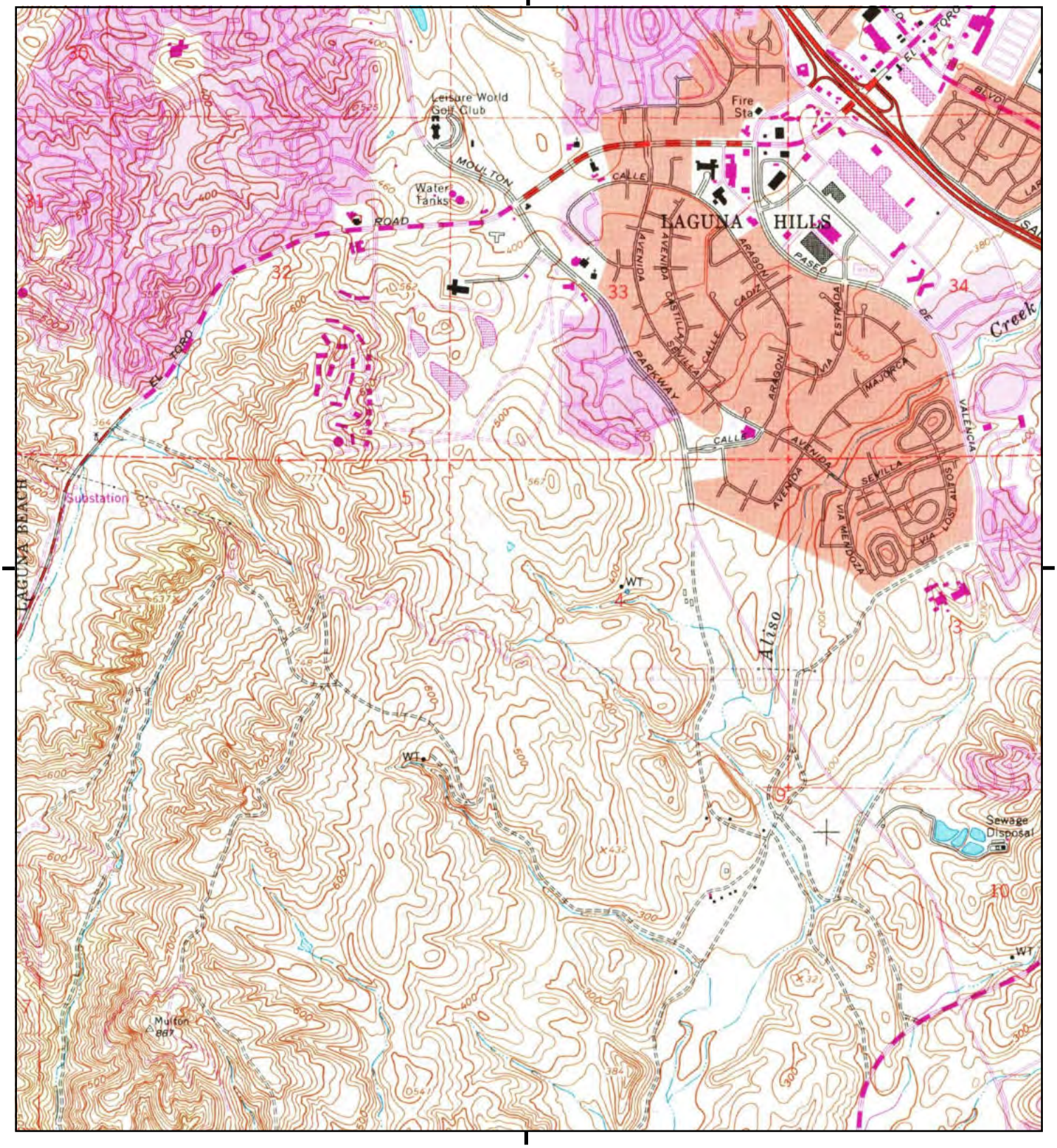
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, San Juan Capistrano, 2012, 7.5-minute
SW, Laguna Beach, 2012, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

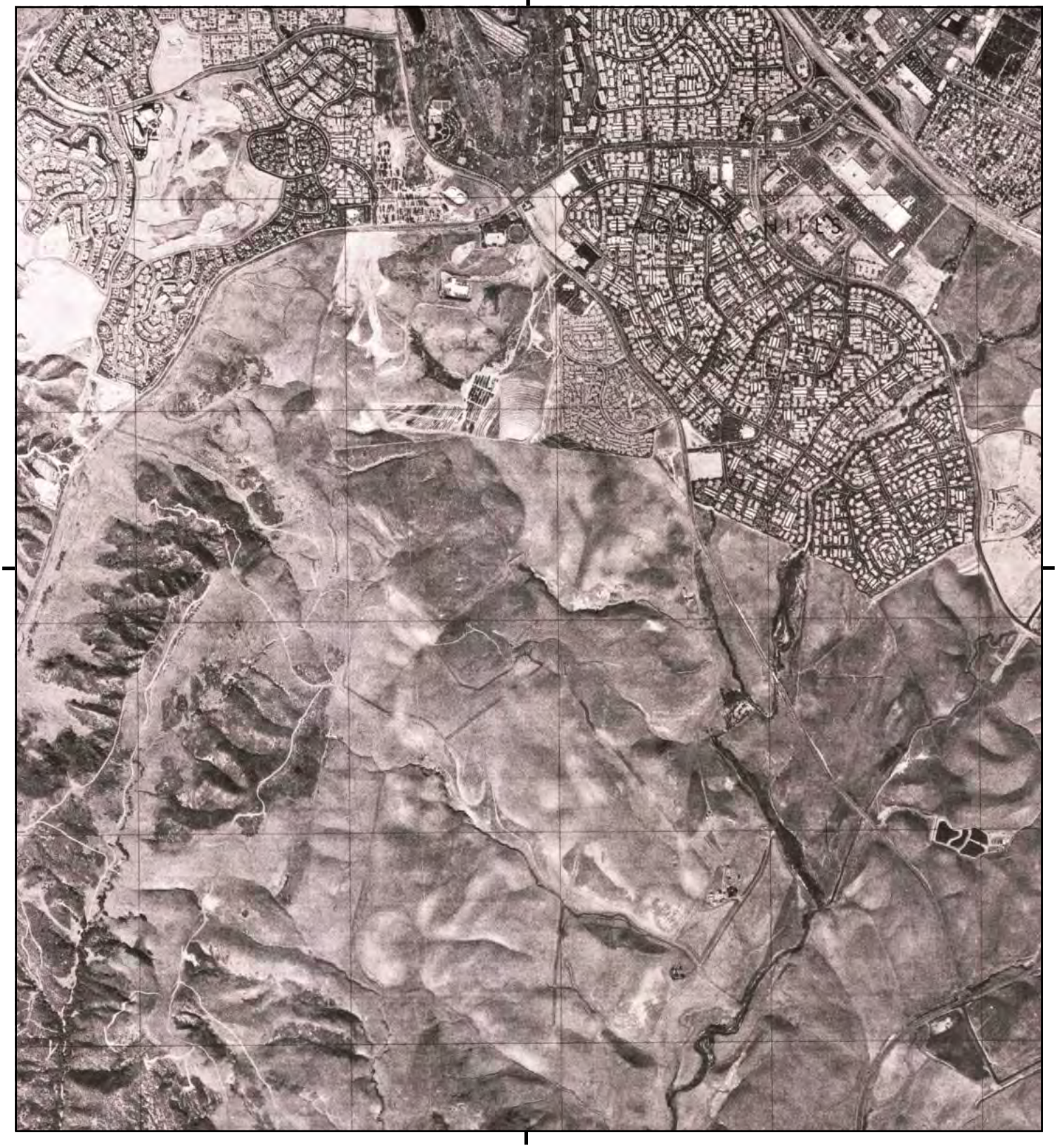
TP, San Juan Capistrano, 1981, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

Historical Topo Map

1974



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

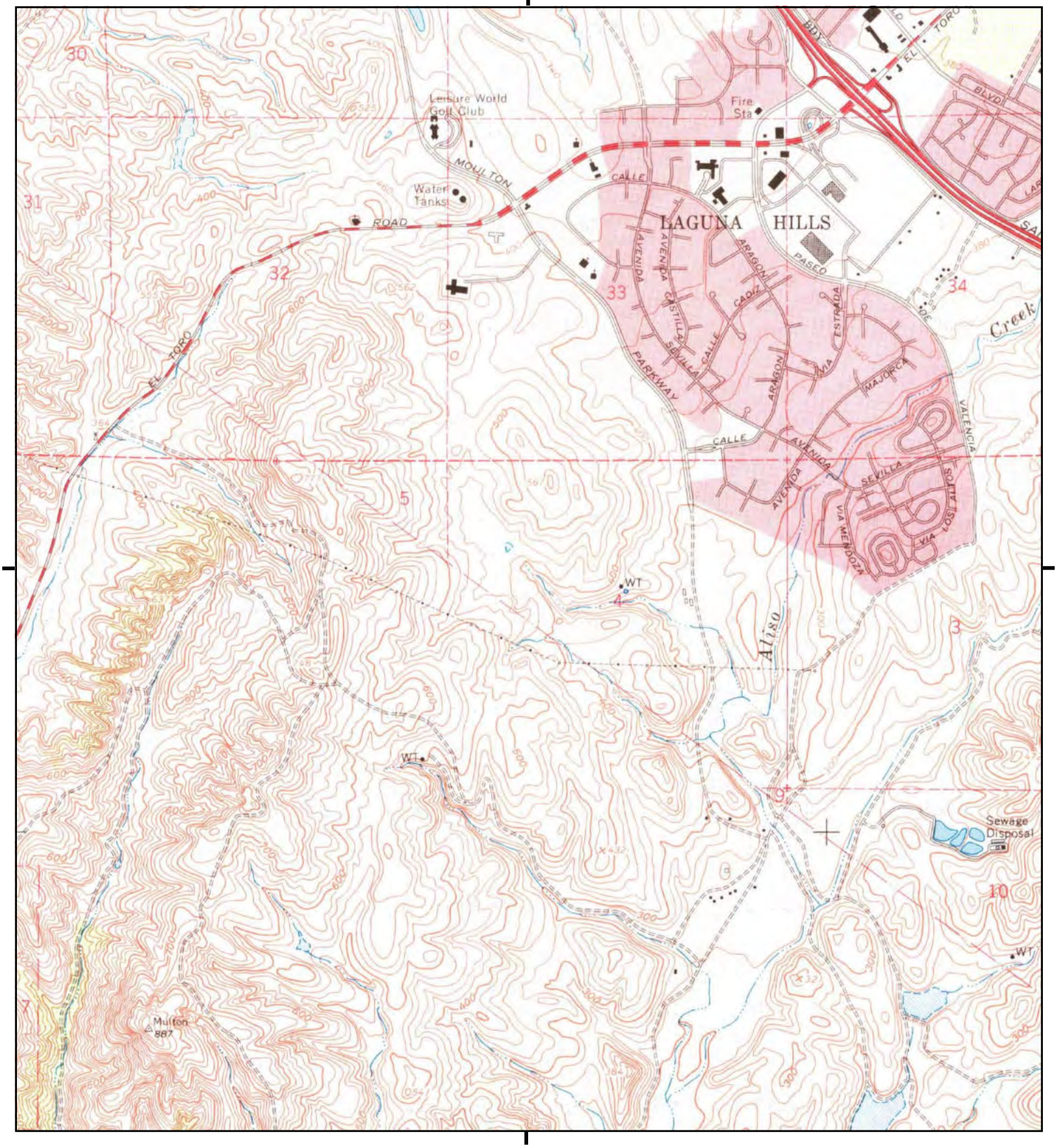
TP, San Juan Capistrano, 1974, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

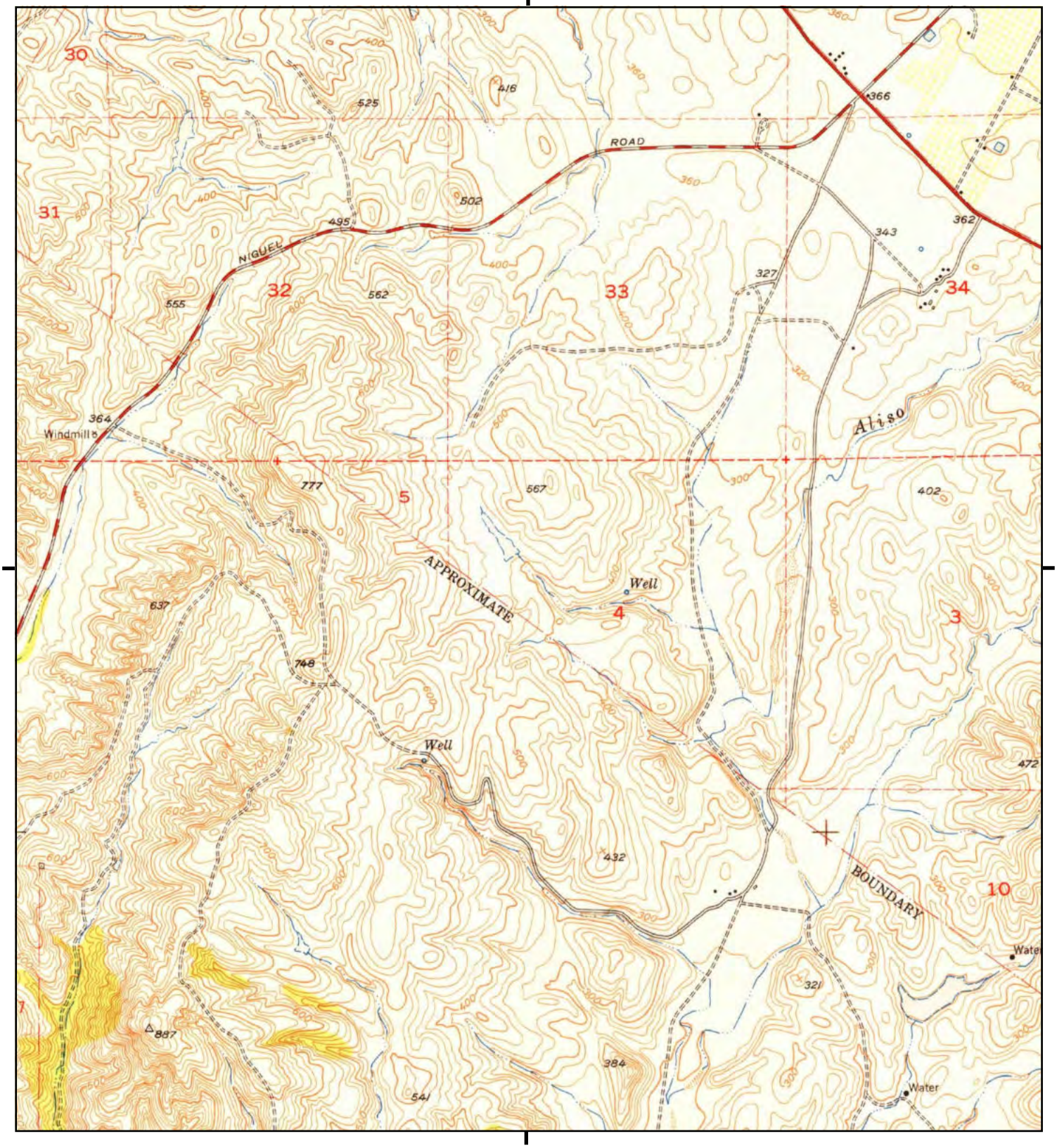
TP, San Juan Capistrano, 1968, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

Historical Topo Map

1949



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, San Juan Capistrano, 1949, 7.5-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

Historical Topo Map

1948



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, San Juan Capistrano, 1948, 7.5-minute

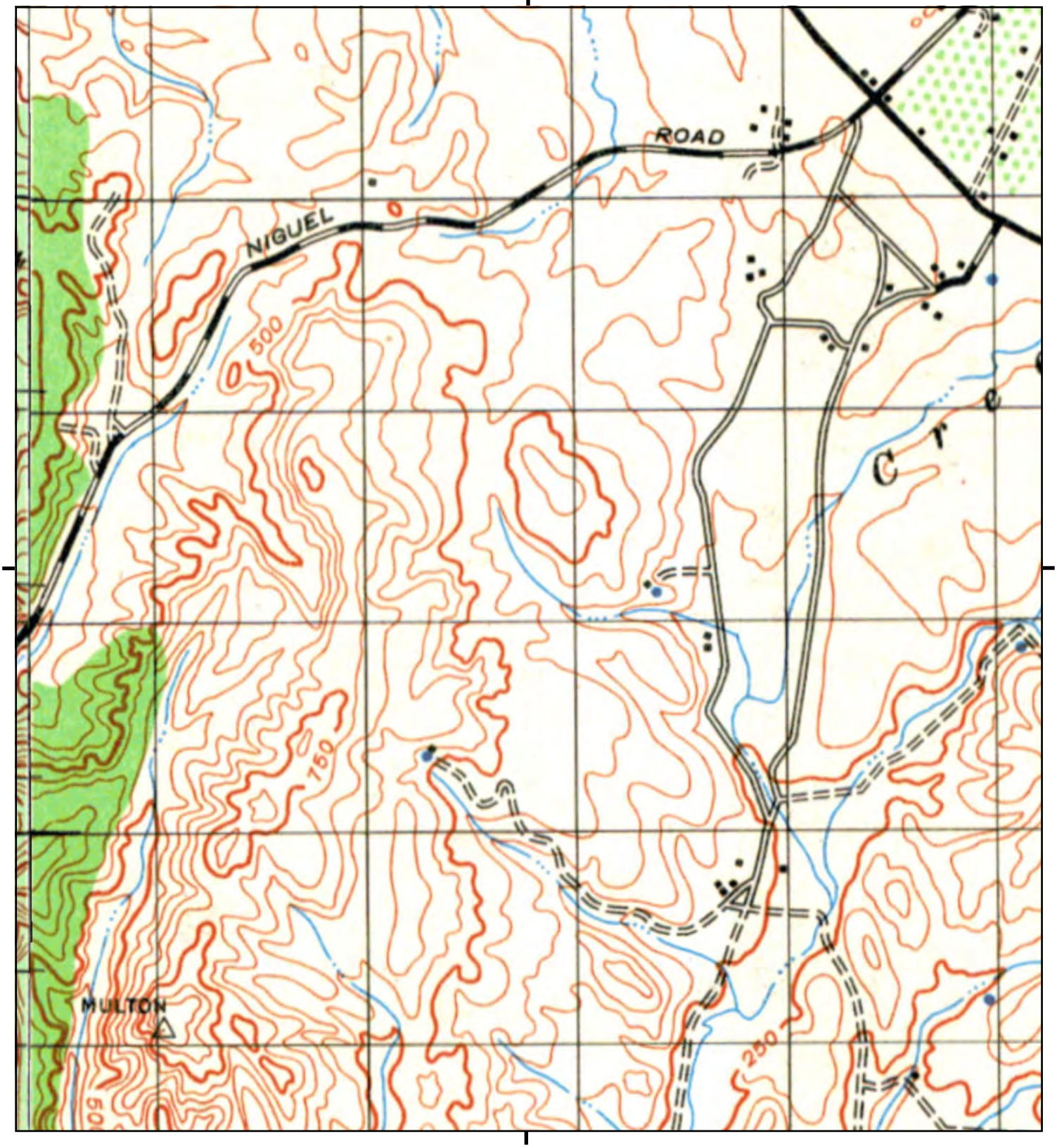
SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

1600

Historical Topo Map

1942



This report includes information from the following map sheet(s).

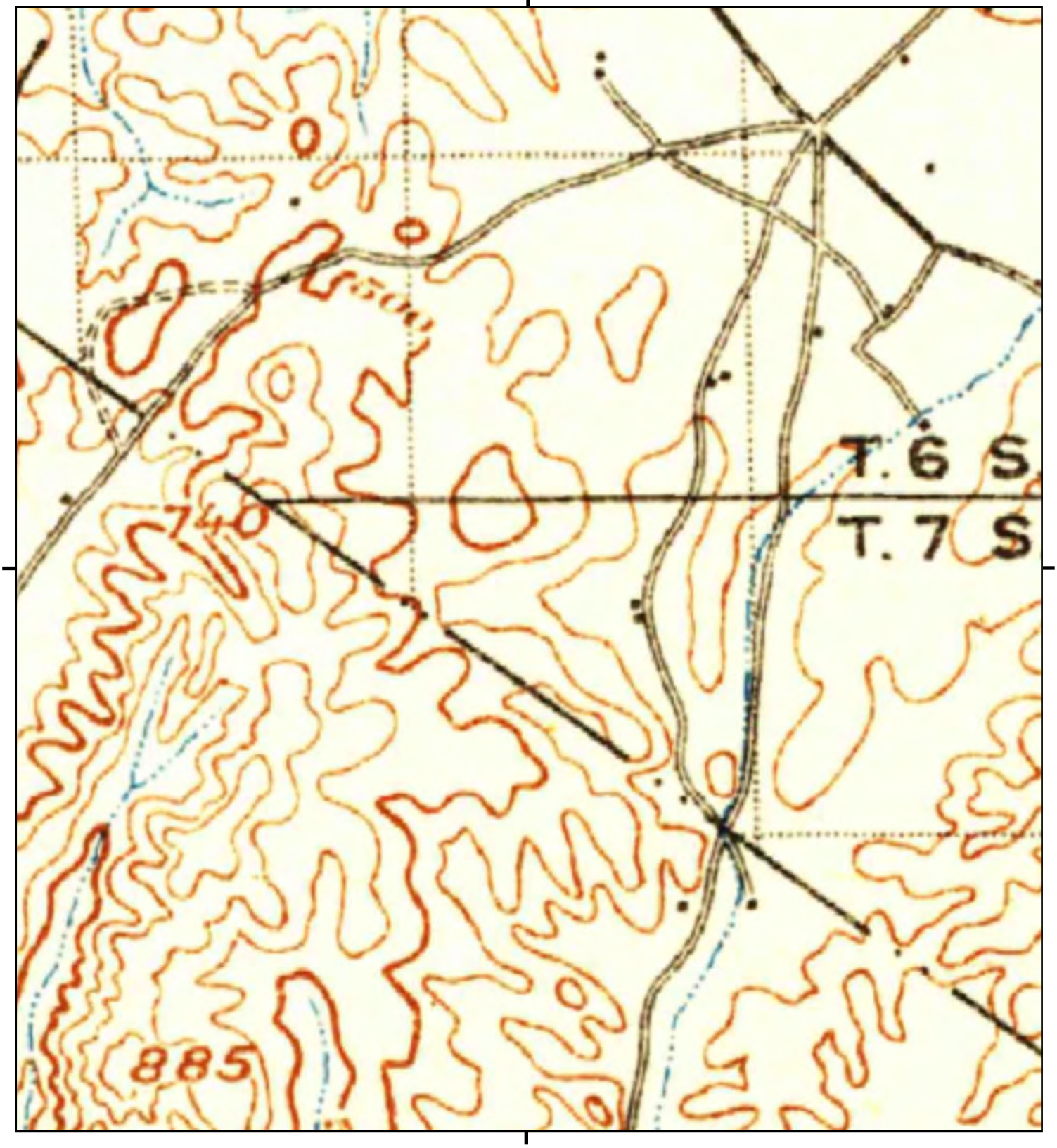
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, SANTIAGO PEAK, 1942, 15-minute
W, SANTA ANA, 1942, 15-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Corona, 1902, 30-minute

SITE NAME: Argonaut - MLC Holdings, Inc.
ADDRESS: 95 Argonaut
Aliso Viejo, CA 92656
CLIENT: Hillmann Environmental Co.

N

Argonaut - MLC Holdings, Inc.
95 Argonaut
Aliso Viejo, CA 92656

Inquiry Number: 7614512.5
April 05, 2024

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at approximately five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through current. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 1320 feet of the target property.

Summary information obtained is provided in the text of this report.

RECORD SOURCES

The EDR City Directory Report accesses a variety of business directory sources, including Haines, InfoUSA, Polk, Cole, Bresser, and Stewart. Listings marked as EDR Digital Archive access Cole and InfoUSA records. The various directory sources enhance and complement each other to provide a more thorough and accurate report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2020	EDR Digital Archive	X	X	X	-
2017	Cole Information	-	-	-	-
2014	Cole Information	X	X	X	-
2010	Cole Information	X	X	X	-
2005	Cole Information	X	X	X	-
2002	Haines Company	X	X	X	-
2001	Pacific Telephone	-	-	-	-
2000	Cole Information	X	X	X	-
1997	Pacific Bell	X	X	X	-
1995	Cole Information	X	X	X	-
	Pacific Bell	X	X	X	-
1992	Cole Information	X	X	X	-
	Pacific Bell	X	X	X	-
1991	Pacific Bell	-	X	X	-
1986	Pacific Bell	-	X	X	-
1980	Pacific Telephone	-	X	X	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1975	Luskey Brothers & Co., Inc.	-	X	X	-
	Luskeys Brothers & Co.	-	X	X	-
1971	Luskey Brothers Co., Inc.	-	-	-	-
1970	General Telephone Co., of California	-	X	X	-
1966	Pacific Telephone	-	-	-	-
1965	ROSS PUBLICATIONS INC.	-	-	-	-
1961	Luskey Brothers & Co.,	-	-	-	-
1960	Unknown	-	-	-	-
1956	LUSKEY BROTHERS & CO. INC.	-	-	-	-
1955	Luskeys Brothers & Co.	-	-	-	-
1952	Luskeys Directory Service Co.	-	-	-	-
1950	The Pacific Telephone and Telegraph Co.	-	-	-	-
1946	Southern California Telephone Co.	-	-	-	-
1945	McCutcheon & Bragonier	-	-	-	-
1941	Southern California Telephone Co.	-	-	-	-
1936	A SAM DAWSON DIRECTORY	-	-	-	-
1930	Western Directory Co.	-	-	-	-
1926	Pacific Telephone	-	-	-	-
1925	Western Directory Co.	-	-	-	-
1922	Kaasen Directory Co.	-	-	-	-
1921	Western Directory Co.	-	-	-	-
1920	Santa Ana Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

Address	*Type*	*Findings*
118 Playa Circle	Client Entered	
85 Argonaut	Client Entered	
92 Argonaut	Client Entered	
1 Argonaut	Client Entered	
5 Argonaut	Client Entered	
25343 Cedarbrook	Client Entered	

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

95 Argonaut
Aliso Viejo, CA 92656

FINDINGS DETAIL

Target Property research detail.

ARGONAUT

95 ARGONAUT

Year	*Uses*	*Source*
2020	AARON AKZIN	EDR Digital Archive
	ADAM LEVIN	EDR Digital Archive
	ADAM VARGULICK	EDR Digital Archive
	ALISO VIEJO COMM ASSOC	EDR Digital Archive
	ALLISON KERINS	EDR Digital Archive
	ALPHONSE SASSO	EDR Digital Archive
	ANDREW LAMPRECHT	EDR Digital Archive
	ANDREW MECHAM	EDR Digital Archive
	AUSSIE PET MOBILE	EDR Digital Archive
	BILL PERKINS	EDR Digital Archive
	BILLWISE INC	EDR Digital Archive
	BRAD KOLLAR	EDR Digital Archive
	BRENDA MATA	EDR Digital Archive
	BRIDGETTE ALVAREZ	EDR Digital Archive
	CHAD RASMUSSEN	EDR Digital Archive
	CHRIS MITCHELL	EDR Digital Archive
	CHRISTY METZLER	EDR Digital Archive
	CITADEL SERVICING CORP	EDR Digital Archive
	CROWN ACQUISITIONS	EDR Digital Archive
	DANIEL BRISCO	EDR Digital Archive
	DANIEL BURGENER	EDR Digital Archive
	DARYL FOWLER	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	DAVE CHENEY	EDR Digital Archive
	DAVE HARDEE	EDR Digital Archive
	DAVID DEKKER	EDR Digital Archive
	DAVID HARDEE	EDR Digital Archive
	DIANA HAROLDSEN	EDR Digital Archive
	DOUG MCDANIEL	EDR Digital Archive
	DOUGLAS MCDANIEL	EDR Digital Archive
	ELISSA VAN	EDR Digital Archive
	ELISSA VAN MARTER	EDR Digital Archive
	ERIN BEAN	EDR Digital Archive
	EUGENE ODONNELL	EDR Digital Archive
	EVELYNN KERN	EDR Digital Archive
	FERNANDO LUGO	EDR Digital Archive
	FIDELIS MEDICAL PARTNERS	EDR Digital Archive
	GODFREY DANIELS	EDR Digital Archive
	HANA PIERCE	EDR Digital Archive
	HOLLY HEITMANN	EDR Digital Archive
	ILEENE TREJO	EDR Digital Archive
	IPAYABLES INC	EDR Digital Archive
	JACOB DIMICK	EDR Digital Archive
	JAMES CLAWSON	EDR Digital Archive
	JENNIFER WELSH	EDR Digital Archive
	JEREMY ALGER	EDR Digital Archive
	JIM MARTIN	EDR Digital Archive
	JOHN ALANA	EDR Digital Archive
	JOHN BRUBAKER	EDR Digital Archive
	JORDAN DOOLIN	EDR Digital Archive
	JOSHUA HANSEN	EDR Digital Archive
	JOYSTAR TRAVEL	EDR Digital Archive
	KARLEEN WING	EDR Digital Archive
	KATHLEEN MOWERS	EDR Digital Archive
	KATY DRESSLER	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	KC MUIR	EDR Digital Archive
	KELCIE FERREIRA	EDR Digital Archive
	KENNETH MEANY	EDR Digital Archive
	KIRK ELLIOTT	EDR Digital Archive
	KRISTINA LAKE	EDR Digital Archive
	KRISTINE QUEEN	EDR Digital Archive
	KYLEE DAVIS	EDR Digital Archive
	LAUREN ARLINGTON	EDR Digital Archive
	LAUREN OCONNER	EDR Digital Archive
	LAUREN RUSSO	EDR Digital Archive
	LEANNE SGUARAKIS	EDR Digital Archive
	M NET FINANCIAL	EDR Digital Archive
	MARGOT MILLER	EDR Digital Archive
	MEGAN KENNEDY	EDR Digital Archive
	MELISSA CHUNG	EDR Digital Archive
	MITCH FISHER	EDR Digital Archive
	MNET FINANCIAL INC	EDR Digital Archive
	MNET HEALTH INC	EDR Digital Archive
	NAHALEH DOROUDIAN	EDR Digital Archive
	NATHAN BARRAGAN	EDR Digital Archive
	PACIFIC SUN FINANCIAL CORP	EDR Digital Archive
	PARAMOUNT BED USA	EDR Digital Archive
	PARIS ACOSTA	EDR Digital Archive
	PAUL MARIANI	EDR Digital Archive
	PETER DESANTO	EDR Digital Archive
	PHILLIP SETTLES	EDR Digital Archive
	PRESCRIBEWELLNESS LLC	EDR Digital Archive
	QUINTEN BRADY	EDR Digital Archive
	RANJIV CHOUDHARY	EDR Digital Archive
	ROBBY BEZNER	EDR Digital Archive
	SARA TEHRANI	EDR Digital Archive
	SCOTT MCKEON	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	SEPI MCDONNELL	EDR Digital Archive
	SHAE WILLES	EDR Digital Archive
	SHANNON BARROWMAN	EDR Digital Archive
	SKYLAR HAWS	EDR Digital Archive
	SPENCER BIGLER	EDR Digital Archive
	STEVE JOHANSSON	EDR Digital Archive
	SULMA BARRERA	EDR Digital Archive
	SUMMER GATES	EDR Digital Archive
	TARAH BRINKERHOFF	EDR Digital Archive
	TERRY MCDANIEL	EDR Digital Archive
	TIM EVERSOLE	EDR Digital Archive
	TOM CARROLL	EDR Digital Archive
	TOM GORSKI	EDR Digital Archive
	VIRIDIANA CHOW	EDR Digital Archive
	WILSONS JEWELERS	EDR Digital Archive
	YESSENIA MUNOZ	EDR Digital Archive
2014	1ST CITY BANCORP	Cole Information
	ALISO VIEJO COMM ASSOC	Cole Information
	AUSSIE PET MOBILE	Cole Information
	ESCROW AVENUE	Cole Information
	IPAYABLES	Cole Information
	JOYSTAR TRAVEL FAX LINE	Cole Information
	MNET FINANCIAL	Cole Information
	NORPAQ	Cole Information
	RJC ACCOUNTANCY	Cole Information
	RPM LENDING	Cole Information
	STATE FARM INSURANCE	Cole Information
	TOM GORSKI STATE FARM INSURANCE AG	Cole Information
	UNITY COMMUNITY CHURCH	Cole Information
	WALDROP INC	Cole Information
	WORK WELL SYSTEMS INC	Cole Information
2010	BILLWISE INC	Cole Information

FINDINGS

Year	Uses	Source
2010	CROWN ACQUISITIONS	Cole Information
	CYBERCODERS INC	Cole Information
	DAVID BATES	Cole Information
	DCSE INC	Cole Information
	FIRST CITY BANCORP	Cole Information
	HAGENUK USA	Cole Information
	JBA FINANCIAL GROUP	Cole Information
	JOYSTAR TRAVEL	Cole Information
	PACIFIC CROSSING LLC	Cole Information
	PACIFIC SUN FINANCIAL CORP	Cole Information
	PASTA BRAVO INC	Cole Information
	RJC ACCOUNTANCY	Cole Information
	SMART CARD PROS	Cole Information
	STATE FARM INSURANCE	Cole Information
	TRAVELSTAR INC	Cole Information
	WORK WELL SYSTEMS INC	Cole Information
	WYCORP	Cole Information
2005	AD MORTGAGE SERVICES INC	Cole Information
	ADVANCED CHIROPRACTIC MANAGEMENT	Cole Information
	AMERICAN REALTY CAPITAL	Cole Information
	DCSE INC	Cole Information
	DIBA CONSULTING SOFTWARE ENGINEERS	Cole Information
	ECOMMERCE PROCESSING	Cole Information
	ERA DREAM TEAM REALTY	Cole Information
	ESCROW AVENUE INC	Cole Information
	FIRST CITY BANCORP	Cole Information
	GREAT WESTERN HOME LOAN	Cole Information
	GW CAPITAL GROUP COM	Cole Information
	KWGC INC	Cole Information
	MCDANIEL CONSTRUCTION	Cole Information
	MCWILLIAMS FINANCIAL CORP	Cole Information
	MDR INC	Cole Information

FINDINGS

Year	Uses	Source
2005	MECHANICAL DYNAMICS	Cole Information
	MOONEY INSURANCE & INVESTMENTS	Cole Information
	NATIONS CAPITAL	Cole Information
	PASTA BRAVO CORPORATE OFFICE	Cole Information
	PASTABRAVO	Cole Information
	PROFIT SYSTEMS INC	Cole Information
	RATED	Cole Information
	RPM LENDING	Cole Information
	SKYNET TRACKING	Cole Information
	SMART CARD PROFESSIONALS	Cole Information
	STIKS & COGLIANESE	Cole Information
	TIMATED INC	Cole Information
	TORINO GROUP INC	Cole Information
	UNITED AMERICAN BANCORP	Cole Information
	UNITED FUNDING GROUP INC	Cole Information
	VISION DIRECT MARKETING	Cole Information
	WALDROP ENTERPRISES INC	Cole Information
	WORKWELL SYSTEMS INC	Cole Information
	ZEAREL INC	Cole Information
2000	C COGLIANESE	Cole Information
	M DICKS	Cole Information
	TERRI REILLY	Cole Information
1995	ADMIRAL FINANCIAL SVC	Cole Information
	AKZO CHEMICAL INC	Cole Information
	AMERICA FIRST RESIDENTIAL	Cole Information
	BRYAN, MARY B	Cole Information
	CONSOLIDATED FUNDING INC	Cole Information
	DESIGN FACTOR	Cole Information
	EXPERTEC CORP	Cole Information
	KYOCERA AMERICA INC	Cole Information
	KYOCERA INDUSTRIAL CERAMICS	Cole Information
	LA BARRE OKSNEE INSURANCE	Cole Information

FINDINGS

Year	Uses	Source
1995	LEGACY DEVELOPMENT CO	Cole Information
	LEGACY ELECTRONICS	Cole Information
	RICHARD A TINNELLY LAW OFFICES	Cole Information
	SEA RIDGE COMMUNITY CHURCH	Cole Information
	SOUTH COAST REHABILITATION SVC	Cole Information
	TPF INTL INC	Cole Information
	VARILEASE	Cole Information
1992	ADMIRAL FNCL SERV	Cole Information
	B D&T INC	Cole Information
	EXPERTEC CORP	Cole Information
	FILE MARK CORP	Cole Information
	I B H	Cole Information
	JORDAN PHARMACTCLS	Cole Information
	KYOCERA INDS CERAMC	Cole Information
	LABARRE OKSNEE INS	Cole Information
	LEGACY DEVLP CO	Cole Information
	MERCHANT MEGASAVER	Cole Information
	NEW CONCEPTS SYSTS	Cole Information
	SEARIDGE CMNTY CH	Cole Information
	T P F INTERNATIONAL	Cole Information
	TINNELLY RICHD ATTY	Cole Information
	VARILEASE	Cole Information
	W QUINN ASSOC INC	Cole Information
	ZOTOVICH S&ASSOCTS	Cole Information
	105 ADMIRAL FINANCIAL	Pacific Bell
	110 LA BARRE OKSNEE	Pacific Bell
	125 GENEVA SYSTEMS THE	Pacific Bell
	135 LEGACY DEVELOPMENT	Pacific Bell
	135 LEGACY HOME LOAN	Pacific Bell
	135 ZOTOVICH STEPHEN & ASSOCIATES	Pacific Bell
	190 BD & T INC	Pacific Bell
	190 CONSOLIDATED	Pacific Bell

FINDINGS

Year	Uses	Source
1992	190 EXPERTEC CORP	Pacific Bell
	190 INTEGRATED CUSTOM	Pacific Bell
	190 LEGACY EXECUTIVE	Pacific Bell
	190 TINNELLY RICHARD A	Pacific Bell
	190 TPF INTERNATIONAL	Pacific Bell
	190 W QUINN ASSOCIATES	Pacific Bell
	210 VARILEASE	Pacific Bell
	220 KYOCERA INDUSTRIAL	Pacific Bell
	BEHAVIORAL HEALTH	Pacific Bell
	CERAMIC CORP	Pacific Bell
	COMPANY	Pacific Bell
	Contd	Pacific Bell
	FILE MARK CORP	Pacific Bell
	FUNDING INC	Pacific Bell
	INSURANCE AGENCY	Pacific Bell
	NEW CONCEPTS SYSTEMS	Pacific Bell
	PHARMACEUTICALS	Pacific Bell
	SERVICES	Pacific Bell
	SOFTWARE INC	Pacific Bell

ARGONAUT DR

95 ARGONAUT DR

Year	Uses	Source
2002	ADVERTISINGSDESIGN CYBER CODERS	Haines Company
	ATTY DICKS&COGLIANESEA	Haines Company
	BUILDING BRITANNICMARITIME	Haines Company
	CAPITAL SAFETZONE	Haines Company
	CHRISTOPHER ATi Y CUMMINGS	Haines Company
	COGLIANESE	Haines Company
	CORP PASTABRAVO INC	Haines Company
	DICKS MICHAEL D	Haines Company
	FINANCE PROFIT PLUS INC	Haines Company

Year	Uses	Source
2002	FINANCIAL PACSUNFINANCIAL	Haines Company
	GROUP THERAPY INTERNATL	Haines Company
	INC COAST REALTY	Haines Company
	JAMILAGIDA	Haines Company
	NOWDOCS	Haines Company
	PAC MORTGAGE	Haines Company
	PC IVEEMETRIX	Haines Company
	PRECISIONREALTY	Haines Company
	PROFITSYSTEMSINC	Haines Company
	REILLYTERRI	Haines Company
	REMEDYSOFT	Haines Company
	RUBICON REALTY	Haines Company
	SUNHEALTHCARE	Haines Company
	USAINCHAGENUK	Haines Company

ARGONAUT ST

95 ARGONAUT ST

Year	Uses	Source
1997	100 SOUTH COAST	Pacific Bell
	105 QUIGLEY INS SERVICES INC	Pacific Bell
	115 PASTABRAVOINC	Pacific Bell
	200 DKS CONSTRUCTION	Pacific Bell
	200 THOMPSON KATHRYN G COMPANIES	Pacific Bell
	215 GRADY & DICKS	Pacific Bell
	220 KYOCERA INDUSTRIAL CERAMICS CORP	Pacific Bell
	PRECISION REALTY FINANCE	Pacific Bell
	RCM VENTURES INC	Pacific Bell
	REHABILITATION SERVICES	Pacific Bell
	THERAPYINTERNATL	Pacific Bell

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

7WHITEWOOD CT

2 7WHITEWOOD CT

Year	Uses	Source
1995	Crawford Oscar & Kathryn	Pacific Bell

ABRUZZI

2 ABRUZZI

Year	Uses	Source
1992	Michalek John & Mary Lee	Pacific Bell

15 ABRUZZI

Year	Uses	Source
1992	Hougland R	Pacific Bell

17 ABRUZZI

Year	Uses	Source
1992	Van Beek Jim	Pacific Bell

28 ABRUZZI

Year	Uses	Source
1997	Reestman Thomas J	Pacific Bell

29 ABRUZZI

Year	Uses	Source
1997	WHITE STONE	Pacific Bell
1992	Fagan James J	Pacific Bell

31 ABRUZZI

Year	Uses	Source
1992	Collins John & Christine	Pacific Bell

FINDINGS

33 ABRUZZI

Year	Uses	Source
1992	Wiaschin David	Pacific Bell

37 ABRUZZI

Year	Uses	Source
1997	Mouchard Andre	Pacific Bell
1992	Mouchard Andre	Pacific Bell

47 ABRUZZI

Year	Uses	Source
1992	Andross Cheryl L	Pacific Bell

49 ABRUZZI

Year	Uses	Source
1997	Miller Gene	Pacific Bell
1992	Miller Gene	Pacific Bell

51 ABRUZZI

Year	Uses	Source
1997	Douthat Stephen & Sue	Pacific Bell
1992	Douthat Stephen & Sue	Pacific Bell

63 ABRUZZI

Year	Uses	Source
1997	Meisami Patricia	Pacific Bell

69 ABRUZZI

Year	Uses	Source
1997	Kuenne J	Pacific Bell
1992	Kuenne J	Pacific Bell

75 ABRUZZI

Year	Uses	Source
1997	Okabayashi Gordon	Pacific Bell

FINDINGS

ALISO CREEK RD

23002 ALISO CREEK RD

Year	Uses	Source
2020	CARL'S JR	EDR Digital Archive
2014	CARLS JR	Cole Information
2010	CARLS JR	Cole Information
2005	SOUTHLAND ORTHODONTIC MNGMNT	Cole Information
	SOUTHLAND ORTHODONTIC MANAGEMENT	Cole Information
1997	CARLS JR RESTAURANTS	Pacific Bell
1995	CARLS JR RESTAURANT	Cole Information
1992	CARLS JR	Pacific Bell
	RESTAURANTS	Pacific Bell

23011 ALISO CREEK RD

Year	Uses	Source
1991	Brunschwig & Fils Inc	Pacific Bell
	Taylor Michael Designs	Pacific Bell

23022 ALISO CREEK RD

Year	Uses	Source
2020	CHEVRON USA INC	EDR Digital Archive
	ATM	EDR Digital Archive
2014	CHEVRON STATION EXTRA MILE ALISO VIE	Cole Information
	CHEVRON	Cole Information
2010	CHEVRON	Cole Information
2005	CHEVRON STATIONS INC	Cole Information
2002	CHEVRON USA	Haines Company
1997	CHEVRON USA	Pacific Bell
1995	CHEVRON USA INC	Cole Information
1992	CHEVRON USA	Pacific Bell

23092 ALISO CREEK RD

Year	Uses	Source
2002	CARLS JR	Haines Company
	RESTAURANT	Haines Company

Year	Uses	Source
2002	GLOBa	Haines Company

23094 ALISO CREEK RD

Year	Uses	Source
1995	California Patio n Spa	Pacific Bell

AM B VIRGKTA 9142 E WAAMCE

4 AM B VIRGKTA 9142 E WAAMCE

Year	Uses	Source
1975	La Porte W	Luskeys Brothers & Co.

AMBAR

1 AMBAR

Year	Uses	Source
2002	RVINE	Haines Company

14 AMBAR

Year	Uses	Source
1970	Wagner Geo ll	General Telephone Co., of California

15 AMBAR

Year	Uses	Source
1970	Nissen Bernard A S	General Telephone Co., of California

AMBER

1 AMBER

Year	Uses	Source
2020	SUSAN LOCKRIDGE	EDR Digital Archive
	JUANITA LOCKRIDGE	EDR Digital Archive
	RONALD LOCKRIDGE	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	MIEU CHEN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2002	LOCKJIDGERonald 00 e	Haines Company

Year	Uses	Source
2000	OCCUPANT UNKNOWN	Cole Information
1995	CHEN, PETER J	Cole Information
1992	Chen Peter J	Pacific Bell
	CHEN, PETER J	Cole Information

2 AMBER

Year	Uses	Source
2020	DOUGLAS SAUNDERS	EDR Digital Archive
2014	DOUGLAS SAUNDERS	Cole Information
2010	DOUGLAS SAUNDERS	Cole Information
2005	DOUGLAS SAUNDERS	Cole Information
2002	SAULTRick	Haines Company
	OAULT Rick	Haines Company
2000	RICHARD AULT	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

3 AMBER

Year	Uses	Source
2020	CHARLENE FAZIO	EDR Digital Archive
	OTTO FAZIO-RECHENBERG	EDR Digital Archive
	OTFRIED RECHENBERG	EDR Digital Archive
2014	OTFRIED RECHENBERG	Cole Information
2010	CHARLENE FAZIO	Cole Information
2005	CHARLENE FAZIO	Cole Information
2002	FAZIOChareane	Haines Company
	REDCHENBERG Otto	Haines Company
2000	DAWN RECHENBERG	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

4 AMBER

Year	Uses	Source
2020	ELISE LEMANS	EDR Digital Archive
	TOMOKO LEMANS	EDR Digital Archive
	LUC LEMANS	EDR Digital Archive

FINDINGS

Year	Uses	Source
2014	LUC LEMANS	Cole Information
2010	LUC LEMANS	Cole Information
2005	MAJID MOKHBERY	Cole Information
2002	SMOKHBERYJaaad	Haines Company
2000	MAJID MOKHBERY	Cole Information
1995	MOKHBERY, MAJID	Cole Information

5 AMBER

Year	Uses	Source
2020	MORGAN LEWIS	EDR Digital Archive
	SHARI SANTILLI	EDR Digital Archive
2014	SHARI SANTILLI	Cole Information
2005	CHRISTINA LEWIS	Cole Information
2002	LEWSChistia	Haines Company
2000	DOROTHY BEALL	Cole Information
1995	BEALL, LINDA M	Cole Information

6 AMBER

Year	Uses	Source
2020	ADAM GREENE	EDR Digital Archive
2014	KI NAM	Cole Information
2010	KI NAM	Cole Information
2002	ONAMIOyeang	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information
1995	EEJIMASUTTON, LOUISE I	Cole Information

7 AMBER

Year	Uses	Source
2020	CHI-TSE LEE	EDR Digital Archive
2014	RICHARD LEDREW	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	RICKI BLUHM	Cole Information
2002	OLEEChi	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information

Year	Uses	Source
1995	HAGERTY, SCOTT	Cole Information
1992	Hagerty Scott	Pacific Bell
	Hagerty Scott	Pacific Bell
	HAGERTY, SCOTT	Cole Information

8 AMBER

Year	Uses	Source
2020	MANISH MENGHANI	EDR Digital Archive
	AMIT MENGHANI	EDR Digital Archive
	EKTA MENGHANI	EDR Digital Archive
2014	MANISH MENGHANI	Cole Information
2005	MANISH MENGHANI	Cole Information
2002	MENGHANIMoanly	Haines Company
2000	RICKI BLUHM	Cole Information
1992	Bluhm R L	Pacific Bell

9 AMBER

Year	Uses	Source
2020	SERENA NGUYEN	EDR Digital Archive
	RYAN NGUYEN	EDR Digital Archive
	HUYEN NGUYEN	EDR Digital Archive
2014	SERENA NGUYEN	Cole Information
2010	SERENA NGUYEN	Cole Information
2005	SERENA NGUYEN	Cole Information
2002	LNGLYEN Serena	Haines Company
2000	SERENA NGUYEN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

10 AMBER

Year	Uses	Source
2020	AMY VO	EDR Digital Archive
	CHRIS VO	EDR Digital Archive
	TIEN VO	EDR Digital Archive
	AMY WRUBLEWSKI	EDR Digital Archive

Year	Uses	Source
2014	TOM NIM	Cole Information
2010	ERIC MOLLER	Cole Information
2005	THOMAS PYLES	Cole Information
2002	ORAISDANAMohamad	Haines Company
2000	M RAISDANA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

11 AMBER

Year	Uses	Source
2020	NAZILA PEYMAN	EDR Digital Archive
2014	MIKE RAZANI	Cole Information
2010	MIKE RAZANI	Cole Information
2005	MIKE RAZANI	Cole Information
2002	ORAZANIMika L	Haines Company
2000	MIKE RAZANI	Cole Information
1995	RAZANI, MIKE L	Cole Information

12 AMBER

Year	Uses	Source
2020	LEON STHILAIRE	EDR Digital Archive
	AMY ST. HILAIRE	EDR Digital Archive
2014	MICHAEL STHILAIRE	Cole Information
2010	MICHAEL STHILAIRE	Cole Information
2005	MICHAEL STHILAIRE	Cole Information
2002	OHOENN 8 KENSAmy	Haines Company
2000	GUSTAVO BATTEL	Cole Information
1995	BATTEL, GUSTAVO A	Cole Information

13 AMBER

Year	Uses	Source
2020	JING LEI	EDR Digital Archive
2014	WALDRON WAYNE	Cole Information
2010	LEITHA DUVINAGE	Cole Information
2005	WAYNE WALDRON	Cole Information

Year	Uses	Source
2002	WALORONWayne	Haines Company
2000	LEITHA DUVINAGE	Cole Information
	WAYNE WALDRON	Cole Information
	DOROTHY GOULD	Cole Information
1995	DUVINAGE, LEITHA	Cole Information
	WALDRON, WAYNE	Cole Information
1992	Waldron Wayne	Pacific Bell
	DUVINAGE, LEITHA	Cole Information
	WALDRON, WAYNE	Cole Information

14 AMBER

Year	Uses	Source
2020	MIA NDALUGI	EDR Digital Archive
	JALEH GHOBADI	EDR Digital Archive
2014	NICOLE FOX	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	DENISE VEJAR	Cole Information
2002	SGHOBADIAli	Haines Company
1995	OCCUPANT UNKNOWNN	Cole Information

15 AMBER

Year	Uses	Source
2020	SHERIF MOUSTAFA	EDR Digital Archive
2014	SHERIF MOUSTAFA	Cole Information
2010	FREDERICK BLOOM	Cole Information
2005	FREDERICK BLOOM	Cole Information
2002	PARt SSteven	Haines Company
2000	STEVEN PARIS	Cole Information
1995	TRINDL, JOSEPH S	Cole Information

16 AMBER

Year	Uses	Source
2020	JEFFREY MORRIS	EDR Digital Archive
	KIM ALLEN-MORRIS	EDR Digital Archive

Year	Uses	Source
2010	JEFF MORRIS	Cole Information
2005	JEFF MORRIS	Cole Information
2002	ORANDLESCha 9es 00Dr	Haines Company
1995	FADTKE, ECKHARD W	Cole Information

17 AMBER

Year	Uses	Source
2020	MOOSA KAZEMZADEHPARSI	EDR Digital Archive
	BRYAN GARCIA	EDR Digital Archive
	SAMAN PARSI	EDR Digital Archive
2014	JAMILEH BARADARAN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	MILLARD COOK	Cole Information
2002	OLASKASRay	Haines Company
2000	RAY LASKAS	Cole Information
1995	LASKAS, RAY	Cole Information

114 AMBER

Year	Uses	Source
1992	Castro Ernest	Pacific Bell

AMBER DR

16 AMBER DR

Year	Uses	Source
1986	Ryan R	Pacific Bell

AMBER ST

1 AMBER ST

Year	Uses	Source
1997	Chen Peter J	Pacific Bell

8 AMBER ST

Year	Uses	Source
1997	Bluhm R L	Pacific Bell

13 AMBER ST

Year	Uses	Source
1997	Waldron Wayne	Pacific Bell

AN FIRE S PRINKLE R CORP

11 AN FIRE S PRINKLE R CORP

Year	Uses	Source
1980	OOS Walnut Av @La Habra@	Pacific Telephone
	F from Whittler Telephones Call	Pacific Telephone

ANACAPA LN

40 ANACAPA LN

Year	Uses	Source
2020	LESLEE PERCY	EDR Digital Archive
	BARBARA MULLARD	EDR Digital Archive
	PERCY GAVIN	EDR Digital Archive
	MARK PERCY	EDR Digital Archive
	TAYLOR PERCY	EDR Digital Archive
2014	SCOTT DUNTLEY	Cole Information

42 ANACAPA LN

Year	Uses	Source
2020	NORIAKI FUJII	EDR Digital Archive
	AKIKO FUJII	EDR Digital Archive

44 ANACAPA LN

Year	Uses	Source
2020	SURESH POTLURI	EDR Digital Archive
	NEERAJA POTLURI	EDR Digital Archive
	CHANDRA POTLURI	EDR Digital Archive
2014	SURESH POTLURI	Cole Information

46 ANACAPA LN

Year	Uses	Source
2020	JAMES KLEIN	EDR Digital Archive

Year	Uses	Source
2020	JANETTE JASKOWIAK	EDR Digital Archive

48 ANACAPA LN

Year	Uses	Source
2020	ANTHONY TY	EDR Digital Archive
	GEORGINA TY	EDR Digital Archive
	GIGI TY	EDR Digital Archive
2014	ANTHONY TY	Cole Information

49 ANACAPA LN

Year	Uses	Source
2020	JUHI DUDANI	EDR Digital Archive
	SAHIBSINGH DUDANI	EDR Digital Archive
2014	SAHIB DUDANI	Cole Information

50 ANACAPA LN

Year	Uses	Source
2020	KRISTIN SICKLE	EDR Digital Archive
	MICHAEL SICKLE	EDR Digital Archive
2014	PHILIP WONG	Cole Information

51 ANACAPA LN

Year	Uses	Source
2020	CANDY LEE	EDR Digital Archive
	NATHAN LEE	EDR Digital Archive
	DARREN LEE	EDR Digital Archive
	MICHAEL LEE	EDR Digital Archive
2014	MICHAEL LEE	Cole Information

52 ANACAPA LN

Year	Uses	Source
2020	CHRISTOPHER ASHER	EDR Digital Archive
2014	ALAN SIMON	Cole Information

53 ANACAPA LN

Year	Uses	Source
2020	CIDAMBI AYER	EDR Digital Archive
	SANJAY AYER	EDR Digital Archive
	ANITA AYER	EDR Digital Archive
2014	DAMION PUGH	Cole Information

54 ANACAPA LN

Year	Uses	Source
2020	FEDERICO GIACOBBE	EDR Digital Archive
2014	MARCELA HERNANDEZ	Cole Information

55 ANACAPA LN

Year	Uses	Source
2020	MOAT HARDY	EDR Digital Archive
2014	HARDY MOAT	Cole Information

56 ANACAPA LN

Year	Uses	Source
2020	JOSEPH IACOBELLI	EDR Digital Archive
	AMELIA IACOBELLI	EDR Digital Archive
2014	JOSEPH LACOBELLI	Cole Information

57 ANACAPA LN

Year	Uses	Source
2020	RYAN KLEIN	EDR Digital Archive
2014	RYAN KLEIN	Cole Information

58 ANACAPA LN

Year	Uses	Source
2020	HIROSHI KAWAGUCHI	EDR Digital Archive
	YUKI KAWAGUCHI	EDR Digital Archive
2014	HIROSHI KAWAGUCHI	Cole Information

59 ANACAPA LN

Year	Uses	Source
2020	LADISLAU CSOSZ	EDR Digital Archive

Year	Uses	Source
2020	PAMELA LIOSI	EDR Digital Archive
	ECATERINA CSOSZ	EDR Digital Archive
	FRANK LIOSI	EDR Digital Archive
	ERIC TRAUT	EDR Digital Archive
2014	LADISLAU CSOSZ	Cole Information

60 ANACAPA LN

Year	Uses	Source
2020	TERENCE CHANG	EDR Digital Archive
	KATHERINE CHANG	EDR Digital Archive
2014	TERENCE CHANG	Cole Information

61 ANACAPA LN

Year	Uses	Source
2020	MARK SLYMEN	EDR Digital Archive
	DANIELLE SLYMEN	EDR Digital Archive
2014	MARK SLYMEN	Cole Information

62 ANACAPA LN

Year	Uses	Source
2020	EDWIN CHEN	EDR Digital Archive
2014	EDWIN CHEN	Cole Information

63 ANACAPA LN

Year	Uses	Source
2020	TERRY CAHILL	EDR Digital Archive
	ELLEN PRIMACK	EDR Digital Archive
2014	TERENCE CAHILL	Cole Information

64 ANACAPA LN

Year	Uses	Source
2020	MORTEZA HOSSEINI	EDR Digital Archive
	NASRENE HOSSEINI	EDR Digital Archive
	AFROZE HOSSEINI	EDR Digital Archive
2014	MORTEZA HOSSEINI	Cole Information

67 ANACAPA LN

Year	Uses	Source
2020	JIAQI WANG	EDR Digital Archive
	ADAM AKIL	EDR Digital Archive
	ZOUBIDA AKIL	EDR Digital Archive
	KOUSAY AKIL	EDR Digital Archive
2014	SAMER MALAS	Cole Information

71 ANACAPA LN

Year	Uses	Source
2020	ABO ABDALLAH	EDR Digital Archive
	ABDALLAH ABDO	EDR Digital Archive
2014	ABDALLAH ABDO	Cole Information

73 ANACAPA LN

Year	Uses	Source
2020	KENNETH CONSTABLE	EDR Digital Archive
	JACKIE CONSTABLE	EDR Digital Archive
2014	LAUREN CONSTABLE	Cole Information

75 ANACAPA LN

Year	Uses	Source
2020	TEODORO JIMENEZ	EDR Digital Archive
2014	TEODORO JIMENEZ	Cole Information

ARGONAUT

1 ARGONAUT

Year	Uses	Source
2020	AMERICAN FUTURE TRADING	EDR Digital Archive
	AG INVESTMENT GROUP LLC	EDR Digital Archive
	DANCE PALACE	EDR Digital Archive
	WELLFIT SOLUTIONS 360	EDR Digital Archive
	AZARIAN US GYMNASTICS	EDR Digital Archive
	EDMUND OCONNOR	EDR Digital Archive
	JENNIFER MCCARNEY	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	MICHELLE SPROTT	EDR Digital Archive
	MONICA THEIS	EDR Digital Archive
	KRASSI VARBANOVA	EDR Digital Archive
	ALAN RAY	EDR Digital Archive
	RACHEL BUNETTA	EDR Digital Archive
	HOPE LITTON	EDR Digital Archive
	MICHAEL VALDEZ	EDR Digital Archive
	ASHLEY CHATMAN	EDR Digital Archive
	HANNAH BOELTS	EDR Digital Archive
	ANDREA CANTRELL	EDR Digital Archive
	AZARIAN MARINA	EDR Digital Archive
	ADAM YOUNG	EDR Digital Archive
	TIM KLEMPNAUER	EDR Digital Archive
	EMILY VALDEZ	EDR Digital Archive
	KELLY CASH	EDR Digital Archive
	HANNA CHRISTIAN	EDR Digital Archive
	MACKENZIE BRYNER	EDR Digital Archive
	EDUARD AZARIAN	EDR Digital Archive
	HOPE HANSON	EDR Digital Archive
	PERRY DAVIES	EDR Digital Archive
	ERIKA PURTELL	EDR Digital Archive
2014	AMERICAN FUTURE TRADING	Cole Information
	TOY COLLECTORS EXCHANGE	Cole Information
	AZARIAN U S GYMNASTICS	Cole Information
	SIMMONS WILLIAM	Cole Information
	U S GYMNASTICS TRAINING	Cole Information
2010	TOY COLLECTORS EXCHANGE	Cole Information
	AZARIAN US GYMNASTICS	Cole Information
2005	VRS	Cole Information
	US GYMNASTICS TRAINING CENTER	Cole Information
	AMERICAN FUTURE TRADING	Cole Information
	KLEMPNAUER ENTERPRISES	Cole Information

FINDINGS

Year	Uses	Source
2005	BABY LEAGUE INC	Cole Information
1992	200 NATURAL WHITE INC	Pacific Bell
	NATURAL WHITE INC	Cole Information
	BABY LEAGUE	Cole Information
	NATL GYMNASTICS CTR	Cole Information
	SIMMONS, WILLIAM	Cole Information

2 ARGONAUT

Year	Uses	Source
2014	C CHAPMAN	Cole Information

3 ARGONAUT

Year	Uses	Source
1995	ROSALIND RICHARDS CORP	Cole Information
1992	AUTOTECH SPORT TUNING	Pacific Bell
	AUTOTECH SPORT TUNG	Cole Information

5 ARGONAUT

Year	Uses	Source
2020	BELLA B BODYCARE INC	EDR Digital Archive
	BELLA BRANDS INC	EDR Digital Archive
	AKTIVE LIFESTYLES INC	EDR Digital Archive
	JACKSON LIM	EDR Digital Archive
	JON HARB	EDR Digital Archive
	LIN STEVE	EDR Digital Archive
	ERNIE CANEZ	EDR Digital Archive
	SHANNON DIPADOVA	EDR Digital Archive
2014	BELLA BODYCARE INC	Cole Information
2010	TIMOLINO LIMITED	Cole Information
2005	TIMOLINO LTD	Cole Information
	DRINKWARES COM INC	Cole Information
1995	PETER C DAVID CO	Cole Information
	NATIONAL GYMNASTICS TRAINING	Cole Information
1992	PETER C DAVID CO	Pacific Bell

Year	Uses	Source
1992	PETER C DAVID CO	Cole Information

7 ARGONAUT

Year	Uses	Source
2020	4TH & PORTERO INVEST LLC	EDR Digital Archive
	NATIONAL FINANCIAL LENDING	EDR Digital Archive
2010	POINT CENTER FINANCIAL	Cole Information
1995	SCREENING SYSTEMS INC	Cole Information
1992	SCREENING SYSTEMS INC	Pacific Bell
	SCREENING SYSTEMS	Cole Information

8 ARGONAUT

Year	Uses	Source
2020	SURF INDUSTRY MFR ASSN	EDR Digital Archive
	CCAV CELEBRATION CHURCH	EDR Digital Archive
	AMERICAN TRIM	EDR Digital Archive
	FIRST WORLD FINANCIAL	EDR Digital Archive
	INCEPTUS MEDICAL LLC	EDR Digital Archive
	BRIAN COX	EDR Digital Archive
	LORRAINE SPALLINA	EDR Digital Archive
	CLAUDIO PLAZA	EDR Digital Archive
	RICK QUICK	EDR Digital Archive
	TOM MITCHELL	EDR Digital Archive
	GREG ULRICH	EDR Digital Archive
2014	ANTIQUE AMERICAN INDIAN ART	Cole Information
	INCEPTUS MEDICAL LLC	Cole Information
	CCAV CELEBRATION CHURCH	Cole Information
	AMERICAN TRIM	Cole Information
	CAFE ALISO	Cole Information
2010	TRAYLOR PAPERS	Cole Information
	SURF INDUSTRY MFRS ASSN	Cole Information
	VINCENT D LIFESTYLE	Cole Information
	DISTINCTIVE DESIGNS IN IRON	Cole Information
	CAFE ALISO	Cole Information

Year	Uses	Source
2010	REALSURE	Cole Information
	AMERICAN TRIM	Cole Information
2005	FIRST WORLD REAL ESTATE	Cole Information
	L H F ENTERPRISES INC	Cole Information
	FIRST WORLD FINANCIAL INC	Cole Information
	TRUESPEED WIRELESS INC	Cole Information
	CAFE ALISO	Cole Information
	LEADING EDGE BROADBAND	Cole Information
	FWF HOME LOANS	Cole Information
1995	AMERICAN SPEEDY PRINTING CTR	Cole Information
	DEANNA MARIES CUSTOM UPHLSTRY	Cole Information
	PRICE POINT MICRO TECHNOLOGIES	Cole Information
	SPILLMANN, KONRAD	Cole Information
1992	AMERICAN SPEEDY PRINTING	Pacific Bell
	CENTERS OF LAGUNA	Pacific Bell
	CENTERS OF LAGUNA	Pacific Bell
	100 DYNAMIC ELECTRONICS	Pacific Bell
	130 SURFACE MOUNT	Pacific Bell
	SPECIALTIES SMS	Pacific Bell
	170 DEANNA MARIES	Pacific Bell
	CUSTOM DRAPERIES & UPHOLSTERY	Pacific Bell
	180 J fS SANDWICH SHOP	Pacific Bell
	SURFACE MNT SPCLTY	Cole Information
	AMER SPEEDY PRNTG	Cole Information
	J QS SANDWICH SHOP	Cole Information
	SIGN PROS	Cole Information

15 ARGONAUT

Year	Uses	Source
2020	G S L D HOLDINGS LLC	EDR Digital Archive
	CENTON ELECTRONICS INC	EDR Digital Archive
	AMBRY GENETICS CORP	EDR Digital Archive
	CHRISTOPHER RAMIREZ	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	RUSSELL TALLEY	EDR Digital Archive
	SARAH OGDEN	EDR Digital Archive
	NAVISH DADIGHAT	EDR Digital Archive
	DAVID TRAN	EDR Digital Archive
	ELAINE WELTMER	EDR Digital Archive
	NICHOLAS SERRANO	EDR Digital Archive
	MICHAEL MARTINSON	EDR Digital Archive
	ERICK LIN	EDR Digital Archive
	MARIA FRICK	EDR Digital Archive
	LAUREN GARRETT	EDR Digital Archive
	DAGNY NOETH	EDR Digital Archive
	KIMBERLY ULRICH	EDR Digital Archive
	MELISSA FUMO	EDR Digital Archive
	MOLLY BONI	EDR Digital Archive
	ANDREW CASTILLO	EDR Digital Archive
	PEI TSAI	EDR Digital Archive
	JENNIFER HERRERA-MULLAR	EDR Digital Archive
	BRIAN PAYNE	EDR Digital Archive
	VINUTHA SAMETH	EDR Digital Archive
	ERICA WELLINGTON	EDR Digital Archive
	JESSICA EHLERS	EDR Digital Archive
	SWATI SHAH	EDR Digital Archive
	SIMI SOROOSH	EDR Digital Archive
	SCOTT WATTERS	EDR Digital Archive
	KYLE WULFE	EDR Digital Archive
	JACLYN CONNOR	EDR Digital Archive
	EMILY WIKIDAL	EDR Digital Archive
	KELLY BURK	EDR Digital Archive
	VICKIE HSUAN	EDR Digital Archive
	SRIJANI SRIDHAR	EDR Digital Archive
	TIANA ADAMS	EDR Digital Archive
	MELISSA YOON	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	MICHAEL TROTTMAN	EDR Digital Archive
	MARIEKE SVOBODA	EDR Digital Archive
	IKE OKENWA	EDR Digital Archive
	JEREMY JARRETT	EDR Digital Archive
	NICK DUARTE	EDR Digital Archive
	CAMELLIA SHOAPOUR	EDR Digital Archive
	CAROLYN TAYLOR	EDR Digital Archive
	NICOLE CURRY	EDR Digital Archive
	ESPERANZA MANZO	EDR Digital Archive
	EMILY HERRMANN	EDR Digital Archive
	SHANNON KALSOW	EDR Digital Archive
	HARRISON TRIPP	EDR Digital Archive
	ZACH JENSEN	EDR Digital Archive
	ALEXANDRA THORFINNSON	EDR Digital Archive
	PAM STEELE	EDR Digital Archive
	JESSICA YAN	EDR Digital Archive
	KRISTI MUDRINICH	EDR Digital Archive
	HOLLE CLOUTIER	EDR Digital Archive
	BETH SOUDERS	EDR Digital Archive
	LISA TSAI	EDR Digital Archive
	STEVEN MUAWAD	EDR Digital Archive
	COURTNEY SCHROEDER	EDR Digital Archive
	TYLER LANDRITH	EDR Digital Archive
	KATIE SULLIVAN	EDR Digital Archive
	ISSA COULTAS	EDR Digital Archive
	TRENT DEVENISH	EDR Digital Archive
	LAUREN BOWLING	EDR Digital Archive
	JAMES CHOI	EDR Digital Archive
	ALLISTAIR GALINDO	EDR Digital Archive
	ALAN GRECI	EDR Digital Archive
	PHILLIP GRAY	EDR Digital Archive
	BRYSON BELLEFEUILLE	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	ASHLEY COOK	EDR Digital Archive
	NADIA HO	EDR Digital Archive
	AMAL GMAIL	EDR Digital Archive
	MARJOLINE CLOVET	EDR Digital Archive
	SUSANNE FOX	EDR Digital Archive
	HANNAH MCCLEARY	EDR Digital Archive
	JAMIE BERBERIAN	EDR Digital Archive
	BOLADE OLAMBIWONNU	EDR Digital Archive
	MICHELLE SMITH	EDR Digital Archive
	BRITTANY CLARK	EDR Digital Archive
	TED HANIK	EDR Digital Archive
	NATHANAEL LENART	EDR Digital Archive
	KRISTA KAZMIERKIEWICZ	EDR Digital Archive
	HEIDI SWANSON-FELLOWS	EDR Digital Archive
	SARA WIENKE	EDR Digital Archive
	EMMA AUSTIN	EDR Digital Archive
	ANNA DISPENSA	EDR Digital Archive
	DARCE SCHULTZ	EDR Digital Archive
	TRICIA ADAMS	EDR Digital Archive
	FRED ELBANCOL	EDR Digital Archive
	RACHID KARAM	EDR Digital Archive
	FAYROUZ MATTHEWS	EDR Digital Archive
	DAVID HOANG	EDR Digital Archive
	JULIANA CASTRO-OSORIO	EDR Digital Archive
	DAVE LIEBETREU	EDR Digital Archive
	JASON WEAMER	EDR Digital Archive
	MARIANNE BOWMAN	EDR Digital Archive
	WEI GUO	EDR Digital Archive
	JOSEPH WALBURN	EDR Digital Archive
	MARIA FRANCE	EDR Digital Archive
	DAVID SIMMONS	EDR Digital Archive
	COLLEEN MCCULLOUGH	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	BRYANT ROMAGNANO	EDR Digital Archive
	ELLESSE SUMNER	EDR Digital Archive
	RUBY OBRIEN	EDR Digital Archive
	HEATHER NEWMAN	EDR Digital Archive
	BRICE SARVER	EDR Digital Archive
	SHUWEI LI	EDR Digital Archive
	IGOR PETRIK	EDR Digital Archive
	SHELA TO	EDR Digital Archive
	KATE KIILEHUA	EDR Digital Archive
	ROBERT HOINESS	EDR Digital Archive
	SAMUEL TORNEY	EDR Digital Archive
	JARVIS MICHAEL	EDR Digital Archive
	AMELIA TRUJILLO	EDR Digital Archive
	KATHLEEN BUCLATIN	EDR Digital Archive
	HELEN KIM	EDR Digital Archive
	SARAH MITCHELL	EDR Digital Archive
	ZOE POWIS	EDR Digital Archive
	ROBINA SMITH	EDR Digital Archive
	JAMES SONG	EDR Digital Archive
	ADAM MALONE	EDR Digital Archive
	BRIANNA VOLZ	EDR Digital Archive
	HEIDI MEFFERD	EDR Digital Archive
	HERNANDEZ FELICIA	EDR Digital Archive
	SAMUEL GIARDINA	EDR Digital Archive
	SANDRA KATO	EDR Digital Archive
	JOE BARTFAY	EDR Digital Archive
	BIHN NGUYEN	EDR Digital Archive
	MARY MILLER	EDR Digital Archive
	PATRICK MCDEVITT	EDR Digital Archive
	HOLLY MUELLER	EDR Digital Archive
	LESTER CARTER	EDR Digital Archive
	PINA CECCARELLI	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	MARYAM RASOOLIAN	EDR Digital Archive
	MOLLY GONZALES	EDR Digital Archive
	KATE DURDA	EDR Digital Archive
	KEVIN YANG	EDR Digital Archive
	ANTHONY PONTICELLO	EDR Digital Archive
	YUAN TIAN	EDR Digital Archive
	SAM FAHMIE	EDR Digital Archive
	ANDREW PETERSEN	EDR Digital Archive
	SHEILA ZWIESELE	EDR Digital Archive
	DYLAN ALLBEE	EDR Digital Archive
	ERIKA MERINO	EDR Digital Archive
	ZAC EATON	EDR Digital Archive
	REBECCA MLSSBB	EDR Digital Archive
	HUGO LOPEZ	EDR Digital Archive
	SHA TANG	EDR Digital Archive
	VANESSA QUINN	EDR Digital Archive
	JESSICA PROFATO	EDR Digital Archive
	RYAN RENE	EDR Digital Archive
	KIM HELMERS	EDR Digital Archive
	ERICA SMITH	EDR Digital Archive
	KORY JASPERSON	EDR Digital Archive
	MARY WILLIS	EDR Digital Archive
	TRACY HENDERSON	EDR Digital Archive
	KATIE REITER	EDR Digital Archive
	MEGHAN TOWNE	EDR Digital Archive
	MARYAM RAHMANI	EDR Digital Archive
	JESSICA GAGE	EDR Digital Archive
	ISAAC BROWN	EDR Digital Archive
	ROSALIE THIESSEN	EDR Digital Archive
	ELIZABETH LOPEZ	EDR Digital Archive
	SPEARE VIRGINIA	EDR Digital Archive
	JEANNIE DELAROSA	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	JIM MARTINO	EDR Digital Archive
	JEAN ANDERSON	EDR Digital Archive
	SHAWN GORDA	EDR Digital Archive
	ANDRE HALL	EDR Digital Archive
	VANESSA BAWROSKI	EDR Digital Archive
	SINEAD HAWKER	EDR Digital Archive
	JENN MISCIONE	EDR Digital Archive
	MICHAEL LIPPS	EDR Digital Archive
	LUIGI LEUNG	EDR Digital Archive
	KELLY KRAGENBRINK	EDR Digital Archive
	MICHAEL WACHOWIAK	EDR Digital Archive
	CATHERINE DIDONATO	EDR Digital Archive
	DAVID WAWRZYNIAK	EDR Digital Archive
	MARIA ILLIANO	EDR Digital Archive
	KASEY ONEILL	EDR Digital Archive
	MICHAEL OSTERMAN	EDR Digital Archive
	JASON METZLER	EDR Digital Archive
	RITTER HAGADORN	EDR Digital Archive
	GREG NOGLE	EDR Digital Archive
	PHD SHINDE	EDR Digital Archive
	DEVON THRUSH	EDR Digital Archive
	TESSA FRICKE	EDR Digital Archive
	HECTOR ESCOBEDO	EDR Digital Archive
	SINEAD HORGAN	EDR Digital Archive
	CHERYL STOKES	EDR Digital Archive
	LUCAS AGRICOLA	EDR Digital Archive
	DESIREE GONZALEZ	EDR Digital Archive
	MARGARET KIVINSKI	EDR Digital Archive
	TIFFANY AU	EDR Digital Archive
	AMBER WILLIAMS-MORALES	EDR Digital Archive
	ASHLEY GRIFFIN	EDR Digital Archive
	KIM STANDFEST	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	EMILY GREENE	EDR Digital Archive
	JAMES PH	EDR Digital Archive
	JESSICA GRZYBOWSKI	EDR Digital Archive
	KERRY BARRETT	EDR Digital Archive
	JOHN COPENHAVER	EDR Digital Archive
	WEN LIANG	EDR Digital Archive
	DAJUN QIAN	EDR Digital Archive
	MORGAN DUBOIS	EDR Digital Archive
	VAYEDEN BLAKE	EDR Digital Archive
	KAREN HENRY	EDR Digital Archive
	TIM KELLEHER	EDR Digital Archive
	ROLINA DESAI	EDR Digital Archive
	JOHN DIODATO	EDR Digital Archive
	CHRISTINA DORRIS	EDR Digital Archive
	ROBERT HUETHER	EDR Digital Archive
	YENZER CHRISTINE	EDR Digital Archive
	JORDAN TRIVISON	EDR Digital Archive
	BEN HIGGS	EDR Digital Archive
	YING LI	EDR Digital Archive
	LAURA PANOS	EDR Digital Archive
	NICOLE DUPUIS	EDR Digital Archive
	KATIE EASTON	EDR Digital Archive
	HARMONY HARRIS	EDR Digital Archive
	MELISSA PRONOLD	EDR Digital Archive
	FERNANDO VALDEZ	EDR Digital Archive
	PAUL DORSEY	EDR Digital Archive
	JAMIE NOBLES	EDR Digital Archive
	MELANIE RUIZ	EDR Digital Archive
	VICTORIA COSTELLO	EDR Digital Archive
	ROSALINDA MENA	EDR Digital Archive
	MAX CABAJ	EDR Digital Archive
	JEHAN HARRELL	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	CHRISTIAN GUND	EDR Digital Archive
	EMILY HAMMOND	EDR Digital Archive
	HARSHIL PATEL	EDR Digital Archive
	NANCY KRAMER	EDR Digital Archive
	CODY BUHLER	EDR Digital Archive
	MADELINE HANSEN	EDR Digital Archive
	TREGG SPOLAR	EDR Digital Archive
	KIRSTEN BLANCO	EDR Digital Archive
	MARY PRITZLAFF	EDR Digital Archive
	TRACY SAJADY	EDR Digital Archive
	HEIDI FELLOWS	EDR Digital Archive
	MARC JEFFERSON	EDR Digital Archive
	KELLY VALENZUELA	EDR Digital Archive
	CHRISTY MOORE	EDR Digital Archive
	JEANINE TALAMO	EDR Digital Archive
	MONICA GRIMALDI	EDR Digital Archive
	LUIS PEREZ	EDR Digital Archive
	JACK FORTHUN	EDR Digital Archive
	PAUL REILLY	EDR Digital Archive
	SUSAN TOOMEY	EDR Digital Archive
	STACY VECCHIO	EDR Digital Archive
	WILLIE FRANCISCO	EDR Digital Archive
	JULIA THAI	EDR Digital Archive
	GEOFF ALDERETE	EDR Digital Archive
	JENNA GUILTINAN	EDR Digital Archive
	TEHILA NESS	EDR Digital Archive
	SAM MARTIN	EDR Digital Archive
	FRANK PEEK	EDR Digital Archive
	SARAH COMPSON	EDR Digital Archive
	SUSAN BICKNER	EDR Digital Archive
	MICHAEL ERICKSON	EDR Digital Archive
	GINA JOHNS-MCNEIL	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	LISA NOVAKOFF	EDR Digital Archive
	VICTOR GATUS	EDR Digital Archive
	KATHRYN MACDONALD	EDR Digital Archive
	KEVIN WAGNER	EDR Digital Archive
	TRIPTI PAUDYAL	EDR Digital Archive
	PAUL RUSCH	EDR Digital Archive
	SCOTT DAVIDSON	EDR Digital Archive
	JORDAN DRUMEL	EDR Digital Archive
	KURT BRABENDER	EDR Digital Archive
	CHAD MARCINIAK	EDR Digital Archive
	JOANNA GILLHOUSE	EDR Digital Archive
	LUCIA GUIDUGLI	EDR Digital Archive
	ALIZABETH BERG	EDR Digital Archive
	FRANK VANDENHOUTEN	EDR Digital Archive
	HAYLEY RENWICK	EDR Digital Archive
	MACHALE ROBERT	EDR Digital Archive
	SOURAT DARABI	EDR Digital Archive
	AUSTIN CARTER	EDR Digital Archive
	SHA PHD	EDR Digital Archive
	KATHRYN CARR	EDR Digital Archive
	KIRSTEN KELLY	EDR Digital Archive
	DAN KOSTECKI	EDR Digital Archive
	MARIO AVINA	EDR Digital Archive
	AARON VEIT	EDR Digital Archive
	TAYLOR CHRISPELL	EDR Digital Archive
	KATHRYN CARLSON	EDR Digital Archive
	AMIE YOON	EDR Digital Archive
	CATHERINE SUH	EDR Digital Archive
	MICHAEL SCOVITCH	EDR Digital Archive
	TEDDY NAVARRO	EDR Digital Archive
	CHRISTOPHER LOWRY	EDR Digital Archive
	JORDAN MARSHALL	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	CASSIE KURODA	EDR Digital Archive
	SUH CATHERINE	EDR Digital Archive
	FERNANDO ALONSO	EDR Digital Archive
	KRISTINA WHALEY	EDR Digital Archive
	BRITTANY CHARNLEY	EDR Digital Archive
	MICHAEL OSBORNE	EDR Digital Archive
	PHD SONG	EDR Digital Archive
	SEAN ORFILA	EDR Digital Archive
	BRIAN RAMIREZ ENRIQUEZ	EDR Digital Archive
	JOSHUA BRUNELL	EDR Digital Archive
	ELENA ROSENBERG	EDR Digital Archive
	RASHMI MSBME	EDR Digital Archive
	RICHARD SREY	EDR Digital Archive
	DONG XU	EDR Digital Archive
	SHANE MILLER	EDR Digital Archive
	SHELA LEE	EDR Digital Archive
	KELLY FULK	EDR Digital Archive
	ALEJANDRA MENDOZA	EDR Digital Archive
	BENJAMIN SMYTH	EDR Digital Archive
	JESSICA NOVAK	EDR Digital Archive
	JEFFREY NORCIA	EDR Digital Archive
	AUSTIN WELSHIEMER	EDR Digital Archive
	PATRICK REINEKE	EDR Digital Archive
	CHAR MANGRELLO	EDR Digital Archive
	SITAO WU	EDR Digital Archive
	RACHEL TOEPFER	EDR Digital Archive
	DIVYA SAIN	EDR Digital Archive
	NEGAR GHAHRAMANI	EDR Digital Archive
	DONNA NICKENS	EDR Digital Archive
	ALLANNAH COYLE	EDR Digital Archive
	CAROLINE DOUGHERTY	EDR Digital Archive
	TIANA PA-C	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	JASON CWCMS	EDR Digital Archive
	MADELINE GRAF	EDR Digital Archive
	KAYANA SPOOR	EDR Digital Archive
	MEAGHAN OCONNOR	EDR Digital Archive
	DIMA KHECHEN	EDR Digital Archive
	MICHAEL LAVAVESHKUL	EDR Digital Archive
	REBECCA GRAZIANO	EDR Digital Archive
	MARK KONOPKA	EDR Digital Archive
	JORGENSON BUENO	EDR Digital Archive
	JEFFREY TSOU	EDR Digital Archive
	MIN-SUN PARK	EDR Digital Archive
	MELANIE STUDZINSKI	EDR Digital Archive
	SAMANTHA KING	EDR Digital Archive
	HALEY PETERSON	EDR Digital Archive
	USSWINNA ITTIMEYKIN	EDR Digital Archive
	MARIA SANTA	EDR Digital Archive
	BETH KUHN	EDR Digital Archive
	AMANDA GROGGEL	EDR Digital Archive
	JANET CHIEN	EDR Digital Archive
	JESSICA RIOS	EDR Digital Archive
	JASMINE SATH	EDR Digital Archive
	NADDER FAWAZ	EDR Digital Archive
	YURIY SHEVCHENKO	EDR Digital Archive
	JEFFREY GAHAN	EDR Digital Archive
	ERIC TUCKER	EDR Digital Archive
	JARED EIFERT	EDR Digital Archive
	RASHMI MODY	EDR Digital Archive
	JOHN CARSON	EDR Digital Archive
	DANIEL HARRINGTON	EDR Digital Archive
	KELLY HAGMAN	EDR Digital Archive
	RJ KING	EDR Digital Archive
	ANDREW SHAW	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	AMBER PRYZBYLSKI	EDR Digital Archive
	JESSICA PATTERSON	EDR Digital Archive
	SABITA SANKAR	EDR Digital Archive
	GALEN WOLLENBERG	EDR Digital Archive
	BEAU GRAY	EDR Digital Archive
	WYCKOFF GARTH	EDR Digital Archive
	ADRIANA TAMAYO	EDR Digital Archive
	ANTONIO WANG	EDR Digital Archive
	JENNIFER HUANG	EDR Digital Archive
	MEGAN LANDSVERK	EDR Digital Archive
	JESSICA NGUYEN	EDR Digital Archive
	MICHELE FENNESSY	EDR Digital Archive
	SIRAK YOSIEF	EDR Digital Archive
	BRIAN LAMB	EDR Digital Archive
	SYLVIA CHEN	EDR Digital Archive
	LAUREN DANIELS	EDR Digital Archive
	MARJAN MAJDI	EDR Digital Archive
	MIKE ATCHISON	EDR Digital Archive
	MOREAU BRIAN	EDR Digital Archive
	TORYE COOKE	EDR Digital Archive
	EUNICE MORSE	EDR Digital Archive
	NAVANJOT BATTH	EDR Digital Archive
	AMY WECHSLER	EDR Digital Archive
	VIRGINIA CHAN	EDR Digital Archive
	JASON ARNOLD	EDR Digital Archive
	CAMERON MROSKE	EDR Digital Archive
	COLLEEN MCCULLOUGH-GARCIA	EDR Digital Archive
	BLAIR WEISS	EDR Digital Archive
	MARIA SEGOBIANO	EDR Digital Archive
	FANN BRANDON	EDR Digital Archive
	PHIL SWIFT	EDR Digital Archive
	MICHELLE JACKSON	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	ERNIE CRUZ	EDR Digital Archive
	MANUEL JAQUEZ	EDR Digital Archive
	SWATI MISHRA	EDR Digital Archive
	DAN LINDSAY	EDR Digital Archive
	KRISTI MURPHY	EDR Digital Archive
	AARON SCHMIDT	EDR Digital Archive
	MONICA LAO	EDR Digital Archive
	SAMUEL JEFFERS	EDR Digital Archive
	YIVANNA NUNEZ	EDR Digital Archive
	CARLOS PEREZ	EDR Digital Archive
	WON RHEE	EDR Digital Archive
	SARAH CAMPIAN	EDR Digital Archive
	KRISTOPHER BEAN	EDR Digital Archive
	CASSIE UNG	EDR Digital Archive
	SAMIN SAJAN	EDR Digital Archive
	BESS WAYBURN	EDR Digital Archive
	HELEN FARD	EDR Digital Archive
	ALICIA GORT	EDR Digital Archive
	EUGENE MISCIONE	EDR Digital Archive
	JENNI BRAUGHT	EDR Digital Archive
	PIERRE SAMSON	EDR Digital Archive
	MARCY RICHARDSON	EDR Digital Archive
	BLAIR CONNER	EDR Digital Archive
	JIA HOO	EDR Digital Archive
	DIMA EL-KHECHEN	EDR Digital Archive
	SEBASTIEN MARCQ	EDR Digital Archive
	ELLIN WEST	EDR Digital Archive
	KRYSTA AYERS	EDR Digital Archive
	LAN QIN	EDR Digital Archive
	STEVE SWANSON	EDR Digital Archive
	MADDY SUMNER	EDR Digital Archive
	ISHITA VYAS	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	PIA SUMMEROUR	EDR Digital Archive
	PARKER SANKEY	EDR Digital Archive
	TARA ABEND	EDR Digital Archive
	RHONDA PH	EDR Digital Archive
	SELVI PALANIAPPAN	EDR Digital Archive
	PAUL BALALIS	EDR Digital Archive
	MATTHEW MANDESE	EDR Digital Archive
	JESSICA MIESCHEDER	EDR Digital Archive
	HEATHER ELLIS	EDR Digital Archive
	JING WANG	EDR Digital Archive
	EMMA WATTS	EDR Digital Archive
	MICHELLE LEBO	EDR Digital Archive
	NICOLE BERGGREN	EDR Digital Archive
	KEVIN LAWSON	EDR Digital Archive
	NEENA DASS	EDR Digital Archive
	AMANDA ALTMAN	EDR Digital Archive
	CHRISTINA ALAMILLO	EDR Digital Archive
	MICHELLE SHRADER	EDR Digital Archive
	MONICA MULLEN	EDR Digital Archive
	IT OPERATIONS	EDR Digital Archive
	JINA HAGEN	EDR Digital Archive
	LAURA TEIGISER	EDR Digital Archive
	BRIANNA KAMEN	EDR Digital Archive
	STEPHANIE GUTIERREZ	EDR Digital Archive
	PETER KOURES	EDR Digital Archive
	DYLAN BOROIAN	EDR Digital Archive
	JACQUELINE TALPASH	EDR Digital Archive
	LINDSEY WALTMAN	EDR Digital Archive
	ANDREW HALING	EDR Digital Archive
	SHARON GINGER	EDR Digital Archive
	MIN PARK	EDR Digital Archive
	ASHLEY BODENBENDER	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	LAURA MISCIONE	EDR Digital Archive
	JESSE MATLOCK	EDR Digital Archive
	MARISSA CASAR	EDR Digital Archive
	JANET MESCIONE	EDR Digital Archive
	HEIDI SANDERSON	EDR Digital Archive
	CATHERINE POTENTE	EDR Digital Archive
	BRENT BULLARD	EDR Digital Archive
	LINDSEY SIZEMORE	EDR Digital Archive
	CHRIS LOWRY	EDR Digital Archive
	SHANE SCHISSLER	EDR Digital Archive
	AARON CAMPBELL	EDR Digital Archive
	JOAN CASTILLO	EDR Digital Archive
	SCOT DREW	EDR Digital Archive
	MATTHEW CAL	EDR Digital Archive
	DAMON HADDER	EDR Digital Archive
	LESLIE VATH	EDR Digital Archive
	STEVEN MCCRAY	EDR Digital Archive
	KARINA VELASCO	EDR Digital Archive
	MARY MITCHELL	EDR Digital Archive
	CHRIS SANDS	EDR Digital Archive
	ANDREW LINDERMAN	EDR Digital Archive
	KIM BABBIDGE	EDR Digital Archive
	PIA BANERJI	EDR Digital Archive
	STEVEN BORRERO	EDR Digital Archive
	JESSICA BURGESS	EDR Digital Archive
	CAMARA CRENSHAW	EDR Digital Archive
	JADE TINKER	EDR Digital Archive
	CINDY KALEH	EDR Digital Archive
	BRITTANY OSULLIVAN	EDR Digital Archive
	DAVID SCOTTI	EDR Digital Archive
	SHINDE DEEPALI	EDR Digital Archive
	DIANA TUMAN	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	DAISY TAPIA	EDR Digital Archive
	BRITTANI OATIS	EDR Digital Archive
	MBASCP SIRAK	EDR Digital Archive
	JACOB WALTZ	EDR Digital Archive
	MARY BLACK	EDR Digital Archive
	OMAR ALWATTAR	EDR Digital Archive
	LINH DANG	EDR Digital Archive
	TODD MORGAN	EDR Digital Archive
	AMBER WILLIAMS	EDR Digital Archive
	STEPHANY CONNOR	EDR Digital Archive
	MARCUS HAJJ	EDR Digital Archive
	AARON ELLIOT	EDR Digital Archive
	CARINE KANDALAFT	EDR Digital Archive
	PAUL SIEWIERSKI	EDR Digital Archive
	IVO IVANOV	EDR Digital Archive
	SHEETAL KHANNA	EDR Digital Archive
	JULIE COOK	EDR Digital Archive
	ROBERT GUIGLEY	EDR Digital Archive
	EUGENE GARAN	EDR Digital Archive
	JUNAID HASHIM	EDR Digital Archive
	SAMANTHA CHOU	EDR Digital Archive
	MICAH CGMBS	EDR Digital Archive
	GRASSO JAMES	EDR Digital Archive
	BRANDON LINTON	EDR Digital Archive
	RAQUEL ROSS	EDR Digital Archive
	SARA WILLETT	EDR Digital Archive
	RANDY MILLS	EDR Digital Archive
	KYLE ALLEN	EDR Digital Archive
	MELISSA SAMONS	EDR Digital Archive
	ALISON PITALE	EDR Digital Archive
	GARY CLACK	EDR Digital Archive
	ERIKA ORTEGA	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	RANA KOLTA	EDR Digital Archive
	JIVARAJ PIPARIYA	EDR Digital Archive
	KRISTY HAYNES	EDR Digital Archive
	HEATHER STICKNEY	EDR Digital Archive
	DONNA TRIESCHMANN	EDR Digital Archive
	MARKUS MOVRICH	EDR Digital Archive
	SARAH FRANKLIN	EDR Digital Archive
	DAVID WILKINS	EDR Digital Archive
	MARK MISCIONE	EDR Digital Archive
	CONNOR HARTMAN	EDR Digital Archive
	TAMERON HARVELL	EDR Digital Archive
	LINDSEY BARNARD	EDR Digital Archive
	GINGER CHISHOLM	EDR Digital Archive
	JAKHAN NGUYEN	EDR Digital Archive
	ISABELLE RENNOCKL	EDR Digital Archive
	JEANNINE ST JOHN	EDR Digital Archive
	JAMIE COOPER	EDR Digital Archive
	JOSHUA GORMAN	EDR Digital Archive
	LAUREN COBERN	EDR Digital Archive
	CAROLE ODDOUX	EDR Digital Archive
	LUKE ADEA	EDR Digital Archive
	NAHID MOKNAT	EDR Digital Archive
	SERGIO ALVARADO	EDR Digital Archive
	KRISTINE GUERRERO	EDR Digital Archive
	JULIE STEFKA	EDR Digital Archive
	AJ STUENKEL	EDR Digital Archive
	HALE GEOFFREY	EDR Digital Archive
	BRIAN FLICK	EDR Digital Archive
	REBECCA MLSASCPSBB	EDR Digital Archive
	JASON WOMMACK	EDR Digital Archive
	JESSE HUNTER	EDR Digital Archive
	ANTHONY HARRIS	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	KELLY MCGOLDRICK	EDR Digital Archive
	MARISSA TRACY	EDR Digital Archive
	YVETTE ROSE VILLAFUERTE	EDR Digital Archive
	MARK SUMNERS	EDR Digital Archive
	GENE MISCIONE	EDR Digital Archive
	MATTHEW TAGLIAFERRO	EDR Digital Archive
	DENA GOLDBERG	EDR Digital Archive
	MIMI WAN	EDR Digital Archive
	HEATHER ZIMMERMANN	EDR Digital Archive
	MELISSA WARDEN	EDR Digital Archive
	JACOB ACTKINSON	EDR Digital Archive
	COURTNEY GROSVENOR	EDR Digital Archive
	JAKE RHODARMER	EDR Digital Archive
	NINA SCHAUER	EDR Digital Archive
	CHARLES YI	EDR Digital Archive
	KAREN DAVE	EDR Digital Archive
	MATTHEW DE LA CAL	EDR Digital Archive
	BERNARD HERRMAN	EDR Digital Archive
	CATHLEEN PEREZ	EDR Digital Archive
	AMBRY GENETICS	EDR Digital Archive
	JON EARHART	EDR Digital Archive
	CHRIS YENZER	EDR Digital Archive
	PAMELA DIMSHO	EDR Digital Archive
	KYUNG CHO	EDR Digital Archive
	JAMIE LHEUREUX	EDR Digital Archive
	DENA FREEMAN	EDR Digital Archive
	REGINA ROEDER	EDR Digital Archive
	KRYSTLE LOWERISON	EDR Digital Archive
	SOROUSH SAMADIAN	EDR Digital Archive
	BRITTANY DOUGALL	EDR Digital Archive
	GISELLE GONZALEZ	EDR Digital Archive
	BRYAN MAK	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	MUAEEN OBADI	EDR Digital Archive
	DESIREE THOMPSON	EDR Digital Archive
	COLLIN LYNCH	EDR Digital Archive
	ARIVUDAINAMBI RAMALINGAM	EDR Digital Archive
	SHELLY GALASINSKI	EDR Digital Archive
	ROBERT MACHALE	EDR Digital Archive
	VRUTI MEHTA	EDR Digital Archive
	AREE RAISDANA	EDR Digital Archive
	HECTOR RODRIGUEZ-ASBUN	EDR Digital Archive
	GERALD BAUER	EDR Digital Archive
	CHRIS CHOCK	EDR Digital Archive
	THOMAS LOWERRE	EDR Digital Archive
	CAM MANAPSAL	EDR Digital Archive
	MICHAEL MOE	EDR Digital Archive
	RISHONA LAVY	EDR Digital Archive
	BOBA POPOVIC	EDR Digital Archive
	KYLE VEENIS	EDR Digital Archive
	DOSS JIMMY	EDR Digital Archive
	EVELYN REPUELO	EDR Digital Archive
	VIRGINIA ESCAMILLA	EDR Digital Archive
	KATHARINE SAETANG	EDR Digital Archive
	SUSANNA VICTOR	EDR Digital Archive
	CRISTINA VEGA	EDR Digital Archive
	TRICIA ZION	EDR Digital Archive
	BRIAN ENRIQUEZ	EDR Digital Archive
	GIANA STANIGAR	EDR Digital Archive
	KALINA STEFANOV	EDR Digital Archive
	ANDY CASTRO	EDR Digital Archive
	JONATHON YU	EDR Digital Archive
	KATE ZWICKL	EDR Digital Archive
	MICHAL PROCHAZKA	EDR Digital Archive
	THOMAS GNIELINSKI	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	MARI ROSSI	EDR Digital Archive
	RYNE STOVER	EDR Digital Archive
	ADAM CHAMBERLIN	EDR Digital Archive
	BRIAN GUERIN	EDR Digital Archive
	LERNNI JUCO	EDR Digital Archive
	SAMANTHA KAPHEIM-SCANTLEN	EDR Digital Archive
	KATE KREMPELY	EDR Digital Archive
	MARILYN TSANG	EDR Digital Archive
	ZAHRA SADEGHI	EDR Digital Archive
	AMAL YUSSUF	EDR Digital Archive
	SHERRY DADGAR	EDR Digital Archive
	LAURA SMITH	EDR Digital Archive
	ALCARAZ WENDY	EDR Digital Archive
	MELISSA TRUELSON	EDR Digital Archive
	RASHMI SHAH-MODY	EDR Digital Archive
	RYAN PHILLIPS	EDR Digital Archive
	SARA SEIDLER	EDR Digital Archive
	KELLY CHANTAL	EDR Digital Archive
	NEENA DAVIS	EDR Digital Archive
	JAMES HOLLOWAY	EDR Digital Archive
	TAYLOR MURRAY	EDR Digital Archive
	DAVID PFEIFER	EDR Digital Archive
	BRODRIC CORMIER	EDR Digital Archive
	JAQUELINE ARROYO	EDR Digital Archive
	COLLEEN GARCIA	EDR Digital Archive
	MARGARET JONES	EDR Digital Archive
	BROOKE MCLAUGHLIN	EDR Digital Archive
	SEONG CHA	EDR Digital Archive
	EMILY DALTON	EDR Digital Archive
	BUCA DEBEPO	EDR Digital Archive
	THOMAS COPENHAVER	EDR Digital Archive
	DIANA SANCHEZ	EDR Digital Archive

Year	Uses	Source
2020	ANDREW LIN	EDR Digital Archive
	SHANIECE WOODS	EDR Digital Archive
	CAMARA MBA	EDR Digital Archive
	BASHA WEERASURIYA	EDR Digital Archive
	MADI BRAWER	EDR Digital Archive
	CATHERINE QUINDIPAN	EDR Digital Archive
	GLADYS VERDUZCO	EDR Digital Archive
	DAVID SALVADOR	EDR Digital Archive
2014	AMBRY GENETICS CORPORATION	Cole Information
	AMBRY GENETICS	Cole Information
2010	CENTON ELECTRONICS INC	Cole Information
	GREENCO SERVICES INC	Cole Information
2005	CENTON ELECTRONICS INC	Cole Information
	ARBONNE INTL	Cole Information
2000	E FITZGIBBON	Cole Information
1995	ARBONNE INTERNATIONAL INC	Cole Information
1992	PROGRAMMING	Pacific Bell
	TECHNOLOGY	Pacific Bell
	KAMINARI	Pacific Bell
	NORD LETH ASSOCIATES	Pacific Bell
	KAMINARI	Cole Information
	PROGRAMMING TECH	Cole Information

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Year	Uses	Source
2020	NICHOLAS LABORATORIES LLC	EDR Digital Archive
	JOCKIMO INC	EDR Digital Archive
2014	AZTEC COMPONENTS	Cole Information
2005	SQUARE ONE BRANDS INC	Cole Information
2000	DANA WATSON	Cole Information
1995	DEL MAR MACHINERY INC	Cole Information
	HUNTER GRAPHICS INC	Cole Information
1992	HUNTER GRAPHICS INC	Pacific Bell

Year	Uses	Source
1992	HUNTER GRAPHICS INC	Pacific Bell
	B LANDMAN CO	Pacific Bell
	LANDMAN CO	Cole Information
	HUNTER GRAPHICS INC	Cole Information

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Year	Uses	Source
2020	VERTEX LINEAR	EDR Digital Archive
	MOTION SOLUTIONS	EDR Digital Archive
	MASOOD ASGARIFAR	EDR Digital Archive
	MICHAEL KADLEC	EDR Digital Archive
	LULUBELLE PAGADOR	EDR Digital Archive
	JANESSA CROSTHWAITE	EDR Digital Archive
	CATRIONA LUND	EDR Digital Archive
	DANIEL BICKERSTAFF	EDR Digital Archive
	BOB GIBBS	EDR Digital Archive
	KIRK STROBEL	EDR Digital Archive
	MIKE TOMIN	EDR Digital Archive
	PETE MATULICH	EDR Digital Archive
	GRIFFIN KING	EDR Digital Archive
	TOMMY RAYE	EDR Digital Archive
	PETER HOFFMAN	EDR Digital Archive
	CASEY COVEY	EDR Digital Archive
	JOE JURIC	EDR Digital Archive
	ROSE DILAN	EDR Digital Archive
	CHRIS OLSEN	EDR Digital Archive
	SHAWN HAKIM	EDR Digital Archive
	TRACY SUMMERS	EDR Digital Archive
	JIM SINGLETARY	EDR Digital Archive
	KIM ABEL	EDR Digital Archive
	SAMANTHA CELANI	EDR Digital Archive
	LAWRENCE FLORESCA	EDR Digital Archive
	FRANCINE JUTEAU	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	SIDDHANTH DHUME	EDR Digital Archive
	GREG FORD	EDR Digital Archive
	DAVID BRADLEY	EDR Digital Archive
	KEN SMITH	EDR Digital Archive
	SCOTT OCHS	EDR Digital Archive
	FRANK PAULSEN	EDR Digital Archive
	CASSY JOHNSON	EDR Digital Archive
	SYNDEE DUTTON	EDR Digital Archive
	RODRIGO ALDACO	EDR Digital Archive
	GERRIT HARKNESS	EDR Digital Archive
	BLAKE NELSON	EDR Digital Archive
	HAROLD KATZ	EDR Digital Archive
	NUNYA STEWART	EDR Digital Archive
	JACOB GINDI	EDR Digital Archive
	MARK SHAFFER	EDR Digital Archive
	BRIAN LEE	EDR Digital Archive
	ELIZABETH GORDON	EDR Digital Archive
	HENRY KIM	EDR Digital Archive
	AUDRA COLE	EDR Digital Archive
	BOB UHLER	EDR Digital Archive
	HENRY MARTINEZ	EDR Digital Archive
	KURT KLEIFGEN	EDR Digital Archive
	MIKE BERGUM	EDR Digital Archive
	MARY BROOKING	EDR Digital Archive
	MARK HORNBECK	EDR Digital Archive
	FRANCIS PHAM	EDR Digital Archive
	DAVE SHAW	EDR Digital Archive
	SCOTT DEPENBROK	EDR Digital Archive
	ERIC HORNE	EDR Digital Archive
	JOE UHRIG	EDR Digital Archive
	BILL LACKEY	EDR Digital Archive
	BILL SAUNDERS	EDR Digital Archive

Year	Uses	Source
2020	LAN TRAN	EDR Digital Archive
	DARLENE LUCERO	EDR Digital Archive
	MIKE KIBORT	EDR Digital Archive
	PANDA CHAND	EDR Digital Archive
	VINCENT CIPOLLA	EDR Digital Archive
	NIKA DAROUI	EDR Digital Archive
	SANDY WALKER	EDR Digital Archive
	DIANA FLEENOR	EDR Digital Archive
	GREG PEREZ	EDR Digital Archive
	BANG PHAM	EDR Digital Archive
	ALEX POLO	EDR Digital Archive
	DEBBIE NEWMAN	EDR Digital Archive
	WALLY LOGAN	EDR Digital Archive
	RICH RAU	EDR Digital Archive
	SEBASTIAN DELGADO	EDR Digital Archive
2014	BEARING ENGINEERS INC	Cole Information
2010	BEARING ENGINEERS INC	Cole Information
2005	BEARING ENGINEERS INC	Cole Information
1995	BEARING ENGINEERS INC	Cole Information
1992	BEARING ENGINEERS INC	Pacific Bell
	BEARING ENGINEERS	Cole Information

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Year	Uses	Source
2020	CLEAR SCREENING INC	EDR Digital Archive
	GLOBAL GENES	EDR Digital Archive
	RARE-X	EDR Digital Archive
	DEVON PFEIL	EDR Digital Archive
	CINDY LUX-REID	EDR Digital Archive
	TRAVIS VONBARTHELD	EDR Digital Archive
	CHAD SPAIDE	EDR Digital Archive
	NICOLE GILCHRIST	EDR Digital Archive
	SHERYL ZUNIGA	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	JAYMIE RODEMS	EDR Digital Archive
	MAURINA SOLIS	EDR Digital Archive
	STEPHANIE FISCHER	EDR Digital Archive
	ILANA JACQUELINE	EDR Digital Archive
	LAURA BORRUSO	EDR Digital Archive
	KRISTIN SOTO	EDR Digital Archive
	MICHAEL COLE	EDR Digital Archive
	MEREDITH CAGLE	EDR Digital Archive
	PAUL OLEA	EDR Digital Archive
	TRAVIS VON	EDR Digital Archive
	SULLY MISKINYAR	EDR Digital Archive
	MOLLIE MCLAUGHLIN	EDR Digital Archive
	NICOLE BOICE	EDR Digital Archive
	DENISE MANRIQUEZ	EDR Digital Archive
	DAVID STRANGE	EDR Digital Archive
	CHERYL ZUNIGA	EDR Digital Archive
2014	BENEFIT SOURCE INSURANCE	Cole Information
	BENEFITSOURCE	Cole Information
	CONSUMER TERMITE CONTROL INC	Cole Information
2010	SOLE SOURCE TECHNOLOGY LLC	Cole Information
	ARMA ASSET MANAGEMENT	Cole Information
	HAGEMEISTER	Cole Information
	CONSUMER TERMITE CONTROL INC	Cole Information
	KLEAR SCREENING INC	Cole Information
	CLEAR SCREENING INC	Cole Information
	HANSCHE TY	Cole Information
2005	J T M TECHNOLOGY INC	Cole Information
	TRADER PUBLISHING	Cole Information
	SYNERGY ELECTRONICS	Cole Information
	SOURCE 4 ELECTRONICS	Cole Information
	CONSUMER TERMITE CONTROL INC	Cole Information
	IBIZLINK INC	Cole Information

Year	Uses	Source
2005	NET MICRO TECH	Cole Information
2000	LEO LOPAS	Cole Information
1995	BUILDERS SHOWCASE INTERIORS	Cole Information
	CONSUMER TERMITE CONTROL INC	Cole Information
1992	BEARING ENGINEERS INC	Pacific Bell
	100 BUILDERS SHOWCASE	Pacific Bell
	INTERIORS	Pacific Bell
	120 CONSUMER TERMITE	Pacific Bell
	CONTROL INC	Pacific Bell
	130 MATCHLESS GIFTS	Pacific Bell
	DISTRIBUTORS	Pacific Bell
	PRODUCTS INC	Pacific Bell
	CONSMR TRMT CONTROL	Cole Information
	BUILDERS SHOWCASE	Cole Information
	FUTURE VIDEO PRDCTS	Cole Information

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Year	Uses	Source
2020	WAYMON GOCH	EDR Digital Archive
2014	S & K TOWING INC	Cole Information
	SNK TOWING	Cole Information
	CHURCH & DWIGHT CO INC	Cole Information
2005	INTEGRAF CORP	Cole Information
1995	INTEGRAF	Cole Information
1992	INTEGRAF	Pacific Bell
	INTEGRAF	Cole Information

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Year	Uses	Source
2020	K L MADDUX INC	EDR Digital Archive
	HADLEY BRETT G DO	EDR Digital Archive
	ID GEAR INC	EDR Digital Archive
	PARA TECH COATING INC	EDR Digital Archive
	PELTEK INC	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	METAL IMPROVEMENT CO LLC	EDR Digital Archive
	SCOTT VANDEWEGHE	EDR Digital Archive
	ROBERT DEACON	EDR Digital Archive
	ALEX NAVARRO	EDR Digital Archive
	TIFFANY BROOKHART	EDR Digital Archive
	TOM WALKER	EDR Digital Archive
	JENNIFER PYLE	EDR Digital Archive
	ERIKA PARTIDA	EDR Digital Archive
	PAUL STEWART	EDR Digital Archive
	TIM TEFFETELLER	EDR Digital Archive
	TIM GROOM	EDR Digital Archive
	CINDY TOLUAO	EDR Digital Archive
	KEN WATKINS	EDR Digital Archive
	MONICA MARTINEZ	EDR Digital Archive
	JOE BENKO	EDR Digital Archive
2014	ID GEAR INC	Cole Information
	NICOLAI & NUTH	Cole Information
	PARA TECH COATING INC	Cole Information
2010	PELTEK INC	Cole Information
	J & P ELECTRIC INC	Cole Information
	NUTH & NICOLAI	Cole Information
	I D GEAR INC	Cole Information
	DANBERG DEVELOPMENT INC	Cole Information
	PARA TECH COATING INC	Cole Information
	ONTI CONSTRUCTION CO	Cole Information
	RATESOURCE	Cole Information
2005	ID GEAR INC	Cole Information
	NICOLAI & NUTH DENTAL LABS	Cole Information
	J & P ELECTRIC INC	Cole Information
	OLINDA STORAGE LLC	Cole Information
	PICTURE PERFECT LIGHTING & DESIGN	Cole Information
	FIRST NAMES FIRST	Cole Information

Year	Uses	Source
2005	AUSTRAL ENGINEERING PARTNER	Cole Information
	PELTEK INC	Cole Information
1995	IMPACT SOUTHERN CALIF INC	Cole Information
	FLETCHER ANDRUS DEVELOPMENT	Cole Information
	CHIPCO WEST	Cole Information
	NUTH & NICOLAI	Cole Information
	PARA TECH COATING CO	Cole Information
1992	INTEGRAF	Pacific Bell
	AI PARA TECH COATING CO	Pacific Bell
	A 2 NUTH & NICOLAI	Pacific Bell
	82 FLETCHER ANDRUS	Pacific Bell
	DEVELOPMENT CORP	Pacific Bell
	B 2 IMPACT SOUTHERN	Pacific Bell
	CALIF INC	Pacific Bell
	PELTEK	Cole Information
	FLETCHER A DEVLP	Cole Information
	IMPACT SOUTHERN CA	Cole Information
	NUTH&NICOLAI	Cole Information
	PARA TECH COATING	Cole Information

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Year	Uses	Source
2020	PSA REAL ESTATE LLC	EDR Digital Archive
	TRIBE ACE LLC	EDR Digital Archive
	SURVIVALGEARSHOP.COM	EDR Digital Archive
	MAC FLOORING INC	EDR Digital Archive
	GRIFFCON INC	EDR Digital Archive
	JORDANA BERZANSKY	EDR Digital Archive
	JOSH DENTRY	EDR Digital Archive
	ANGELINA MARTINEZ	EDR Digital Archive
	CYNTHIA TESSIN	EDR Digital Archive
	CHRIS GRONLUND	EDR Digital Archive
	KELLE GRIFFITTS	EDR Digital Archive

Year	Uses	Source
2020	ABNER ZOOK	EDR Digital Archive
2014	GRIFFCON INCORP	Cole Information
2010	INTEGRATED REAL EST RESOURCES	Cole Information
	GRIFFCON INC	Cole Information
	LASTING INTERIORS	Cole Information
2005	LAGUNA OFFICE EQUIPMENT INC	Cole Information
	ALL STAR DUGOUT	Cole Information
	GRIFFCON INC	Cole Information
2000	SELMA WICKS	Cole Information
1995	LANSIS COOMUNICATIONS INC	Cole Information
	KOLL CO	Cole Information
1992	CALIF INC	Pacific Bell
	120 DEL MAR MACHINERY	Pacific Bell
	140 FIRST SOURCE	Pacific Bell
	INTERNATL	Pacific Bell
	150 LIGHTNING	Pacific Bell
	COMMUNICATIONS INC	Pacific Bell
	180 MILEHAM R WILLIAM LA	Pacific Bell
	TIMES DEALER	Pacific Bell
	MILEHAM R WILLIAM	Cole Information
	FIRST SOURCE INTL	Cole Information
	LIGHTNING CMNCTN	Cole Information
	DEL MAR MACHINERY	Cole Information
	LANSIS COMMNCTNS	Cole Information

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Year	Uses	Source
2020	SOUTH POINTE HOMEOWNERS ASSN	EDR Digital Archive
	PACIFICA HOTELS	EDR Digital Archive
	SEA BREEZE	EDR Digital Archive
	PRADERA NEIGHBORHOOD ASSN	EDR Digital Archive
2014	SEABREEZE MANAGEMENT COMPANY	Cole Information
	STEVEN DOZE	Cole Information

Year	Uses	Source
2010	NETBUY	Cole Information
	SEABREEZE MANAGEMENT	Cole Information
2005	SEABREEZE MANAGEMENT CO	Cole Information
	GLENWOOD VILLAGE COMMUNITY ASSOCIATI	Cole Information
	BELL COURT HILL ASSOCS	Cole Information
	STEVEN DOZE	Cole Information
1995	NETWORK SOFTWARE ASSOC INC	Cole Information
1992	NETWORK SOFTWARE	Pacific Bell
	ASSOC INC	Pacific Bell
	NETWORK SOFTWRE ASC	Cole Information

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Year	Uses	Source
2000	OCCUPANT UNKNOWN	Cole Information

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Year	Uses	Source
2020	STOR-IT SELF STORAGE	EDR Digital Archive
2014	STORITSELF STORAGE	Cole Information
2010	STORIT SELF STORAGE	Cole Information
2005	STOR IT SELF STORAGE	Cole Information
2000	L CREVISTON	Cole Information
1995	STOR IT SELF STORAGE	Cole Information
	MILLER, JAMES	Cole Information
1992	Miller James & Rachel	Pacific Bell
	STOR IT SELF STORAGE	Pacific Bell
	STOR IT SELF STRG	Cole Information
	MILLER, JAMES	Cole Information

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Year	Uses	Source
2020	KENNEDY PIPELINE CO	EDR Digital Archive
2014	KENNEDY PIPELINE COMPANY	Cole Information
2010	NATIONAL SAFETY COMPLIANCE INC	Cole Information

Year	Uses	Source
2005	NATIONAL SAFETY COMPLIANCE INC	Cole Information
	WATER SQUIRT INC	Cole Information
1995	KENNEDY PIPELINE CO	Cole Information
	NATIONAL SAFETY COMPLIANCE INC	Cole Information
1992	KENNEDY PIPELINE	Pacific Bell
	COMPANY	Pacific Bell
	NATL SAFETY COMPLIANCE	Pacific Bell
	KENNEDY PIPELINE CO	Cole Information
	NATL SAFETY CMPLNC	Cole Information

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Year	Uses	Source
2020	BALLET CONSERVATORY	EDR Digital Archive
	MATSMA CONSULTING & DEVMNT	EDR Digital Archive
	CSS CONSTRUCTION	EDR Digital Archive
	F L S ENTERPRISES	EDR Digital Archive
	LASTING INTERIORS	EDR Digital Archive
	ROBIN MICKLE	EDR Digital Archive
	JEANINE CORBETT	EDR Digital Archive
	JANE MATTY	EDR Digital Archive
	NAHAL SHETLAND	EDR Digital Archive
	MARISSA WENNERBERG	EDR Digital Archive
	STEPHANIE MENDOZA	EDR Digital Archive
	NANCY AYALA	EDR Digital Archive
	JULIE BINOWITZ	EDR Digital Archive
	DUANE VANHORN	EDR Digital Archive
	TORI KAUFMAN	EDR Digital Archive
	HELENE REYES	EDR Digital Archive
	KAILIN TOOMER	EDR Digital Archive
	JENNIFER KORNSWIET	EDR Digital Archive
	MEGAN REARDON	EDR Digital Archive
	JAMES PEARCE	EDR Digital Archive
2014	BALLET CONSERVATORY	Cole Information

Year	Uses	Source
2010	BALLET CONSERVATORY	Cole Information
2005	MISHIBA CORP OF CALIFORNIA	Cole Information
	BALLET CONSERVATORY	Cole Information
1995	ADVANTAGE MEMORY CORP	Cole Information
	COMPU DEAL CORP	Cole Information
	BALLET CONSERVATORY	Cole Information
	FARRELL & ASSOC	Cole Information
1992	FARRELL & ASSOCIATES	Pacific Bell
	FARRELL & ASSOCIATES	Pacific Bell
	100 BALLET	Pacific Bell
	CONSERVATORY THE	Pacific Bell
	160 ADVANTAGE MEMORY	Pacific Bell
	180 TONY FLOREZ	Pacific Bell
	PHOTOGRAPHY	Pacific Bell
	FARRELL LABELS	Cole Information
	BALLET CONSERVATORY	Cole Information
	TONY FLOREZ PHOTO	Cole Information

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Year	Uses	Source
2020	B & C MOVING	EDR Digital Archive
	U-HAUL NEIGHBORHOOD DEALER	EDR Digital Archive
2014	B&C MOVING	Cole Information
	B & C MOVING	Cole Information
	B & C MOVING INC	Cole Information
	BC MOVING	Cole Information
2010	B & C MOVING	Cole Information
	A B & C MOVING CO	Cole Information
2005	PUAL ARPIN / B & C MOVING INC	Cole Information
1995	B & C MOVING	Cole Information
1992	B &C MOVING INC	Pacific Bell
	B&C MOVING	Cole Information

FINDINGS

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Year	Uses	Source
2020	INVOY LLC	EDR Digital Archive
	NATIONAL TAEKWONDO ACADEMY	EDR Digital Archive
	ZACH SMITH	EDR Digital Archive
	AL KRAUZA	EDR Digital Archive
	AYMAN LUQMAN	EDR Digital Archive
	TIFFANY WENG	EDR Digital Archive
	LUBNA AHMAD	EDR Digital Archive
	SALMAN AHMAD	EDR Digital Archive
	RIZWAN AHMAD	EDR Digital Archive
2014	NATIONAL TAEKWONDO ACADEMY	Cole Information
	MAC FLOORING INC	Cole Information
	WAVETEC VISION SYSTEMS	Cole Information
2010	ADCALLS INC	Cole Information
	CREATIVE CONCEPT SOUND SLTNS	Cole Information
	NATIONAL TAE KWON DO ACADEMY	Cole Information
2005	NATIONAL TAEKWONDO ACADEMY	Cole Information
	ADCALLS INC	Cole Information
	AD SAVERS NETWORK	Cole Information
	NATIONAL TAE KWON DO ACADEMY	Cole Information
	OCCUPANT UNKNOWN	Cole Information
1992	CALVARY CHAPEL BOOK	Pacific Bell
	STORE	Pacific Bell
	CALVARY CHPL BK STR	Cole Information

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Year	Uses	Source
2020	JW MITCHELL CO LLC	EDR Digital Archive
	OLUKAI	EDR Digital Archive
	CARRINGTON MORTGAGE	EDR Digital Archive
2014	OLUKAI	Cole Information
	KENSINGTON ELECTRONICS INC	Cole Information
2010	OLUKAI	Cole Information

Year	Uses	Source
2010	KENSINGTON ELECTRONICS INC	Cole Information
	IMPACT VIDEO	Cole Information
2005	COAST SPIRIT ALL	Cole Information
	IMPACT VIDEO DISTRIBUTING	Cole Information
	KENSINGTON ELECTRONICS INC	Cole Information
	LOVE 2 CHEER	Cole Information
	ELECTRONIC PRESS INTERNATIONAL	Cole Information
1995	TAKARA CO NY INC	Cole Information
1992	TAKARA BELMONT WEST	Pacific Bell
	TAKARA BELMONT WEST	Cole Information

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Year	Uses	Source
2020	MILLER LEIGHTON T DDS	EDR Digital Archive
	ONSITE DENTAL ADMIN LLC	EDR Digital Archive
	L THOMAS MILLER DDS PC	EDR Digital Archive
	INCOMPLI	EDR Digital Archive
	TINNELLY RICHARD A	EDR Digital Archive
	LABARRE OKSNEE INS AGCY INC	EDR Digital Archive
	INCOMPLI	EDR Digital Archive
	BENCHMARK MORTGAGE	EDR Digital Archive
	NCR CORP	EDR Digital Archive
	TRI-EMERALD FNCL GROUP INC	EDR Digital Archive
	E2METRON LLC	EDR Digital Archive
	DMCLS CONCIERGE & LOGISTICS	EDR Digital Archive
	IMRI	EDR Digital Archive
	POWER OF FAITH MINISTRIES INC	EDR Digital Archive
	CHRISTOPHER HARGROVE	EDR Digital Archive
	THOMAS MATHEWS	EDR Digital Archive
	COREY DOUTHETT	EDR Digital Archive
	JAMES MCP	EDR Digital Archive
	MARONYA VAROS	EDR Digital Archive
	JAMES LOGAN	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	BENJAMIN COLE	EDR Digital Archive
	BRANDON OVERSTREET	EDR Digital Archive
	SHAWNA SCHAFFNER	EDR Digital Archive
	DREW WHITE	EDR Digital Archive
	BRENDA TAYLOR	EDR Digital Archive
	BRYON LIANG	EDR Digital Archive
	LOIS DONELSON	EDR Digital Archive
	JONI SMITH	EDR Digital Archive
	KRYSTYN CONTERO	EDR Digital Archive
	JASON DE GUZMAN	EDR Digital Archive
	DAVID LINECK	EDR Digital Archive
	MICAH CLARK	EDR Digital Archive
	TAMARA LEMPIAINEN	EDR Digital Archive
	JEFF MOHR	EDR Digital Archive
	KATHLEEN CRUM	EDR Digital Archive
	JOHN GILBERT	EDR Digital Archive
	KEVIN CULBERTSON	EDR Digital Archive
	KYLE LONG	EDR Digital Archive
	JENN MCQUADE	EDR Digital Archive
	JOSHUA FARNHAM	EDR Digital Archive
	JEAN BAUGH	EDR Digital Archive
	CHRIS MUKUL	EDR Digital Archive
	JESSICA KNIGHT	EDR Digital Archive
	ROYAL CACAL	EDR Digital Archive
	ABIGAIL BERGEN	EDR Digital Archive
	DEAN DEL	EDR Digital Archive
	IAN NELSON	EDR Digital Archive
	DEL KRAY	EDR Digital Archive
	SOREN IVERSON	EDR Digital Archive
	SHEILA BATALLA	EDR Digital Archive
	KRISTINA GULINO	EDR Digital Archive
	CHAD DUNCAN	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	MANNY USMANI	EDR Digital Archive
	TRENELLE LYISCOTT	EDR Digital Archive
	JAMES SCIACQUA	EDR Digital Archive
	JAN COLBERT	EDR Digital Archive
	TAYLOR BENNETT	EDR Digital Archive
	MAX PAGE	EDR Digital Archive
	STEPHANIE GILBERT	EDR Digital Archive
	JAYSON HINES	EDR Digital Archive
	DANIEL KRIEF	EDR Digital Archive
	PAUL SHAVER	EDR Digital Archive
	PHU PHAN	EDR Digital Archive
	ELIZABETH IBARRA	EDR Digital Archive
	BRIAN WRIGHT	EDR Digital Archive
	REMINGTON MCELHANEY	EDR Digital Archive
	AISHA BRENT	EDR Digital Archive
	JOEL TAYLOR	EDR Digital Archive
	CHRISTOPHER EDWARDS	EDR Digital Archive
	TIM WARDCHOW	EDR Digital Archive
	DANIEL MATHURIN	EDR Digital Archive
	CONNIE COLE	EDR Digital Archive
	AUSTIN RANSON	EDR Digital Archive
	SPENCER COBB	EDR Digital Archive
	DAVID STINSON	EDR Digital Archive
	RAQUEL BULOSAN	EDR Digital Archive
	CHRISTOPHER WEIGELE	EDR Digital Archive
	RUSSELL MEDCALF	EDR Digital Archive
	CYNTHIA WESSELS	EDR Digital Archive
	ARTHUR NEUMANN	EDR Digital Archive
	THOMAS POND	EDR Digital Archive
	HUNTER PALMER	EDR Digital Archive
	BYRON BOUGH	EDR Digital Archive
	ERNEST MENDOZA	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	ROBERT GAVAGNIE	EDR Digital Archive
	DAVID CULBERTSON	EDR Digital Archive
	JEANETTE KUNS	EDR Digital Archive
	HYUNG LIM	EDR Digital Archive
	PATTY MOSES	EDR Digital Archive
	NATE RUPPLE	EDR Digital Archive
	MATTHEW MARTIN	EDR Digital Archive
	JENNIE BRAZEL	EDR Digital Archive
	BOBBIE BALDWIN	EDR Digital Archive
	GINGER NEIL	EDR Digital Archive
	CHERYL SCHRODER	EDR Digital Archive
	ELIZABETH WATKINS	EDR Digital Archive
	GORDON RASKIN	EDR Digital Archive
	KIMBER GORDON	EDR Digital Archive
	LAURA LAFLAMME	EDR Digital Archive
	TAYLOR RAE	EDR Digital Archive
	MOHAMMAD FAKHIR	EDR Digital Archive
	PAUL SLEMMER	EDR Digital Archive
	PAUL COPELAND	EDR Digital Archive
	JANET MILLER	EDR Digital Archive
	MICHELLE COLSTON	EDR Digital Archive
	BRIAN GALUSKA	EDR Digital Archive
	JASON CREAGER	EDR Digital Archive
	GERRELYNN CRAWFORD	EDR Digital Archive
	BAILEY NAAS	EDR Digital Archive
	DAVID GRIJALVA	EDR Digital Archive
	BOB MATOSSIAN	EDR Digital Archive
	MARTHA DANIEL	EDR Digital Archive
	RYAN HUTCHISON	EDR Digital Archive
	JOSHUA INZER	EDR Digital Archive
	JASON CYREE	EDR Digital Archive
	CLIFFORD HARRIS	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	ANDREW GERRARD	EDR Digital Archive
	MICHAEL PHILLIPS	EDR Digital Archive
	DAVID BAKER	EDR Digital Archive
	KEITH FRALEY	EDR Digital Archive
	THERESA FLOYD	EDR Digital Archive
	PETE FURZE	EDR Digital Archive
	KYLER CALLAWAY	EDR Digital Archive
	MARONYA SCHARF	EDR Digital Archive
	MITCHELL GRIFFITH	EDR Digital Archive
	MONICA JONES	EDR Digital Archive
	JESSE KOELZER	EDR Digital Archive
	PATRICK RIDENOUR	EDR Digital Archive
	MARK VELASCO	EDR Digital Archive
	JOEL FAGERHAUG	EDR Digital Archive
	CAROL FULTON	EDR Digital Archive
	GREGORY RICHARDSON	EDR Digital Archive
	SHANNON PALMER	EDR Digital Archive
	CELESTINA ATTAH	EDR Digital Archive
	RUSS COGDELL	EDR Digital Archive
	GREG RAMOS	EDR Digital Archive
	AMBER FONTS	EDR Digital Archive
	ANTHONY BAUCUM	EDR Digital Archive
	BLAIR SAMMONS	EDR Digital Archive
	ANDREW SCHUNDLER	EDR Digital Archive
	CRUM KATHLEEN	EDR Digital Archive
	DAVID DEPUTY	EDR Digital Archive
	JAWAD KERDOUDI	EDR Digital Archive
2014	WCH DEVELOPMENT	Cole Information
	ACTIONABLE RESEARCH	Cole Information
	TINNELLY RICHARD A ATTY	Cole Information
	SEA COAST FUNDING	Cole Information
	AL FRANK ASSET MANAGEMENT INC	Cole Information

FINDINGS

Year	Uses	Source
2014	THOMAS STACHOWSKY	Cole Information
	RICHARD TINNELLY	Cole Information
2010	CULBERTSON ADAMS & ASSOC INC	Cole Information
	TRIMARK PACIFIC HOMES	Cole Information
	GROUP IV INTL	Cole Information
	RICHARD A TINNELLY LAW OFFICES	Cole Information
2005	CULBERTSON ADAMS & ASSOCS INC	Cole Information
	THE LAW OFFICE OF ANDRIETTE COLBERTS	Cole Information
	SPARTAN INTERIORS	Cole Information
	CLEAR CHANNEL OUTDOOR	Cole Information
	FIRST AMERICAN CAPITAL R E S INC	Cole Information
	HEALTH LINK INSURANCE SOLUTION	Cole Information
	TINNELLY RICHARD A	Cole Information
	HEALTH LINK INSURANCE SLTN	Cole Information
	COMPETINGLOANS	Cole Information
	CCI	Cole Information
	NEIGHBORHOOD INC	Cole Information
	MTX EPS INC	Cole Information
	PROCTOR VALLEY WEST PARTNERS LLC	Cole Information
	MICHAEL LEFEVRE	Cole Information
	NEIGHBORHOOD LANE	Cole Information
	RICHARD TINNELLY	Cole Information
1995	CITGO PETROLEUM CORP	Cole Information
	OWEN PROPERTIES INC	Cole Information
	BOB WOODWORTH & ASSOC	Cole Information
	JAMES W SMITH ASSOC	Cole Information
	MEDIA SHOP	Cole Information
	BART ESTERLEY INSURANCE INC	Cole Information
	ORANGE COUNTY DESIGN CTR	Cole Information
	CULBERTSON ADAMS & ASSOC INC	Cole Information
	FIRE MARK INSURANCE BROKERS	Cole Information
	PHASE ONE INC	Cole Information

FINDINGS

Year	*Uses*	*Source*
1995	OKLAHOMA DEPARTMENT COMMERCE	Cole Information
	CALITEX CONSTRUCTION & ENGRNG	Cole Information
	KATHRYN G THOMPSON CONSTR CO	Cole Information
	WIVIOTT CO	Cole Information
	DAVID, STEARN	Cole Information
1992	CALITEX CONSTRUCTION & ENGINEERING	Pacific Bell
	THOMPSON KATHRYN G CONSTRUCTION CO	Pacific Bell
	A & C PROPERTIES INC	Pacific Bell
	OKLAHOMA DEPT OF	Pacific Bell
	COMMERCE	Pacific Bell
	A & C PROPERTIES INC	Pacific Bell
	A & C PROPERTIES INC	Pacific Bell
	100 ORANGE COUNTY	Pacific Bell
	DESIGN CENTER	Pacific Bell
	140 FIRE MARK INSURANCE	Pacific Bell
	BROKERS	Pacific Bell
	140 ESTERLEY E BART	Pacific Bell
	INSURANCE INC	Pacific Bell
	150 CITGO PETROLEUM	Pacific Bell
	210 SMITH JAMES W	Pacific Bell
	ASSOCIATES	Pacific Bell
	210 OWEN PROPERTIES INC	Pacific Bell
	220 CULBERTSON ADAMS & ASSOCIATES INC	Pacific Bell
	OWEN PROPERTIES INC	Cole Information
	CITGO PETROLEUM	Cole Information
	THOMPSON KATHRYN G	Cole Information
	FIRE MARK INS BRKRS	Cole Information
	ORANGE CO DESIGN CT	Cole Information
	SMITH JAMES W ASSOC	Cole Information
	A&C PROPERTIES INC	Cole Information
	CALITEX CONST&ENGRG	Cole Information

Year	Uses	Source
1992	WIVIOTT COMPANY THE	Cole Information
	CULBERTSON ADAMS	Cole Information
	OK DEPT OF COMMERCE	Cole Information

92 ARGONAUT

Year	Uses	Source
2020	UC ADVANTAGE	EDR Digital Archive
	CONSUMER LEGAL SOLUTIONS INC	EDR Digital Archive
	OKONSKI MICHELE A	EDR Digital Archive
	MARINA RANCH CHRISTIAN CHURCH	EDR Digital Archive
	PACIFIC PINEAPPLE	EDR Digital Archive
	HANSCHE TY AGT	EDR Digital Archive
	BBM ONLINE INC	EDR Digital Archive
	ONLINE CONSULTING AGENCY	EDR Digital Archive
	BODY RENEWAL MASSAGE	EDR Digital Archive
	DE LUCIO ALYCIA RN	EDR Digital Archive
	BIRTH CHOICE PREGNANCY CTR	EDR Digital Archive
	BENEFIT SOURCE	EDR Digital Archive
	PIXEL FILM STUDIOS	EDR Digital Archive
	HANIX INTERNATIONAL USA INC	EDR Digital Archive
	WHITE SANDS PRODUCTS INC	EDR Digital Archive
	DON EMDE PRODUCTIONS	EDR Digital Archive
	IZUMI AMERICA INC	EDR Digital Archive
	ALISO CREEK CHIROPRACTIC	EDR Digital Archive
	MANCUSO KENNEDY RSTRNT HLDNGS	EDR Digital Archive
	SOLE SOURCE TECHNOLOGY LLC	EDR Digital Archive
	CLEARSCREENING.COM	EDR Digital Archive
	FIRM FOUNDATION HR	EDR Digital Archive
	SERVICE CENTER	EDR Digital Archive
	IMSXY	EDR Digital Archive
	O C R-MAX	EDR Digital Archive
	META SOLAR	EDR Digital Archive
	AXIS PROJECT MANAGEMENT LLC	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	SOURCE MARKETING BIZ	EDR Digital Archive
	OBJECT PHARMA INC	EDR Digital Archive
	MAXIM MARKETING CORP	EDR Digital Archive
	ELLIS TAYLOR K DPT	EDR Digital Archive
	PURE PEDIATRIC THERAPY	EDR Digital Archive
	LENDER FUNNEL	EDR Digital Archive
	SULLY MISKINYAR	EDR Digital Archive
	SHAH GHANBARI	EDR Digital Archive
	JASON HYNEK	EDR Digital Archive
	ABIGAIL MACDOUGALL	EDR Digital Archive
	JUSTIN COHEN	EDR Digital Archive
	MYRANDA SCHIPPOREIT	EDR Digital Archive
	VALERIE CHITTY	EDR Digital Archive
	SCOTT DAUGHERTY	EDR Digital Archive
	CURT CANALES	EDR Digital Archive
	HAZEL MARIN	EDR Digital Archive
	MASON IBARRA	EDR Digital Archive
	KIMBERLY BOWCUTT	EDR Digital Archive
	CATHERINE SUBAGYO	EDR Digital Archive
	TRAVIS VON BARTHELD	EDR Digital Archive
	BOB NENNINGER	EDR Digital Archive
	JAY MAHONEY	EDR Digital Archive
	KELLY PIEROPAN	EDR Digital Archive
	TERRY FUNK	EDR Digital Archive
	TONY GLASER	EDR Digital Archive
	KATRINA CLARK	EDR Digital Archive
	JACOB ZAHLIS	EDR Digital Archive
	DIEDRE SMITH	EDR Digital Archive
	GRACIE DURAN	EDR Digital Archive
	JENNIFER EMDE	EDR Digital Archive
	GARY ACOSTA	EDR Digital Archive
	BRAD BARTTELS	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	ABHISHEK BHATT	EDR Digital Archive
	NICOLE GILCHRIST	EDR Digital Archive
	JAMES TRAYNOR	EDR Digital Archive
	ERIC HOPKINS	EDR Digital Archive
	BRAD GRELL	EDR Digital Archive
	KUL BHUSHAN	EDR Digital Archive
	CHRISTIAAN HILE	EDR Digital Archive
	VAN SIMMONS	EDR Digital Archive
	JOSH ROACHE	EDR Digital Archive
	VERNA GOODLOE	EDR Digital Archive
	RACHELLE RICHTER	EDR Digital Archive
	KIMBERLY WOOD	EDR Digital Archive
	ALAN RAOUF	EDR Digital Archive
	KIERSTEN SKOV	EDR Digital Archive
	PHILLIP TSUNODA	EDR Digital Archive
	MELISSA CAPPELLO	EDR Digital Archive
	KRISHA JOLLEY	EDR Digital Archive
	JIM BONE	EDR Digital Archive
	BRIAN DEAN	EDR Digital Archive
	AUTUMN CALLIER	EDR Digital Archive
	RHONDA HYNEK	EDR Digital Archive
2014	PIXEL FILM STUDIOS	Cole Information
	JU DENTAL LABORATORY INC	Cole Information
	INFINITY MARKETING GROUP INC	Cole Information
	DON EMDE PRODUCTIONS	Cole Information
	STUDIO PAD	Cole Information
	MIX MARKETING	Cole Information
	VARGA MEDIA SOLUTIONS INCORPORATED	Cole Information
	BIRTH CHOICE PREGNANCY CENTERS	Cole Information
	ALISO CREEK CHIROPRACTIC	Cole Information
	SOLE SOURCE TECHNOLOGY LLC	Cole Information
	TRUE SPEED WIRELESS	Cole Information

FINDINGS

Year	Uses	Source
2014	DHALLA CPA A PPROFESSIONAL CORP	Cole Information
	MAXIM CO	Cole Information
	KELLY MORTGAGE & REALTY	Cole Information
2010	SEISMIC SOLUTIONS	Cole Information
	DATATEK INTERNATIONAL	Cole Information
	WAVETEC	Cole Information
	TECH FACTORY	Cole Information
	ALISO CREEK CHIROPRACTIC	Cole Information
	AMERICAN MEMORY CORP	Cole Information
	VERANDA FINANCIAL INC	Cole Information
	IMATRIX SOFTWARE	Cole Information
	TONERWORLDCOM	Cole Information
	HILL GRAPHICS	Cole Information
	MAXIM MARKETING CORP	Cole Information
	DON EMDE PRODUCTIONS	Cole Information
	INTEGRITY FUTURES GROUP	Cole Information
	TRUESPEED WIRELESS	Cole Information
	VARGA MEDIA SOLUTIONS INC	Cole Information
	BENEFITSOURCE	Cole Information
	LISTA INTERNATIONAL	Cole Information
	TRUE SPEED WIRELESS	Cole Information
2005	ERIC HOPKINS CPA	Cole Information
	NTI	Cole Information
	GROUP DELTA CONSULTANTS INC	Cole Information
	NATIONWIDE MORTGAGE	Cole Information
	HORTON & RYAN INC	Cole Information
	TRANSPAC TECHNOLOGY INC	Cole Information
	ALISO PIX	Cole Information
	N A NATIONWIDE MORTGAGE CORP	Cole Information
	DATATEK COMPONENTS INC	Cole Information
	GLOBAL EPOINT	Cole Information
	DATA RESEACH SYSTEMS INC	Cole Information

FINDINGS

Year	Uses	Source
2005	RSB PHOTO	Cole Information
	AMERICAN MEMORY CORP	Cole Information
	ANNIS STEVEN DC	Cole Information
	HOMEPRO	Cole Information
	MADIBA INC	Cole Information
	NATIONWIDE REAL ESTATE	Cole Information
	DENISE CAMPBELL	Cole Information
	DATA TECH INTERNATIONAL	Cole Information
	LORDS MEN INC	Cole Information
	ANTHONY RATHER	Cole Information
	NEWTECH INTERNATIONAL INC	Cole Information
	ALISO CREEK CHIROPRACTIC CENTER	Cole Information
	CADDIS PROPERTIES	Cole Information
	MILLENIUM MORTGAGE SOLUTIONS	Cole Information
	ASPEN BUSINESS SERVICES	Cole Information
	AMERICAN BENEFIT FINANCE	Cole Information
	MADIBA CONSULTING INC	Cole Information
	CITATION PUBLISHING INC	Cole Information
	DISTRIBUTED POWER SERVICES	Cole Information
	JOEY L MOONEY DC	Cole Information
	21ST CENTURY INNOVATIONS INC	Cole Information
	JEFF VOLLMER	Cole Information
	STEVEN ANNIS	Cole Information
2000	21ST CENTURY INNOVATIONS INCORPORATED	Cole Information
	STEVEN ANNIS	Cole Information
	SARAH BARTLETT	Cole Information
1995	AOT INC	Cole Information
	COUNTY RECORDING SVC	Cole Information
	DATATEK INTERNATIONAL	Cole Information
	ALISO CREEK CHIROPRACTIC CTR	Cole Information
	ACCU SCAN INC	Cole Information
	RCN PRODUCTS INC	Cole Information

FINDINGS

Year	*Uses*	*Source*
1995	21ST CENTURY INNOVATIONS INC	Cole Information
	SAFEWAY STORES INC	Cole Information
	DECORATING DEN	Cole Information
	BONNKE REINHARD MINISTRIES	Cole Information
	ANNIS, STEVEN	Cole Information
1992	CALVARY CHAPEL OF	Pacific Bell
	LAGUNA HILLS	Pacific Bell
	LAGUNA HILLS	Pacific Bell
	100 BONNKE REINHARD	Pacific Bell
	MINISTRIES	Pacific Bell
	150 KOLL COMPANY THE	Pacific Bell
	CHIROPRACTIC	Pacific Bell
	CENTER	Pacific Bell
	180 DATATEK	Pacific Bell
	INTERNATIONAL	Pacific Bell
	TECHNOLOGIES INC	Pacific Bell
	205 SAFEWAY INC PRODUCE	Pacific Bell
	BUYING	Pacific Bell
	215 DECORATING DEN	Pacific Bell
	DIVISIONAL OFFICE	Pacific Bell
	235 COUNTY RECORDING	Pacific Bell
	SERVICE	Pacific Bell
	240 ALLIANCE GROUP THE	Pacific Bell
	245 ACCUSCAN INC	Pacific Bell
	250 COMPU DEAL CORP	Pacific Bell
	255 PHASE ONE INC	Pacific Bell
	260 AUDIT GROUP LTD THE	Pacific Bell
	265 NEWLAND BENEFIT	Pacific Bell
	INSURANCE SERVICES	Pacific Bell
	265 JACKSON DAVE	Pacific Bell
	INNOVATIONS INC	Pacific Bell
	275 RCN PRODUCTS INC	Pacific Bell

Year	Uses	Source
1992	ANNIS STEVEN DC	Cole Information
	SAFEWAY PRDCE BUYNG	Cole Information
	KOLL COMPANY THE	Cole Information
	DATATEK INTERNATL	Cole Information
	COMPU DEAL CORP	Cole Information
	R C N PRODUCTS INC	Cole Information
	ALLIANCE GROUP THE	Cole Information
	AUDIT GROUP LTD THE	Cole Information
	BONNKE REINHARD	Cole Information
	CODENOLL TCHNLGY	Cole Information
	R F SHEA CO	Cole Information
	NEWLAND BENEFT INS	Cole Information
	CALVARY CHPL	Cole Information
	STATE FARM INS AGNT	Cole Information
	COUNTY RECORDING SV	Cole Information
	PHASE ONE INC	Cole Information
	ACCUSCAN INC	Cole Information
	DECORATING DEN	Cole Information
	21ST CNTRY INNOVATN	Cole Information
	JACKSON, DAVE	Cole Information
	ANNIS, STEVEN	Cole Information

93 ARGONAUT

Year	Uses	Source
1992	GENEVA SYSTEMS THE	Cole Information

ARGONAUT DR

1 ARGONAUT DR

Year	Uses	Source
2002	NNOVATIONS INC	Haines Company
	ADVANCED MOVING	Haines Company
	SYSTEMS GYMNASTICS PARTIES	Haines Company
	PANAMVANUNSRYL	Haines Company

Year	Uses	Source
2002	MVNG&STRGE PANAMER VANLNS	Haines Company
	RYLMVG&STRG PAN AMERICAN ROYAL	Haines Company
	MOVING&STRG PAN AMERICAN ROYAL	Haines Company
	M 00 NG&STRGE PRECISION	Haines Company
	TECHNOLOGIES OSIMMONS Wiliam	Haines Company
	TOY COLLECTORS	Haines Company
	EXCHANGE USGYMNASTICS	Haines Company
	TRAINING CENTER	Haines Company
1992	Waldron Wayne	Pacific Bell
	A NATIONAL GYMNASTICS	Pacific Bell
	TRAINING CENTER INC	Pacific Bell
	A SIMMONS WILLIAM	Pacific Bell
	200 NATURAL WHITE INC	Pacific Bell

3 ARGONAUT DR

Year	Uses	Source
2002	XXXX	Haines Company

5 ARGONAUT DR

Year	Uses	Source
2002	GOUP DELTA	Haines Company
	CONSULTANTS JENNINGS HALDERMA	Haines Company
	N HOOD MADIBA CONSULTING	Haines Company
	MOONEYJOELDC	Haines Company
	NATIONWDE	Haines Company
	MORTGAGE NEWTECH	Haines Company
	INTERNATIONAL RSB	Haines Company
	REVENUE RECOVERY	Haines Company
	SERVICE INC THURMAN MARKETING	Haines Company
	SERVICES TRANSPAC	Haines Company
	TECHNOLOGY SOURCE WLEZIEN R LAWRENCE	Haines Company
1995	Peter C David Co	Pacific Bell

FINDINGS

7 ARGONAUT DR

Year	Uses	Source
2002	SCREENINGSYSTEMS	Haines Company

8 ARGONAUT DR

Year	Uses	Source
2002	CAFE ALSO	Haines Company
	EPICO	Haines Company
	EPICO	Haines Company
	EPICO	Haines Company
	BSTSHOCKS	Haines Company

13 ARGONAUT DR

Year	Uses	Source
1992	Waldron Wayne	Pacific Bell

15 ARGONAUT DR

Year	Uses	Source
2002	ARBONNEINTLINC	Haines Company

21 ARGONAUT DR

Year	Uses	Source
2002	AZTEC COMPONENTS	Haines Company
	INC DIMENSIONSIN	Haines Company
	SCREEN PRINTING DIMENSIONSIN	Haines Company
	SCREEN PRINTING ET 10 UETFEAMERICA	Haines Company
	OHUNTERAleo	Haines Company
	ONE 3 TWOINC	Haines Company

27 ARGONAUT DR

Year	Uses	Source
2002	BEARING ENGINEERS	Haines Company

29 ARGONAUT DR

Year	Uses	Source
2002	ALISODVIEJO REALTY	Haines Company
	COSMR TERMITE	Haines Company

Year	Uses	Source
2002	CONTROL INC PRINTAMERICA	Haines Company
	SYNERGY s	Haines Company
	ELECTRONICS	Haines Company
	TDPROPERTIES	Haines Company
	TD PROPERTIES	Haines Company
	TRADER PUBLISHING	Haines Company
	EMPLYMNT OE	Haines Company

31 ARGONAUT DR

Year	Uses	Source
2002	SPEARING John	Haines Company
	INTEGRAF	Haines Company

35 ARGONAUT DR

Year	Uses	Source
2002	DIABLOVALLEY	Haines Company
	PACKAGING INC J&P ELECTRIC INC	Haines Company
	NICOLAI&NUTH	Haines Company
	PARATECH COATING	Haines Company
	PELTEKINC	Haines Company
	ARATESOURCE	Haines Company
	RATESOURCE	Haines Company

36 ARGONAUT DR

Year	Uses	Source
2002	ACCME GASKETS LLC	Haines Company
	ALLSTARDUGOUT	Haines Company
	BULLET MANAGEMENT	Haines Company
	HOME FINISHES	Haines Company
	SPECTRUM BUSINESS	Haines Company
	CENTERS	Haines Company

39 ARGONAUT DR

Year	Uses	Source
2002	A 2 TEC	Haines Company

Year	Uses	Source
2002	AZTECCOMPONENTS	Haines Company
	INC AZTECINC	Haines Company
	SEABREEZE	Haines Company
	MANAGEMENT	Haines Company

51 ARGONAUT DR

Year	Uses	Source
2002	STORITSELFSTRG	Haines Company

61 ARGONAUT DR

Year	Uses	Source
2002	KENNEDY PIPELINE CO	Haines Company
	NATLSAFETYCMPLNC	Haines Company
	TRUMBLE Suart	Haines Company

68 ARGONAUT DR

Year	Uses	Source
2002	BALLET	Haines Company
	CONSERVATORY FARRELL&ASSOCIATE	Haines Company
	S GENYXMEOICALINC	Haines Company
	MISHIBACORPOFCA	Haines Company

71 ARGONAUT DR

Year	Uses	Source
2002	BANDCMOWING	Haines Company
	BEC MOVING	Haines Company
	TRUMBLE Suart	Haines Company
1991	B & C Moving	Pacific Bell
	B &&CPainting	Pacific Bell

72 ARGONAUT DR

Year	Uses	Source
2002	MICROVENTIONINC	Haines Company

FINDINGS

75 ARGONAUT DR

Year	Uses	Source
2002	ODULINMauelne	Haines Company
	KENSINGTON ELTRNC	Haines Company

85 ARGONAUT DR

Year	Uses	Source
2002	BUILDING a C I SOKA UNIVERSITY	Haines Company
	PROJECTS	Haines Company
	CULBERTSON ADAMS 949 581 2 B	Haines Company
	KYOCERAINDUSTRIAL	Haines Company
	CRMCS CORP LABAARRE&OKSNEE	Haines Company
	INC LABARRE&OKSNEE	Haines Company
	INC r ABARRE&OKSNEE	Haines Company
	INC LABARBE&OKSNEE	Haines Company
	INSURANCE AG SEA COAST FUNDING	Haines Company
	TINNELLY RICHARD A	Haines Company
	ATTY TRIMABK PACIFIC	Haines Company
	HOMES	Haines Company

92 ARGONAUT DR

Year	Uses	Source
2002	BUILDING r ALISO CREEK	Haines Company
	CHIROPRACTIC CTR AMERMEMORY CORP	Haines Company
	ANNIS STEVEN DC	Haines Company
	C&NESTSOLUTIONS	Haines Company
	CNETSOLUTIONS	Haines Company
	COMPUTING	Haines Company
	NEWS 5 REVIEW CDATASYSTEMSWEST	Haines Company
	DATATEKINTERNATL	Haines Company
	GATEWAY FUNDING	Haines Company
1995	William Scott Enterpr Ises	Pacific Bell
1991	Creative Photography	Pacific Bell

93 ARGONAUT DR

Year	Uses	Source
2002	XXXX	Haines Company

ARGONAUT ST

1 ARGONAUT ST

Year	Uses	Source
1997	BABY LEAGUE	Pacific Bell
	A SIMMONS WILLIAM	Pacific Bell
	250 VETERINARY RELIEF SERVICES	Pacific Bell

5 ARGONAUT ST

Year	Uses	Source
1997	A NATIONAL GYMNASTICS TRAINING CENTER INC	Pacific Bell
	250 HOMEWORK HELPERS	Pacific Bell

7 ARGONAUT ST

Year	Uses	Source
1997	SCREENING SYSTEMS INC	Pacific Bell

8 ARGONAUT ST

Year	Uses	Source
1997	100 AMERICAN	Pacific Bell
	ASSOCIATION OF INDEPENDENT	Pacific Bell
	140 RST SHOCKS	Pacific Bell
	160 AMERICAN MARTIAL	Pacific Bell
	ART ATHLETIC ACADEMY	Pacific Bell
	170 SAJEN LABORATORIES INC	Pacific Bell
	180 J QS SANDWICH SHOP	Pacific Bell

15 ARGONAUT ST

Year	Uses	Source
1997	ARBONNE INTERNATIONAL INC	Pacific Bell

FINDINGS

21 ARGONAUT ST

Year	Uses	Source
1997	DIMENSIONS IN SCREEN PRINTING	Pacific Bell
	A ETla UETTE AMERICA	Pacific Bell
	8 DEL MAR MACHINERY INC	Pacific Bell

27 ARGONAUT ST

Year	Uses	Source
1997	BEARING ENGINEERS INC	Pacific Bell

28 ARGONAUT ST

Year	Uses	Source
1997	SYNERGY MICRO TECHNOLOGIES	Pacific Bell
	120 CONSUMER TERMITE CONTROLINC	Pacific Bell
	150 FUTURE VIDEO PRODUCTS INC	Pacific Bell

31 ARGONAUT ST

Year	Uses	Source
1997	1 NTEGRAF	Pacific Bell

35 ARGONAUT ST

Year	Uses	Source
1997	AI PARA TECH COATING INC	Pacific Bell
	A 2 NUTH & NICOLAI	Pacific Bell
	82 J & P ELECTRIC INC	Pacific Bell
	82 DIABLO VALLEY PACKAGING INC	Pacific Bell
	B 2 RATESOURCE	Pacific Bell
	82 IMPACT SOUTHERN CALIF INC	Pacific Bell

36 ARGONAUT ST

Year	Uses	Source
1997	100 ABACUS DESIGN & DEVELOPMENT INC	Pacific Bell
	130 SPECTRUM BUSINESS CENTERS	Pacific Bell
	150 MATCHLESS GIFTS DISTRIBUTORS	Pacific Bell
	170 LG SEMICON AMERICA INC	Pacific Bell

39 ARGONAUT ST

Year	Uses	Source
1997	B BAG STAND CO INC THE	Pacific Bell
	B ON TWO WHEELS ENTERTAINMENT INC	Pacific Bell

51 ARGONAUT ST

Year	Uses	Source
1997	STOR IT SELF STORAGE	Pacific Bell

61 ARGONAUT ST

Year	Uses	Source
1997	KENNEDY PIPELINE COMPANY	Pacific Bell
	NATL SAFETY COMPLIANCE INC	Pacific Bell
	MEDFAST INC	Pacific Bell
	TOPPMED INC	Pacific Bell

66 ARGONAUT ST

Year	Uses	Source
1997	100 BALLET CONSERVATORY THE	Pacific Bell
	140 REAL TIME INSTRUMENTS	Pacific Bell
	150 FARRELL & ASSOCIATES	Pacific Bell
	180 REGO DUFRESNE LABORATORIES INC	Pacific Bell

71 ARGONAUT ST

Year	Uses	Source
1997	B & C MOVING INC	Pacific Bell

72 ARGONAUT ST

Year	Uses	Source
1997	MISSION VIEJO CHRISTIAN SCHOOL	Pacific Bell

75 ARGONAUT ST

Year	Uses	Source
1997	KENSINGTON ELECTRONICS INC	Pacific Bell

85 ARGONAUT ST

Year	Uses	Source
1997	100 TINNELLY RICHARD	Pacific Bell

Year	Uses	Source
1997	110 LA BARRE OKSNEE INSURANCE AGENCY	Pacific Bell
	120 MARKETSOURCE CORP	Pacific Bell
	140 ENGLISH DAMCO SALES CO INC	Pacific Bell
	Contd	Pacific Bell
	150 CITGO PETROLEUM CORP	Pacific Bell
	170 FARNSWORTH GROUP	Pacific Bell
	190 PHASE ONE INC	Pacific Bell
	200 PACIFIC GATEWAY HOMES	Pacific Bell
	205 PARKER PROPERTIES INC	Pacific Bell
	205 CUSTOM DISTINCTIONS	Pacific Bell
	205 LEHMAN JERRY	Pacific Bell
	205 DIGITAL INTEGRATED SYSTEMS	Pacific Bell
	210 MALLMEDIA NETWORK	Pacific Bell
	220 CULBERTSON ADAMS & ASSOCIATES INC	Pacific Bell

92 ARGONAUT ST

Year	Uses	Source
1997	JLC ASSOCIATES	Pacific Bell
	IMAGE N THAT	Pacific Bell
	100 BRANCH G D	Pacific Bell
	CHIROPRACTIC CENTER	Pacific Bell
	120 STERNSCHUPPE	Pacific Bell
	140 WORLDNET COMPUTERS	Pacific Bell
	160 AMERICAN MEMORY CORP	Pacific Bell
	180 DATATEK INTERNATIONAL	Pacific Bell
	205 SAFEWAY INC PRODUCE BUYING	Pacific Bell
	210 TRANSPAC	Pacific Bell
	TECHNOLOGY SOURCE	Pacific Bell
	225 SHERMAN DON ASSOCIATES	Pacific Bell
	225 S K AND COMPANY	Pacific Bell
	235 LAWRENCE R WLEZIEN INC	Pacific Bell
	240 N J PRODUCTS INC	Pacific Bell

Year	Uses	Source
1997	245 MICRO HOUSE SOLUTION	Pacific Bell
	270 21ST CENTURY INNOVATIONS INC	Pacific Bell
	275 RCN PRODUCTS INC	Pacific Bell

ARGONAUT STE 110

92 ARGONAUT STE 110

Year	Uses	Source
2020	STEVEN ANNIS	EDR Digital Archive

ARGONAUT STE 220

92 ARGONAUT STE 220

Year	Uses	Source
2020	REBECCA ENNIS	EDR Digital Archive

ARGONAUT STE C

1 ARGONAUT STE C

Year	Uses	Source
2020	WILLIAM SIMMONS	EDR Digital Archive

ASHWOOD

2 ASHWOOD

Year	Uses	Source
2020	CATHERINE MIVELAZ	EDR Digital Archive
	STEPHEN MIVELAZ	EDR Digital Archive
2014	STEPHEN MIVELAZ	Cole Information
2010	STEPHEN MIVELAZ	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	R CARTON	Cole Information

4 ASHWOOD

Year	Uses	Source
2020	CAROLYN OLSON	EDR Digital Archive
	KATY OLSON	EDR Digital Archive

Year	Uses	Source
2020	KATYE OLSON	EDR Digital Archive
	JAS OLSON	EDR Digital Archive
	MARCIA FLOHR	EDR Digital Archive
2014	JAMES OLSON	Cole Information
2010	DONALD FLOHR	Cole Information
2005	JEFFREY EYLER	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

6 ASHWOOD

Year	Uses	Source
2020	MILES KETCHUM	EDR Digital Archive
	CARLA OSIMO	EDR Digital Archive
2014	CARLA OSIMO	Cole Information
2010	JOHN SORENSON	Cole Information
2005	MILES KETCHUM	Cole Information
1995	KETCHUM, MILES H	Cole Information
1992	KETCHUM, MILES H	Cole Information

8 ASHWOOD

Year	Uses	Source
2020	SANDRA WILLS	EDR Digital Archive
	DAN WILLS	EDR Digital Archive
2014	MARIA STAHLMAN	Cole Information
2010	KRISTIN STAHLMAN	Cole Information
2005	KRISTIN STAHLMAN	Cole Information

10 ASHWOOD

Year	Uses	Source
2020	JILL CHAMBERS	EDR Digital Archive
2014	JILL CHAMBERS	Cole Information
2010	DAVID CHAMBERS	Cole Information
2005	DAVID CHAMBERS	Cole Information
1995	GOETZE, CAROL	Cole Information
1992	CRONIN, K J	Cole Information

12 ASHWOOD

Year	Uses	Source
2020	BELINDA CATAMISAN	EDR Digital Archive
	ANGELA BARATA	EDR Digital Archive
	RICHARD TROMBINO	EDR Digital Archive
2014	BELINDA CATAMISAN	Cole Information
2005	BELINDA CATAMISAN	Cole Information

14 ASHWOOD

Year	Uses	Source
2020	MIRZA BEG	EDR Digital Archive
2014	DIAN PALMQUIST	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	PFAUDLER ENTERPRISES	Cole Information
	OCCUPANT UNKNOWN	Cole Information
1992	KOCH, PETER P	Cole Information

16 ASHWOOD

Year	Uses	Source
2020	RANGUEL TODOROV	EDR Digital Archive
	NATALIA TODOROV	EDR Digital Archive
	AUBRI MCDONALD	EDR Digital Archive
	JAMES BOYD	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	BAILEY TEEPLE	Cole Information
2005	ADEL ABZAKH	Cole Information

ASHWOOD ST

2 ASHWOOD ST

Year	Uses	Source
2002	CARTONR	Haines Company
	CARTONS	Haines Company

FINDINGS

4 ASHWOOD ST

Year	Uses	Source
2002	SKOBELPa Ul	Haines Company

6 ASHWOOD ST

Year	Uses	Source
2002	SKETCHUM Shelley	Haines Company
1997	Ketchum Miles	Pacific Bell
1992	Ketchum Miles H	Pacific Bell

8 ASHWOOD ST

Year	Uses	Source
2002	GASTANEDA Arthur	Haines Company

10 ASHWOOD ST

Year	Uses	Source
2002	Ct IAMBERSJll	Haines Company
1992	Cronin KJ	Pacific Bell

14 ASHWOOD ST

Year	Uses	Source
2002	KOCHPeltr	Haines Company
1992	Koch Peter P	Pacific Bell

16 ASHWOOD ST

Year	Uses	Source
2002	JANSENKraslen Baresc I	Haines Company
	JANSENSteve	Haines Company
	SMAIA Rosangeta	Haines Company
	OBUS 10 9 ES ONEW	Haines Company
	ASHWOOD	Haines Company
	LAKE FOREST	Haines Company
	WEALTH CODE	Haines Company

18 ASHWOOD ST

Year	Uses	Source
1992	Robson David	Pacific Bell

FINDINGS

ATHENA

9 ATHENA

Year	Uses	Source
2002	ANTHONY John	Haines Company

11 ATHENA

Year	Uses	Source
2002	BEACHKK	Haines Company

13 ATHENA

Year	Uses	Source
2002	OOUINTEROAntonno	Haines Company

15 ATHENA

Year	Uses	Source
2002	OSCOTTJan	Haines Company

17 ATHENA

Year	Uses	Source
2002	KELLY Wiliam	Haines Company
	WILLIAMS	Haines Company
	WILLIAMS	Haines Company

19 ATHENA

Year	Uses	Source
2002	OMIZBAN Janet	Haines Company

21 ATHENA

Year	Uses	Source
2002	ODABIRI Shahram	Haines Company
1997	Dabiri Al A Ph D	Pacific Bell
1992	Dabiri Al A Ph D	Pacific Bell

23 ATHENA

Year	Uses	Source
2002	TIMMERMANS Arnold W	Haines Company

FINDINGS

AVENIDA CASTILLA

28 AVENIDA CASTILLA

Year	Uses	Source
1975	Binford R E	Luskey Brothers & Co., Inc.

BAYWOOD

1 BAYWOOD

Year	Uses	Source
2020	KATHERINE SCARDINA	EDR Digital Archive
2014	KIRSTEN INHAT	Cole Information
2005	TABI KING	Cole Information
2002	FRIEDMAN Samuel	Haines Company
	FRIEDMAN Samuel	Haines Company
	SKLEIN Rol	Haines Company
2000	SAMUEL FRIEDMAN	Cole Information
1995	FRIEDMAN, SAMUEL	Cole Information
1992	Feyk Kathleen	Pacific Bell
	FEYK, K	Cole Information

3 BAYWOOD

Year	Uses	Source
2014	BRIAN NUNN	Cole Information
2010	BRIAN NUNN	Cole Information
2005	KRIS HARVEY	Cole Information
2000	ASHLEY SCHAY	Cole Information
	KRIS HARVEY	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Gormley Ben G	Pacific Bell
	SCHAY, A	Cole Information
	GORMLEY, BEN G	Cole Information

5 BAYWOOD

Year	Uses	Source
2020	BRIAN BENNETT	EDR Digital Archive

Year	Uses	Source
2020	CARI BROGREN	EDR Digital Archive
2014	BRIAN BENNETT	Cole Information
2010	BROOKE POLLASTRO	Cole Information
2005	EDWARD OTERO	Cole Information
2002	REIDY James	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

7 BAYWOOD

Year	Uses	Source
2020	JAY GASPAR	EDR Digital Archive
	KAREN GASPAR	EDR Digital Archive
2014	NIOMI ALVAREZ	Cole Information
	MATTHEW POOL	Cole Information
2010	NIOMI ALVAREZ	Cole Information
2005	SCAVENGER	Cole Information
	RALPH SAVAGE	Cole Information
2002	CASAULTTom	Haines Company
2000	TOM CASAULT	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Foley Joseph P Jr	Pacific Bell

9 BAYWOOD

Year	Uses	Source
2014	MARY BRODY	Cole Information
2010	MARY BRODY	Cole Information
2002	WHITE James	Haines Company
2000	JAMES WHITE	Cole Information

11 BAYWOOD

Year	Uses	Source
2020	DEBBIE DEZ	EDR Digital Archive
2014	RYAN DEZ	Cole Information
	ADRIANA MARDARESCO	Cole Information

Year	Uses	Source
2005	GIL MARDARESCU	Cole Information
2002	KIRIAK George	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Stanw ood Lori	Pacific Bell
	STANWOOD, LORI	Cole Information

13 BAYWOOD

Year	Uses	Source
2020	TRISA NIETO	EDR Digital Archive
2014	TRISA NIETO	Cole Information
2010	GUY ERICKSON	Cole Information
	ROBERT NIETO	Cole Information
2005	KEITH FELCH	Cole Information
2002	FELCH Keith CO	Haines Company
1995	OCCUPANT UNKNOWNN	Cole Information

15 BAYWOOD

Year	Uses	Source
2020	BRIAN SCHWARTZ	EDR Digital Archive
2014	LINDA SCHWARTZ	Cole Information
2010	BRIAN SCHWARTZ	Cole Information
2005	JENNY BENEDICK	Cole Information
	JOHN HAWKS	Cole Information
2002	ARMSTRONGGreg	Haines Company
2000	FRED DESOTA	Cole Information
	GREG ARMSTRONG	Cole Information

17 BAYWOOD

Year	Uses	Source
2020	NICK HOLT	EDR Digital Archive
2014	NICK HOLT	Cole Information
2010	FREDA AVRIL	Cole Information
2005	FREDA AVRIL	Cole Information

Year	Uses	Source
2002	CARDOZARudy	Haines Company
2000	RUDY CARDOZA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Seracuse J& P	Pacific Bell
	SERACUSE, JOSEPH	Cole Information

19 BAYWOOD

Year	Uses	Source
2014	ALSAFFAR DANNY	Cole Information
	GABRIEL VARGAS	Cole Information
2010	ROBERT KOLLAR	Cole Information
2005	ROBERT KOLLAR	Cole Information
2002	BRIDGESMaraha	Haines Company
2000	CONNIE CHRISTIANSEN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Christiansen Connie B	Pacific Bell
	Bridges Marsha A	Pacific Bell

21 BAYWOOD

Year	Uses	Source
2020	MEGAN GALLAGHER	EDR Digital Archive
	COLLEEN RILEY	EDR Digital Archive
2010	COLLEEN RILEY	Cole Information
2005	STONEDECO AND TILE	Cole Information
	CYRUS DJAHANCHAHI	Cole Information
2002	GILKISON Davnd	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information
1992	Throw er David	Pacific Bell

23 BAYWOOD

Year	Uses	Source
2014	JOSTA HOGERVORST	Cole Information
2005	SAVINGS ANIMALS	Cole Information
	ANNE WOJSKOWICZ	Cole Information

Year	Uses	Source
2002	WOJAKOWICZLucy	Haines Company
2000	SIOBHAN ARTESANI	Cole Information
	LUCY WOJSKOWICZ	Cole Information
1995	ARTESANI, SIOBHAN J	Cole Information

25 BAYWOOD

Year	Uses	Source
2020	MATTHEW ARMSTRONG	EDR Digital Archive
	ANN ARMSTRONG	EDR Digital Archive
2014	MATTHEW ARMSTRONG	Cole Information
2010	MATTHEW ARMSTRONG	Cole Information
2005	GERALD RILEY	Cole Information
2002	RILEYt Gerald	Haines Company
2000	JOHN PROSSER	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Stopher Tod & Kim	Pacific Bell
	STOPHER, TOD	Cole Information

27 BAYWOOD

Year	Uses	Source
2014	NEDA HARIRI	Cole Information
2010	IAN BISHOP	Cole Information
2002	LUGlana	Haines Company
2000	GLORIA LU	Cole Information
1995	WAGER, PATTI	Cole Information

29 BAYWOOD

Year	Uses	Source
2020	RICHARD VALDEZ	EDR Digital Archive
2010	TRISHA LEONG	Cole Information
2005	LAURA KINARD	Cole Information
2002	K 1 NARD Laura	Haines Company
2000	ALEX MURASHKO	Cole Information
1995	KINARD, LAURA M	Cole Information

Year	Uses	Source
1992	Murashko Alex Jr	Pacific Bell

31 BAYWOOD

Year	Uses	Source
2020	POOPAK DARYOUSH	EDR Digital Archive
2014	VAHID SARLAK	Cole Information
2010	VAHID SARLAK	Cole Information
2005	VAHID SARLAK	Cole Information
2002	HADIANShohre S	Haines Company
2000	VAHID SARLAK	Cole Information

BAYWOOD # 39

11 BAYWOOD # 39

Year	Uses	Source
2020	PATRICK MARTIN	EDR Digital Archive
	MARIE DE ALCUAZ	EDR Digital Archive

BAYWOOD # 40

13 BAYWOOD # 40

Year	Uses	Source
2020	HIDEKI SAIDA	EDR Digital Archive

BAYWOOD # 43

25 BAYWOOD # 43

Year	Uses	Source
2020	ELIZABETH ARMSTRONG	EDR Digital Archive

BAYWOOD ST

1 BAYWOOD ST

Year	Uses	Source
1997	Friedman Samuel	Pacific Bell

19 BAYWOOD ST

Year	Uses	Source
1997	Christiansen Connie B	Pacific Bell
	Bridges Marsha A	Pacific Bell

27 BAYWOOD ST

Year	Uses	Source
1997	Lu Gloria	Pacific Bell

BIRCHMONT

1 BIRCHMONT

Year	Uses	Source
2020	KRISTIN SCHOEN	EDR Digital Archive
	RHONDA SCHOEN	EDR Digital Archive
	DANIEL SCHOEN	EDR Digital Archive
2014	DAN SCHOEN	Cole Information
2010	DAN SCHOEN	Cole Information
2005	DAN SCHOEN	Cole Information
2002	SCHOENDan	Haines Company
	SCH 31 NRhonda	Haines Company
2000	DAN SCHOEN	Cole Information
1995	HASKELL, DONALD S	Cole Information
1992	Haskell Donald S	Pacific Bell
	HASKELL, DONALD S	Cole Information

2 BIRCHMONT

Year	Uses	Source
2020	T-REX GAS TRANSPORT SOLUTIONS	EDR Digital Archive
	MARIA TIMON	EDR Digital Archive
	MING MADDEN	EDR Digital Archive
	M REVOC TIMON	EDR Digital Archive
	BRADLEY TIMON	EDR Digital Archive
2014	BRADLEY TIMON	Cole Information
2010	BRADLEY TIMON	Cole Information
2005	BRADLEY TIMON	Cole Information

Year	Uses	Source
2002	TIMON Bradley	Haines Company
2000	BRADLEY TIMON	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

3 BIRCHMONT

Year	Uses	Source
2020	JANET HONG	EDR Digital Archive
	JIMMY HONG	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	JIMMY HONG	Cole Information
2002	HONG Jrimy	Haines Company
2000	JIMMY HONG	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

4 BIRCHMONT

Year	Uses	Source
2020	LAUREN MANIX	EDR Digital Archive
	THOMAS MANIX	EDR Digital Archive
	ANDREW MANIA	EDR Digital Archive
	NANCY MANIX	EDR Digital Archive
2014	THOMAS MANIX	Cole Information
2010	THOMAS MANIX	Cole Information
2005	THOMAS MANIX	Cole Information
2002	MANIX Thomas	Haines Company
2000	THOMAS MANIX	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

5 BIRCHMONT

Year	Uses	Source
2020	JORGE GARCIA	EDR Digital Archive
	SANDRA GARCIA	EDR Digital Archive
	LAUREN GARCIA	EDR Digital Archive
2014	JORGE GARCIA	Cole Information

Year	Uses	Source
2010	JORGE GARCIA	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2002	GAROIAJorge	Haines Company
	B OHANPANNi Ah 6n	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information
1995	PARSA, SAM H	Cole Information
1992	Parse Sam H	Pacific Bell
	PARSA, SAM H	Cole Information

6 BIRCHMONT

Year	Uses	Source
2020	NISHAN OHANIAN	EDR Digital Archive
2014	BARBARA HORNE	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	CHRISTENSEN, DENNIS G	Cole Information

7 BIRCHMONT

Year	Uses	Source
2020	CHARLENE KETCHUM	EDR Digital Archive
	LAUREN EVANS	EDR Digital Archive
	DENISE EVANS	EDR Digital Archive
	ASHLEY EVANS	EDR Digital Archive
	TIMOTHY EVANS	EDR Digital Archive
2014	TIMOTHY EVANS	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	TIMOTHY EVANS	Cole Information
2002	EVANSSTeothy	Haines Company
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

8 BIRCHMONT

Year	Uses	Source
2020	ANAND CHANDRAN	EDR Digital Archive
	ROHINI SUNDARAM	EDR Digital Archive
2014	ANAND CHANDRAN	Cole Information
2010	ANAND CHANDRAN	Cole Information
2005	ANAND CHANDRAN	Cole Information
2002	PANTELASPa UF	Haines Company
2000	PAUL PANTELAS	Cole Information
1995	PANTELAS, GRACWE M	Cole Information
1992	Zamora Richard R	Pacific Bell
	Naran Harish	Pacific Bell
	NARAN, HARISH	Cole Information

10 BIRCHMONT

Year	Uses	Source
2020	ROBERT ROOT	EDR Digital Archive
2010	MICHAEL HARDEN	Cole Information
2005	GARY BULLOCK	Cole Information
2002	BULLOCKGaiy	Haines Company
2000	S DEMAGGIO	Cole Information
1995	LIRA, DIANA I	Cole Information

12 BIRCHMONT

Year	Uses	Source
2014	OCCUPANT UNKNOWN	Cole Information
2010	JAMES MANION	Cole Information
2005	SHEBOHAN MANION	Cole Information
2002	I NSKOMecdtre	Haines Company
	SCOTTCOylon	Haines Company
	SCOTT Yvee	Haines Company
2000	CLAYTON SCOTT	Cole Information
1995	RONG, KENNETH K	Cole Information

14 BIRCHMONT

Year	Uses	Source
2020	STEVEN RAIN	EDR Digital Archive
2014	STEVE RAIN	Cole Information
2010	STEVE RAIN	Cole Information
2005	STEVE RAIN	Cole Information
2002	RAINSLeven	Haines Company
2000	STEVEN RAIN	Cole Information
1995	WILCOX, KARON F	Cole Information

16 BIRCHMONT

Year	Uses	Source
2020	TAN NGO	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	TAN NGO	Cole Information
2005	TAN NGO	Cole Information
2000	TAN NGO	Cole Information
1995	SANDOVAL, CARLOS	Cole Information

18 BIRCHMONT

Year	Uses	Source
2020	STUART MAAS	EDR Digital Archive
	JOSEPH KOMADA	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	CLEVE MAAS	Cole Information
2005	CLEVE MAAS	Cole Information
2002	MAASSsra	Haines Company
1995	BRAECKEL, PIERRE M	Cole Information

20 BIRCHMONT

Year	Uses	Source
2010	DAN SEEBOLD	Cole Information
2005	SAEID SHAMSABADI	Cole Information
2002	SHAMSABAODHamd	Haines Company
1992	DADABHOY, MAHMOOD	Cole Information

FINDINGS

BIRCHMONT ST

1 BIRCHMONT ST

Year	Uses	Source
1997	Haskell Donald S	Pacific Bell

5 BIRCHMONT ST

Year	Uses	Source
1997	Parsa Sam H	Pacific Bell

12 BIRCHMONT ST

Year	Uses	Source
1997	Scott Clayton & Yvette	Pacific Bell

16 BIRCHMONT ST

Year	Uses	Source
1997	ULTIMATE SOUND PRODUCTIONS	Pacific Bell

BRENTWOOD

1 BRENTWOOD

Year	Uses	Source
2020	BRETT GOELLNER	EDR Digital Archive
	ROBIN GOELLNER	EDR Digital Archive
	LAURA GOELLNER	EDR Digital Archive
	LINDSAY GOELLNER	EDR Digital Archive
	TYLER FOLLIOTT	EDR Digital Archive
	HAKJIN KIM	EDR Digital Archive
2014	ROBIN GOELLNER	Cole Information
2010	BRETT GOELLNER	Cole Information
2005	BRETT GOELLNER	Cole Information

3 BRENTWOOD

Year	Uses	Source
2020	ALLEN HARDISON	EDR Digital Archive
	TERRILYNN HARDISON	EDR Digital Archive
2014	ALLEN HARDISON	Cole Information

Year	Uses	Source
2010	ALLEN HARDISON	Cole Information
2005	MARK HIRSCH	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	TISCHER, JOHN	Cole Information

5 BRENTWOOD

Year	Uses	Source
2020	MARCOSI PORTE	EDR Digital Archive
	HENRY HEISLER	EDR Digital Archive
2014	PORTE LA	Cole Information
	SERGIO LAPORTE	Cole Information
2010	SARAH HERRON	Cole Information
1995	GERMAIN, MARIA C	Cole Information

7 BRENTWOOD

Year	Uses	Source
2020	STEPHANIE VIGIANO	EDR Digital Archive
2010	CLIFFORD CHISAM	Cole Information
2005	CLIFF CHISAM	Cole Information
1995	WEBER, SCOTT A	Cole Information

9 BRENTWOOD

Year	Uses	Source
2020	MIA GUTIERREZ	EDR Digital Archive
	RICHARD RAFAEL	EDR Digital Archive
2014	MARION SALVAGE	Cole Information
2005	MARION SALVAGE	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

11 BRENTWOOD

Year	Uses	Source
2020	HELEN POLANCHAK	EDR Digital Archive
	HASSAN ASKARI	EDR Digital Archive
2014	REBEKAH POLANCHAK	Cole Information
2010	STEPHEN POLANCHAK	Cole Information

Year	Uses	Source
2005	REBEKAH POLANCHAK	Cole Information
	CONSTANTINO STAMATION	Cole Information
1995	DEMARCO, LOUIS J	Cole Information

13 BRENTWOOD

Year	Uses	Source
2014	SHELLEY COLE	Cole Information
2010	SHELLY COLE	Cole Information
2005	SHELLY COLE	Cole Information
1995	JONES, MIKE	Cole Information
1992	HARVEY, RICHARD E	Cole Information

15 BRENTWOOD

Year	Uses	Source
2020	ALISHA HINKLE	EDR Digital Archive
2010	VIRGINIA WREN	Cole Information
2005	VIRGINIA WREN	Cole Information
1995	BECKMAN, R	Cole Information

17 BRENTWOOD

Year	Uses	Source
1992	WOOD, JOHN D	Cole Information

21 BRENTWOOD

Year	Uses	Source
2005	ENRIQUE LOZA	Cole Information

BRENTWOOD # 85

15 BRENTWOOD # 85

Year	Uses	Source
2020	NATALIE EVERSON	EDR Digital Archive
	KENDALL EVERSON	EDR Digital Archive

FINDINGS

BRENTWOOD # 88

7 BRENTWOOD # 88

Year	Uses	Source
2020	REBEKAH KIEFER	EDR Digital Archive

BRENTWOOD ST

1 BRENTWOOD ST

Year	Uses	Source
1997	BRETTS PLUMBING	Pacific Bell

3 BRENTWOOD ST

Year	Uses	Source
1992	Tischer John	Pacific Bell

BROOKLINE CIR

7 BROOKLINE CIR

Year	Uses	Source
1980	Irvine	Pacific Telephone

BROOKLINE LN

1 BROOKLINE LN

Year	Uses	Source
2002	RVINE	Haines Company
	WEALTH CODE	Haines Company
	STOFF Gregory	Haines Company
1995	Brookhollow Office Park	Pacific Bell

2 BROOKLINE LN

Year	Uses	Source
2002	DOUGLASM	Haines Company
1980	Fairfield Sterling D	Pacific Telephone

3 BROOKLINE LN

Year	Uses	Source
2002	BRIGHT David	Haines Company

Year	Uses	Source
2002	KIRKTim	Haines Company

4 BROOKLINE LN

Year	Uses	Source
2002	YANGShrue	Haines Company
1986	Carter L Richard	Pacific Bell
	Hope K L	Pacific Bell
1970	Dunn Jas W Ib	General Telephone Co., of California

5 BROOKLINE LN

Year	Uses	Source
2002	OCOMPTONUoyd	Haines Company

7 BROOKLINE LN

Year	Uses	Source
2002	0 SORENSENGary	Haines Company
1980	Irvine	Pacific Telephone

CABRILLO TER

36 CABRILLO TER

Year	Uses	Source
2020	MICHAELSON ENTERTAINMENT	EDR Digital Archive

CALLE ARAGO

29 CALLE ARAGO

Year	Uses	Source
1975	Reed Chas H Mrs	Luskey Brothers & Co., Inc.

43 CALLE ARAGO

Year	Uses	Source
1975	Hayes Annabelle	Luskey Brothers & Co., Inc.

44 CALLE ARAGO

Year	Uses	Source
1975	Carey Lillian Mrs	Luskey Brothers & Co., Inc.

49 CALLE ARAGO

Year	*Uses*	*Source*
1975	Avrit S T	Luskey Brothers & Co., Inc.

71 CALLE ARAGO

Year	*Uses*	*Source*
1975	Moog Emanuel	Luskey Brothers & Co., Inc.

73 CALLE ARAGO

Year	*Uses*	*Source*
1975	Wollin Margaret Louise Mrs	Luskey Brothers & Co., Inc.

74 CALLE ARAGO

Year	*Uses*	*Source*
1975	Danskin Jack F	Luskey Brothers & Co., Inc.

82 CALLE ARAGO

Year	*Uses*	*Source*
1975	Emerson Frank S	Luskey Brothers & Co., Inc.

89 CALLE ARAGO

Year	*Uses*	*Source*
1975	Zimmerman Fred D	Luskey Brothers & Co., Inc.

90 CALLE ARAGO

Year	*Uses*	*Source*
1980	Mc Guire Emily L	Pacific Telephone

94 CALLE ARAGO

Year	*Uses*	*Source*
1975	Kundert Edw C	Luskey Brothers & Co., Inc.

95 CALLE ARAGO

Year	*Uses*	*Source*
1975	Humphrey Bascom	Luskey Brothers & Co., Inc.

FINDINGS

CALLE CADI

56 CALLE CADI

Year	Uses	Source
1975	Lenander Rosella	Luskey Brothers & Co., Inc.

57 CALLE CADI

Year	Uses	Source
1975	Sparr Herbert E	Luskey Brothers & Co., Inc.

59 CALLE CADI

Year	Uses	Source
1975	Pritzker J L	Luskey Brothers & Co., Inc.

60 CALLE CADI

Year	Uses	Source
1975	Russell Josephine	Luskey Brothers & Co., Inc.

CEDARBROOK

25422 CEDARBROOK

Year	Uses	Source
2020	GLENWOOD RECREATION CTR	EDR Digital Archive
2014	GLENWOOD RECREATION CENTER	Cole Information
2010	GLENWOOD RECREATION CTR	Cole Information
2005	GLENWOOD RECREATION CENTER	Cole Information
1995	GLENWOOD RECREATION CTR	Cole Information
1992	GLENWOOD	Pacific Bell
	RECREATION CENTER	Pacific Bell
	GLENWOOD REC CENTER	Cole Information

CEDARBROOK CIR

25422 CEDARBROOK CIR

Year	Uses	Source
2002	GLENWOODREC	Haines Company
	CENTER	Haines Company

FINDINGS

CEDARBROOK ST

25422 CEDARBROOK ST

Year	Uses	Source
1997	GLENWOOD	Pacific Bell
	RECREATION CENTER	Pacific Bell

CORONEL PL

49 CORONEL PL

Year	Uses	Source
2020	HIGH IMPACT TELEVISION	EDR Digital Archive

ELMBROOK

1 ELMBROOK

Year	Uses	Source
2020	JULIE SCANLON	EDR Digital Archive
	JAMES POREP	EDR Digital Archive
2014	CARLOS BOLANOS	Cole Information
	JULIE SCANLON	Cole Information
2005	RYAN PLOUNG	Cole Information
2002	VOHHAN 00 RFRobed	Haines Company
2000	ROBERT VONHANDORF	Cole Information
1995	VONHANDORF, ROBERT	Cole Information
1992	Von Handorf Robert	Pacific Bell
	VONHANDORF, ROBERT	Cole Information

2 ELMBROOK

Year	Uses	Source
2020	HOLLI DOBLE	EDR Digital Archive
2014	HOLLI JENSEN	Cole Information
	OKSANA KUDINOVA	Cole Information
2010	AMERICAN PACIFIC FUNDING	Cole Information
	LARRY RUSS	Cole Information
2005	AMERICA PACIFIC FINANCIAL	Cole Information

Year	Uses	Source
2005	RUSS ENTERPRISES	Cole Information
	CALIFORNIA SPIRIT CENTER	Cole Information
	AMERICAN PACIFIC FUNDING	Cole Information
2002	11 USS Donna	Haines Company
2000	DONNA RUSS	Cole Information
1992	Russ Donna	Pacific Bell

3 ELMBROOK

Year	Uses	Source
2020	DOROTHY REYNOLDS	EDR Digital Archive
2014	RICHARD REYNOLDS	Cole Information
	NICK DORPHELY	Cole Information
	CINDY DORPHLEY	Cole Information
2010	JAMES MOYNEUR	Cole Information
	TALAR TOPRAKJIAN	Cole Information
2005	TALAR TOPRAKJIAN	Cole Information
2002	OJAMES L y	Haines Company
1995	JAMES, LARRY F	Cole Information

4 ELMBROOK

Year	Uses	Source
2020	FRANCES MARTIN	EDR Digital Archive
2014	FRANCES MARTIN	Cole Information
2010	FRANCES MARTIN	Cole Information
2005	FRANCES MARTIN	Cole Information
2002	A 4 RTIN Francat	Haines Company
2000	FRANCES MARTIN	Cole Information

5 ELMBROOK

Year	Uses	Source
2014	NICOLE MOFFITT	Cole Information
2010	BENJAMIN MOFFITT	Cole Information
2002	ENORESENSh 1ley	Haines Company
2000	DAVID WISER	Cole Information

Year	Uses	Source
1995	ENDRESEN, SHIRLEY J	Cole Information

6 ELMBROOK

Year	Uses	Source
2020	SUNJA KATSENES	EDR Digital Archive
	CHRIS KATSENES	EDR Digital Archive
2014	ELENA MARTENS	Cole Information
	MAJELLA MANNINGUW	Cole Information
2010	LORI GRAHAM	Cole Information
2005	LORI GRAHAM	Cole Information
1995	RASMUSSEN, CHARLES	Cole Information
1992	Haig David	Pacific Bell
	HAIG, DAVID	Cole Information

7 ELMBROOK

Year	Uses	Source
2014	TOM MCCLOE	Cole Information
2010	DARRIN SMITH	Cole Information
2002	BOWLEY Debnrah	Haines Company
2000	K CHADWICK	Cole Information
1995	MAHR, CHRIS	Cole Information
1992	Updegraff George J	Pacific Bell
	UPDEGRAFF, GEORGE J	Cole Information

8 ELMBROOK

Year	Uses	Source
2020	SUSAN MCNALLY	EDR Digital Archive
2014	SUSAN MCNALLY	Cole Information
2010	J CHARLES CRYSTALWORKS	Cole Information
	SUSAN MCNALLY	Cole Information
2005	SUSAN MCNALLY	Cole Information
2002	094 A 4 N 6 N 6 M 9e 9a	Haines Company
	0 MCNALLY Saean	Haines Company
2000	SUSAN MCNALLY	Cole Information

9 ELMBROOK

Year	Uses	Source
2020	CAROLYN BUCHANAN	EDR Digital Archive
2014	CAROLYN BUCHANAN	Cole Information
2005	CAROLYN BUCHANAN	Cole Information
2002	0 XXX	Haines Company
1995	BRUSEWITZ, ANN	Cole Information
1992	Brusewitz A	Pacific Bell
	BRUSEWITZ, ANN	Cole Information

10 ELMBROOK

Year	Uses	Source
2014	COURTNEY KOEHLER	Cole Information
2010	COURTNEY KOEHLER	Cole Information
2005	GREGORY HENRY	Cole Information
2000	MICHAEL FEE	Cole Information
1995	WOOD, KENNETH S	Cole Information
1992	Sullivan Bill	Pacific Bell
	SULLIVAN, BILL	Cole Information

11 ELMBROOK

Year	Uses	Source
2014	DIOR LEWIS	Cole Information
2010	SHERYL LEWIS	Cole Information
2005	DIOR LEWIS	Cole Information
2002	BAKERDanyl	Haines Company
2000	DERRYL BAKER	Cole Information
1992	Ferry Thomas A	Pacific Bell
	FERRY, THOMAS A	Cole Information

12 ELMBROOK

Year	Uses	Source
2005	ALLISON EVANS	Cole Information
2002	OEVANSA t Bon	Haines Company
2000	ALLISON EVANS	Cole Information

FINDINGS

13 ELMBROOK

Year	Uses	Source
2020	FERESHTEH AMIRSHAHI	EDR Digital Archive
2014	FERESHTEH AMIRSHAHI	Cole Information
2010	AALLIED LOCKSMITHS	Cole Information
	GALEL FAJARDO	Cole Information
2005	GALEL FAJARDO	Cole Information
2002	LEMUSMBly	Haines Company
2000	M EMBREY	Cole Information
1995	FINLAY, LISA	Cole Information
1992	Jenkins Robert Jr	Pacific Bell
	JENKINS, ROBERT JR	Cole Information

14 ELMBROOK

Year	Uses	Source
2020	KIMBERLY EAGAR	EDR Digital Archive
2014	DAVID HADDOCK	Cole Information
	KIM EAGAR	Cole Information
2010	KIM EAGAR	Cole Information
2002	OJOHNSTON Temothy	Haines Company
2000	T STEVENS	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

15 ELMBROOK

Year	Uses	Source
2020	CHRISTI KINSEY	EDR Digital Archive
2014	MELANIE MCBETH	Cole Information
2005	REGINELD PAYNE-WIENS	Cole Information
2002	tl 16 DDLE 6 TONJohn	Haines Company
2000	SHIRLEY MORRISON	Cole Information
1995	MIDDLETON, JOHN C	Cole Information
1992	Middleton John C	Pacific Bell
	MIDDLETON, JOHN C	Cole Information

16 ELMBROOK

Year	Uses	Source
2014	MARIA CALIA	Cole Information
	MICHAEL JENNY	Cole Information
2010	LISA CALIA	Cole Information
2005	LISA CALIA	Cole Information
2002	CALIALiaa	Haines Company
2000	MARK SOLTYNSKI	Cole Information
1995	SOLTYNSKI, MARK	Cole Information
1992	Davids J M	Pacific Bell
	DAVIDS, J M	Cole Information

19 ELMBROOK

Year	Uses	Source
2002	6 FEEMich 9el	Haines Company

ELMBROOK # 52

15 ELMBROOK # 52

Year	Uses	Source
2020	JOHN MIDDLETON	EDR Digital Archive

ELMBROOK # 54

5 ELMBROOK # 54

Year	Uses	Source
2020	MOGADAM ATI	EDR Digital Archive

ELMBROOK # 58

10 ELMBROOK # 58

Year	Uses	Source
2020	HUDSON BRADLEY	EDR Digital Archive

FINDINGS

ELMBROOK # 60

2 ELMBROOK # 60

Year	Uses	Source
2020	AIDA CLARK	EDR Digital Archive

ELMBROOK ST

1 ELMBROOK ST

Year	Uses	Source
1997	Von Handorf Robert	Pacific Bell

2 ELMBROOK ST

Year	Uses	Source
1997	Russ Donna L	Pacific Bell
	Russ Donna	Pacific Bell

5 ELMBROOK ST

Year	Uses	Source
1997	Endresen Shirley J	Pacific Bell

8 ELMBROOK ST

Year	Uses	Source
1997	Mc Nally S	Pacific Bell

11 ELMBROOK ST

Year	Uses	Source
1997	Dawson John T	Pacific Bell

GLENOAKS

1 GLENOAKS

Year	Uses	Source
2020	MEGHAN KEY	EDR Digital Archive
2014	CHRIS CRILLY	Cole Information
2010	MARK RUGGIERO	Cole Information
2005	JAMES GRIECO	Cole Information
1995	RUGGIERO, MARK A	Cole Information

2 GLENOAKS

Year	Uses	Source
2020	BRETT QUARLES	EDR Digital Archive
2014	DEBRA KLINGENSMITH	Cole Information
2010	DEBRA KLINGENSMITH	Cole Information
2005	ROBIN MCCOMB-GOMEZ	Cole Information
2000	ROBIN GOMEZ	Cole Information
	ROBIN MCCOMB	Cole Information

3 GLENOAKS

Year	Uses	Source
2020	KELLY EATON	EDR Digital Archive
2014	KELLY EATON	Cole Information
	CHARLENE EASTON	Cole Information
	EASTON CHARLENE	Cole Information
	AARON MAGUIRE	Cole Information
2010	AARON MAGUIRE	Cole Information
2005	AARON ABRAMSON	Cole Information
2000	JUDY BARELA	Cole Information
1995	NOFTSGER, VIVIAN S	Cole Information

4 GLENOAKS

Year	Uses	Source
2014	DAVID JONES	Cole Information
2010	JULIA BAHADORI	Cole Information
	SARAH JONES	Cole Information
2005	VICTORIA CARRERA	Cole Information
2000	JULIA BAHADORI	Cole Information
	V CARRERRA	Cole Information

5 GLENOAKS

Year	Uses	Source
2020	EVELYN BLANCO	EDR Digital Archive
	BEAU STEVENS	EDR Digital Archive
2014	HASSAN AMIN	Cole Information

Year	Uses	Source
2010	LLOYD POWELL	Cole Information
	JULIE KIM	Cole Information
2005	JULIE KIM	Cole Information
2000	BEJAN AMINI	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

6 GLENOAKS

Year	Uses	Source
2014	ALLAHYAR GHAYSAR	Cole Information
2010	ALLAHYAR GHAYSAR	Cole Information
2005	CYNTHIA BEGIN	Cole Information
2000	CYNTHIA BEGIN	Cole Information

7 GLENOAKS

Year	Uses	Source
2020	CELESTE JOHANSON	EDR Digital Archive
2010	PATRICK JOHNSON	Cole Information
2005	PATRICK JOHNSON	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Crowl M &J	Pacific Bell
	CROWL, MATTHEW	Cole Information

8 GLENOAKS

Year	Uses	Source
2020	GALEN OSUMI	EDR Digital Archive
	KRISTEN LOPEZ	EDR Digital Archive
2014	GALEN OSUMI	Cole Information
2010	GALEN OSUMI	Cole Information
2005	GALEN OSUMI	Cole Information
2000	GALEN OSUMI	Cole Information
	OSUMI AKITOSHI	Cole Information

FINDINGS

9 GLENOAKS

Year	Uses	Source
2020	FRANCIS BELMONTE	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2005	FRANCIS BELMONTE	Cole Information
2000	CYNTHIA BELMONTE	Cole Information
1995	BELMONTE, CYNTHIA D	Cole Information

10 GLENOAKS

Year	Uses	Source
2020	RENE QUINONES	EDR Digital Archive
	JOSEPH JACOBS	EDR Digital Archive
	LINDSAY JACOBS	EDR Digital Archive
2014	MALIA COUSIMANO	Cole Information
	FRANK CABRERA	Cole Information
2010	RENE QUINONES	Cole Information
	MALIA COUSIMANO	Cole Information
2005	JENNIFER BULLINGTON	Cole Information
2000	ANTHONY ROMERO	Cole Information

11 GLENOAKS

Year	Uses	Source
2020	KEVIN SPURR	EDR Digital Archive
2014	KATRINA SPURR	Cole Information
2005	KEVIN SPURR	Cole Information
2000	KEVIN SPURR	Cole Information

12 GLENOAKS

Year	Uses	Source
2020	HENRY CABALLERO	EDR Digital Archive
	AMIR BAHMAN	EDR Digital Archive
2014	AMIR BAHMAN	Cole Information
2010	RICHARD CARR	Cole Information
	AMIR BAHMAN	Cole Information
2005	AMIR BAHMAN	Cole Information

Year	Uses	Source
2000	MARY HARRIS	Cole Information

13 GLENOAKS

Year	Uses	Source
2010	TOSHIMI HRKEL	Cole Information
2005	SANDRA CHASE	Cole Information
2000	SANDRA CHASE	Cole Information
1995	CALDARONELLO, JOE	Cole Information

14 GLENOAKS

Year	Uses	Source
2014	MICHELLE ANTENESSE	Cole Information
2010	DEBRA MORTON	Cole Information
2005	DEBRA MORTON	Cole Information
2000	DEBRA MORTON	Cole Information

15 GLENOAKS

Year	Uses	Source
2020	JULIE MACY	EDR Digital Archive
2014	JULIE MACY	Cole Information
2010	JULIE MACY	Cole Information
2005	JULIE MACY	Cole Information
2000	J MACY	Cole Information
1995	MACY, J	Cole Information
1992	Macy J	Pacific Bell
	MACY, J	Cole Information

16 GLENOAKS

Year	Uses	Source
2020	TRACY HERNANDEZ	EDR Digital Archive
2014	TRACY HERNANDEZ	Cole Information
2010	TRACY HERNANDEZ	Cole Information
	ALBERT MONROY	Cole Information
2005	TRACY HERNANDEZ	Cole Information
2000	LINDA TOVEY	Cole Information

FINDINGS

GLENOAKS # 14

6 GLENOAKS # 14

Year	Uses	Source
2020	SHERNAZ MERCHANT	EDR Digital Archive

GLENOAKS # 19

3 GLENOAKS # 19

Year	Uses	Source
2020	TASIA REGOS	EDR Digital Archive

GLENOAKS # 20

1 GLENOAKS # 20

Year	Uses	Source
2020	DIANE KEY	EDR Digital Archive

GLENOAKS # 23

5 GLENOAKS # 23

Year	Uses	Source
2020	MANDANA AMIN	EDR Digital Archive

GLENOAKS ST

1 GLENOAKS ST

Year	Uses	Source
2002	GRIECOJames	Haines Company

2 GLENOAKS ST

Year	Uses	Source
2002	GOMEZ Robin	Haines Company

3 GLENOAKS ST

Year	Uses	Source
2002	BARELAJudy	Haines Company

FINDINGS

4 GLENOAKS ST

Year	*Uses*	*Source*
2002	CARRERA Vicorna	Haines Company

5 GLENOAKS ST

Year	*Uses*	*Source*
2002	AMINIBelan	Haines Company
	AMNI Belan	Haines Company
	OPLETMae K	Haines Company

6 GLENOAKS ST

Year	*Uses*	*Source*
2002	BEGINCynlhra	Haines Company

7 GLENOAKS ST

Year	*Uses*	*Source*
2002	FELDMANDavid	Haines Company

8 GLENOAKS ST

Year	*Uses*	*Source*
2002	OSUMi Galen	Haines Company

9 GLENOAKS ST

Year	*Uses*	*Source*
2002	BELMONTECynthia	Haines Company

10 GLENOAKS ST

Year	*Uses*	*Source*
2002	COUSIMANOMalia	Haines Company

11 GLENOAKS ST

Year	*Uses*	*Source*
2002	SPLURR Kevin	Haines Company

12 GLENOAKS ST

Year	*Uses*	*Source*
2002	IPCola	Haines Company

13 GLENOAKS ST

Year	Uses	Source
2002	CHASES 9ndra	Haines Company

14 GLENOAKS ST

Year	Uses	Source
2002	SMORTONDesbra	Haines Company

15 GLENOAKS ST

Year	Uses	Source
2002	MACYJ	Haines Company
1997	Macy J	Pacific Bell

GOLF DR

38 GOLF DR

Year	Uses	Source
2020	EMMA REED	EDR Digital Archive
	KIM REED	EDR Digital Archive
	ROB REED	EDR Digital Archive
2014	ROB REED	Cole Information

39 GOLF DR

Year	Uses	Source
2020	TAHEREH JAHED	EDR Digital Archive
	MICHAEL KHODA	EDR Digital Archive
	SIAMAK JAFROUDI	EDR Digital Archive
	TAHEREH NOROUZI	EDR Digital Archive
2014	ROBERT ORNELLAS	Cole Information

40 GOLF DR

Year	Uses	Source
2020	RYON HARMS	EDR Digital Archive
2014	BRIAN KEMP	Cole Information

FINDINGS

41 GOLF DR

Year	Uses	Source
2020	DOUGLAS GRANT	EDR Digital Archive
2014	QIANG MENG	Cole Information

42 GOLF DR

Year	Uses	Source
2020	MEHUL PEMA	EDR Digital Archive
	AVANI GOKALDAS	EDR Digital Archive
2014	MEHUL PEMA	Cole Information

43 GOLF DR

Year	Uses	Source
2020	ARASH NARAGHI	EDR Digital Archive
	ARSHIA NAZEM	EDR Digital Archive
	AZITA NARAGHI	EDR Digital Archive
	ARVIN NARAGHI	EDR Digital Archive
2014	ARASH NARAGHI	Cole Information

44 GOLF DR

Year	Uses	Source
2014	GILBERT LAM	Cole Information

45 GOLF DR

Year	Uses	Source
2020	EMIN KAYIRAN	EDR Digital Archive
	STEPHEN CLEMENTS	EDR Digital Archive
2014	STEPHEN CLEMENTS	Cole Information

47 GOLF DR

Year	Uses	Source
2020	TIMOTHY HSIAO	EDR Digital Archive
	HSIAO TAU	EDR Digital Archive
2014	DAI VU	Cole Information

FINDINGS

48 GOLF DR

Year	Uses	Source
2020	SHANNON FOULADCHI	EDR Digital Archive
	KOUROSH FOULADCHI	EDR Digital Archive
2014	KOUROSH FOULADCHI	Cole Information

49 GOLF DR

Year	Uses	Source
2020	TEOFISTA JORDAN	EDR Digital Archive
	SCOTT JORDAN	EDR Digital Archive
	CARMELITA JORDAN	EDR Digital Archive
	ALEXIS JOHNSON	EDR Digital Archive
2014	SCOTT JORDAN	Cole Information

50 GOLF DR

Year	Uses	Source
2020	ANDREW CHEN	EDR Digital Archive
2014	ANDREW CHEN	Cole Information

51 GOLF DR

Year	Uses	Source
2020	MARIO IBRAHIM	EDR Digital Archive
	KYRILLOS IBRAHIM	EDR Digital Archive
	RAOUF IBRAHIM	EDR Digital Archive
	MATTHEW IBRAHIM	EDR Digital Archive
	SHEREEN IBRAHIM	EDR Digital Archive
2014	KYRILLOS IBRAHIM	Cole Information

52 GOLF DR

Year	Uses	Source
2020	DAWN RAMSDEN	EDR Digital Archive
	JAMES RAMSDEN	EDR Digital Archive
2014	JASON CLARK	Cole Information

54 GOLF DR

Year	Uses	Source
2020	PETRA RYAN	EDR Digital Archive
	L RYAN SHAUGHNESSY	EDR Digital Archive
	SHAUGHNESSY RYAN	EDR Digital Archive
2014	SHAUGHNESSY RYAN	Cole Information

HILLROSE

1 HILLROSE

Year	Uses	Source
2014	MARIA SABIO	Cole Information
2010	LOUIE GALA	Cole Information
2005	LOUIE GALA	Cole Information
2000	SHARON WANG	Cole Information

2 HILLROSE

Year	Uses	Source
2020	PAUL WILLIAMS	EDR Digital Archive
2014	PAUL WILLIAMS	Cole Information
2005	MORGAN BUTLER	Cole Information
2000	CAROLYN LEANZA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

3 HILLROSE

Year	Uses	Source
2020	SAKINEH ZAREI	EDR Digital Archive
2014	DON BRAYMER	Cole Information
2010	DON BRAYMER	Cole Information
2005	HALINA STANALAND	Cole Information
2000	JOHN MUNROE	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

4 HILLROSE

Year	Uses	Source
2020	ROBERT MCCARTHY	EDR Digital Archive

Year	Uses	Source
2020	ALYSSA NAMBIAR	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	AURORA PELLECCHIA	Cole Information
2005	MARISA DECOLLIBUS	Cole Information
2000	GEMMA MURRAY	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

5 HILLROSE

Year	Uses	Source
2020	JYCT LLC	EDR Digital Archive
	ARAM TATSUNIAN	EDR Digital Archive
	JEAN THAM	EDR Digital Archive
	ALICE TATSUNIAN	EDR Digital Archive
2014	VLADIMIR CHEBOTAREV	Cole Information
2010	ARAM TATUSIAN	Cole Information
2005	ARAM TATUSIAN	Cole Information
2000	ARAM TATUSIAN	Cole Information
1995	TATUSIAN, ARAM	Cole Information

6 HILLROSE

Year	Uses	Source
2014	WILLIAM KAIL	Cole Information
2010	JOHN BAZZO	Cole Information
2005	SHANNEN HAYMES	Cole Information
2000	SHARON HAYMES	Cole Information
1995	CARTER, JEFF	Cole Information
1992	CARTER, JEFF	Cole Information

7 HILLROSE

Year	Uses	Source
2020	MILTON BRANNON	EDR Digital Archive
	LISA BRANNON	EDR Digital Archive
	LISA HARDY	EDR Digital Archive
2014	REMO LARRY	Cole Information

Year	Uses	Source
2010	LARRY REMO	Cole Information
2005	LARRY REMO	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

8 HILLROSE

Year	Uses	Source
2020	JODY KORHONEN	EDR Digital Archive
2014	JODY KORHONEN	Cole Information
2010	JODY KORHONEN	Cole Information
2005	JODY KORHONEN	Cole Information
2000	JODY KORHONEN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

9 HILLROSE

Year	Uses	Source
2020	MICHAEL MARTINEZ	EDR Digital Archive
2014	NAOMI YANASHIMA	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	ROBERT WHEELER	Cole Information
2000	MELLISA ADAMS	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

10 HILLROSE

Year	Uses	Source
2020	GHOBADIFARD FARIBA	EDR Digital Archive
	FIROOZ EFTEKHAR	EDR Digital Archive
2014	WILLIAM PROPPER	Cole Information
2010	TERESA PROPPER	Cole Information
2005	WILLIAM PROPPER	Cole Information
2000	SARA LANCE	Cole Information
1992	UPTEGRAFT, REX A	Cole Information

FINDINGS

11 HILLROSE

Year	Uses	Source
2020	TAGHI ETTEKAL	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	MARK ARCHAMBEAULT	Cole Information
2005	LINDA WILSON	Cole Information
2000	D CLARK	Cole Information
1995	ETTEKAL, TAGHI	Cole Information
1992	ETTEKAL, TAGHI	Cole Information

12 HILLROSE

Year	Uses	Source
2020	BRENNA RYAN	EDR Digital Archive
	JOHN COFFMAN	EDR Digital Archive
2014	BRENNA RYAN	Cole Information
2005	BRENNA RYAN	Cole Information
2000	BRENNA RYAN	Cole Information
1995	TAYLOR, CHARLES E	Cole Information
1992	SCHLEGER, RAY	Cole Information

13 HILLROSE

Year	Uses	Source
2020	NICOLAS NEWQUIST	EDR Digital Archive
	GUNILLA NEWQUIST	EDR Digital Archive
	LINNEA NEWQUIST	EDR Digital Archive
2014	PROFESSIONAL SIGNING SERIVES LLC	Cole Information
	OCCUPANT UNKNOWN	Cole Information
2010	RACHAEL MALOOF	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

14 HILLROSE

Year	Uses	Source
2020	MARY PIERCE	EDR Digital Archive
	CHELSEA GAAL	EDR Digital Archive

Year	Uses	Source
2020	MICHAEL PIERCE	EDR Digital Archive
	COLTON GAAL	EDR Digital Archive
	STEPHANIE GAAL	EDR Digital Archive
2010	BENNIE GOODING	Cole Information
2005	MICHAEL PIERCE	Cole Information
2000	MICHAEL PIERCE	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

15 HILLROSE

Year	Uses	Source
2020	ANDREA JACOBS	EDR Digital Archive
	FRANCESCO NESTA	EDR Digital Archive
2014	MARK TAKLA	Cole Information
2010	JOHN TRULIO	Cole Information
2005	JOAN TRULIO	Cole Information
2000	J TRULIO	Cole Information
1995	TRULIO, JOHN	Cole Information
1992	TRULIO, JOHN	Cole Information

16 HILLROSE

Year	Uses	Source
2020	MYRTLE FRANZ	EDR Digital Archive
2014	SUSAN WALLACE	Cole Information
2010	PAPILLON DESIGNS	Cole Information
	SUSAN WALLACE	Cole Information
2005	SUSAN WALLACE	Cole Information
2000	SUSAN WALLACE	Cole Information
1995	BURT, LYNETTE	Cole Information
1992	BURT, LYNETTE	Cole Information

HILLROSE # 105

1 HILLROSE # 105

Year	Uses	Source
2020	ANH-CHI VU	EDR Digital Archive

FINDINGS

HILLROSE DR

1 HILLROSE DR

Year	Uses	Source
2002	GALALea	Haines Company

2 HILLROSE DR

Year	Uses	Source
2002	KIRIAKGeorg	Haines Company

3 HILLROSE DR

Year	Uses	Source
2002	ARNESONJames	Haines Company
	MAMAKOS Karen	Haines Company

4 HILLROSE DR

Year	Uses	Source
2002	MURRAYGenme	Haines Company

5 HILLROSE DR

Year	Uses	Source
2002	ARMSTRONG Sco O	Haines Company
	TATUSIANAram	Haines Company

6 HILLROSE DR

Year	Uses	Source
2002	HAYMESSharon	Haines Company

7 HILLROSE DR

Year	Uses	Source
2002	REMOLarry	Haines Company

8 HILLROSE DR

Year	Uses	Source
2002	KORHONENJody D	Haines Company

9 HILLROSE DR

Year	Uses	Source
2002	ONELSON Gary	Haines Company

Year	Uses	Source
2002	ADAMSAndre	Haines Company

10 HILLROSE DR

Year	Uses	Source
2002	LANCE Roger	Haines Company
	LANCESara	Haines Company
1992	Santa Cruz Thomas & Kelly	Pacific Bell

11 HILLROSE DR

Year	Uses	Source
2002	SMITH Sleesn	Haines Company
1992	Ettekal Taghi	Pacific Bell
	12 Schleger Ray	Pacific Bell

12 HILLROSE DR

Year	Uses	Source
2002	RYANBrenna	Haines Company

13 HILLROSE DR

Year	Uses	Source
2002	ORC 90 WSKI Michael	Haines Company

14 HILLROSE DR

Year	Uses	Source
2002	PIERCE 9 Micael	Haines Company

15 HILLROSE DR

Year	Uses	Source
2002	SHAWKevin	Haines Company
	TRULIOJ	Haines Company
1992	Trulio J	Pacific Bell

16 HILLROSE DR

Year	Uses	Source
2002	WALLACE Susan A	Haines Company

18 HILLROSE DR

Year	Uses	Source
2002	HEPPY Gary	Haines Company

19 HILLROSE DR

Year	Uses	Source
2002	SKINNER David	Haines Company

23 HILLROSE DR

Year	Uses	Source
2002	KEEFECandace	Haines Company
	OKEEFE George	Haines Company

25 HILLROSE DR

Year	Uses	Source
2002	HODSON Glenn	Haines Company

30 HILLROSE DR

Year	Uses	Source
2002	OFOSTER Sean	Haines Company

31 HILLROSE DR

Year	Uses	Source
2002	PAFFRATH Greg	Haines Company
	OPAFFRATH Greg	Haines Company

32 HILLROSE DR

Year	Uses	Source
2002	POPPLE Anthony	Haines Company

35 HILLROSE DR

Year	Uses	Source
1992	Kamiyama K	Pacific Bell
	6 Carter Jeff	Pacific Bell

40 HILLROSE DR

Year	Uses	Source
2002	ZOLONDEKSteven	Haines Company

42 HILLROSE DR

Year	Uses	Source
2002	0 TARZIAhmad	Haines Company

46 HILLROSE DR

Year	Uses	Source
2002	STONECIPHERSteve	Haines Company

49 HILLROSE DR

Year	Uses	Source
2002	BRADFORD Stephen	Haines Company

54 HILLROSE DR

Year	Uses	Source
2002	ROSENTHAL leslre	Haines Company
	ROSENTHAL Mark	Haines Company
	WARE Anthony	Haines Company

57 HILLROSE DR

Year	Uses	Source
2002	LEWISS	Haines Company

60 HILLROSE DR

Year	Uses	Source
2002	GOTROJeffrey	Haines Company

64 HILLROSE DR

Year	Uses	Source
2002	OPETRUSCH Chades	Haines Company

HILLROSE ST

8 HILLROSE ST

Year	Uses	Source
1997	Korhonen Jody	Pacific Bell

15 HILLROSE ST

Year	Uses	Source
1997	Trulio J	Pacific Bell

16 HILLROSE ST

Year	Uses	Source
1997	Wallace Susan A	Pacific Bell

KERRWOOD

1 KERRWOOD

Year	Uses	Source
2020	STEVEN PLACE	EDR Digital Archive
	SUSAN PLACE	EDR Digital Archive
2014	STEVEN PLACE	Cole Information
2010	STEVEN PLACE	Cole Information
2005	STEVEN PLACE	Cole Information
2000	S PLACE	Cole Information
1995	PLACE, STEVEN	Cole Information
1992	PLACE, STEVEN	Cole Information

3 KERRWOOD

Year	Uses	Source
2020	MICAELA RAZO	EDR Digital Archive
2010	NASSER TARAZI	Cole Information
2000	LAURA LHOTSKY	Cole Information

5 KERRWOOD

Year	Uses	Source
2020	BRIAN PINGREE	EDR Digital Archive
	RYAN PHILLIPS	EDR Digital Archive
2014	ERIKO PHILLIPS	Cole Information
2010	CHARLES PHILLIPS	Cole Information
2000	RAYMOND SOR	Cole Information
1995	MCCLURE, K L	Cole Information

7 KERRWOOD

Year	Uses	Source
2020	NANCY PAULEY	EDR Digital Archive
2014	NICK PAULEY	Cole Information

Year	Uses	Source
2010	NICK PAULEY	Cole Information
2005	NICK PAULEY	Cole Information
2000	NANCY PAULEY	Cole Information
1995	PAULEY, NANCY	Cole Information

9 KERRWOOD

Year	Uses	Source
2014	HUGH IRISE	Cole Information
2010	ROBERT BENNETT	Cole Information
2005	BRIAN GRAVES	Cole Information
2000	BRYAN PRESLEY	Cole Information
1995	PRESLEY, BRYAN	Cole Information
1992	PRESLEY, BRYAN	Cole Information

11 KERRWOOD

Year	Uses	Source
2020	RICH BARONE	EDR Digital Archive
2014	RICHARD BARONE	Cole Information
2010	RICHARD BARONE	Cole Information
2005	RICHARD BARONE	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

13 KERRWOOD

Year	Uses	Source
2014	BABAK PEJMAN	Cole Information
2010	BABAK PEJMAN	Cole Information
2000	MILES KETCHUM	Cole Information
1995	MCGINNIS, JUDY A	Cole Information

15 KERRWOOD

Year	Uses	Source
2020	WILLIAM ECKENSTEIN	EDR Digital Archive
2014	LAURIE TRAFICANTE	Cole Information
2010	JENNY AMOS	Cole Information

Year	Uses	Source
2010	PIERRE LAPISTO	Cole Information
2005	JESSE MARTINEZ	Cole Information
1995	RICH, PATRICE	Cole Information
1992	NAZLIOGLU, VREJ	Cole Information

KERRWOOD # 27

9 KERRWOOD # 27

Year	Uses	Source
2020	ROBERT KALMBACH	EDR Digital Archive

KERRWOOD ST

1 KERRWOOD ST

Year	Uses	Source
2002	PLACES	Haines Company

3 KERRWOOD ST

Year	Uses	Source
2002	LHOTSKY Laura	Haines Company
	SHELLODanel	Haines Company

5 KERRWOOD ST

Year	Uses	Source
2002	SOR Raymond	Haines Company

7 KERRWOOD ST

Year	Uses	Source
2002	PAULEY Nancy	Haines Company

9 KERRWOOD ST

Year	Uses	Source
2002	GRAVES Brian	Haines Company
1997	Presley Bryan	Pacific Bell
1992	Presley Bryan	Pacific Bell

11 KERRWOOD ST

Year	Uses	Source
2002	BARONERchard	Haines Company

13 KERRWOOD ST

Year	Uses	Source
2002	KETCHUM Miles	Haines Company
1997	Rhoades Judy A	Pacific Bell

15 KERRWOOD ST

Year	Uses	Source
2002	MARTINEZJesse	Haines Company
1992	Nazlioglu Vrej	Pacific Bell

35 KERRWOOD ST

Year	Uses	Source
1992	CORPORATION	Pacific Bell

MARIGOLD

1 MARIGOLD

Year	Uses	Source
2020	HOLLY WATSON	EDR Digital Archive
	ALAN WATSON	EDR Digital Archive
2014	MALEK KHOURI	Cole Information
2010	MALEK KHOURI	Cole Information
	ANTHONY RINALDI	Cole Information
2005	STEVEN DEOL	Cole Information

3 MARIGOLD

Year	Uses	Source
2020	DANIEL DOTY	EDR Digital Archive
	PATTY DOTY	EDR Digital Archive
2014	DANIEL DOTY	Cole Information
2010	DANIEL DOTY	Cole Information
2005	DANIEL DOTY	Cole Information

4 MARIGOLD

Year	*Uses*	*Source*
2020	KEVIN MUELLER	EDR Digital Archive
	HARRIET MUELLER	EDR Digital Archive
	COREEN MUELLER	EDR Digital Archive
2014	KEVIN MUELLER	Cole Information
2010	KEVIN MUELLER	Cole Information
2005	JOSE MOLINA	Cole Information
1995	BLANKS, SHERYL	Cole Information

MARIGOLD ST

1 MARIGOLD ST

Year	*Uses*	*Source*
2002	ODEOLBerniece	Haines Company

3 MARIGOLD ST

Year	*Uses*	*Source*
2002	0D 0 TY Danvel	Haines Company

4 MARIGOLD ST

Year	*Uses*	*Source*
2002	MOLINAJo So	Haines Company

OLD MISSION RD

34 OLD MISSION RD

Year	*Uses*	*Source*
2020	GRAEME GEDDES	EDR Digital Archive
2014	CHRISTINE MORRISON	Cole Information
2010	JEFFREY COLBERT	Cole Information

35 OLD MISSION RD

Year	*Uses*	*Source*
2010	KENT BREAZEALE	Cole Information

36 OLD MISSION RD

Year	Uses	Source
2020	ROBIN PENGELLY	EDR Digital Archive
	TOMOKO PENGELLY	EDR Digital Archive
	TSUBOI PENGELLY	EDR Digital Archive
2014	THOMAS MILLER	Cole Information
2010	THOMAS MILLER	Cole Information

37 OLD MISSION RD

Year	Uses	Source
2010	MICHELLE WEINANDY	Cole Information

38 OLD MISSION RD

Year	Uses	Source
2020	DEBRA WEEMS	EDR Digital Archive
	DAVID WEEMS	EDR Digital Archive
2014	DAVID WEEMS	Cole Information
2010	DAVID WEEMS	Cole Information

39 OLD MISSION RD

Year	Uses	Source
2010	ROBERT ORNELLAS	Cole Information

40 OLD MISSION RD

Year	Uses	Source
2020	PATRICK QUEALY	EDR Digital Archive
	KATHRYN WOLTER	EDR Digital Archive
2014	ROBERT KNISELY	Cole Information
2010	PATRICK QUEALY	Cole Information

41 OLD MISSION RD

Year	Uses	Source
2010	QIANG MENG	Cole Information

42 OLD MISSION RD

Year	Uses	Source
2020	VODANA	EDR Digital Archive

Year	Uses	Source
2014	DONG CHOI	Cole Information
2010	DONG CHOI	Cole Information

43 OLD MISSION RD

Year	Uses	Source
2010	ARASH NARAGHI	Cole Information

44 OLD MISSION RD

Year	Uses	Source
2020	TODD DRESMAL	EDR Digital Archive
2014	KYLE CAPLES	Cole Information
2010	MIKE CAPLES	Cole Information

45 OLD MISSION RD

Year	Uses	Source
2010	STEPHEN CLEMENTS	Cole Information

46 OLD MISSION RD

Year	Uses	Source
2020	JASON MONTBLANC	EDR Digital Archive
	HEIDI MONTBLANC	EDR Digital Archive
2010	JONATHAN LEW	Cole Information

48 OLD MISSION RD

Year	Uses	Source
2020	GABRIELLE GARCIA	EDR Digital Archive
	GABRIELLE BRADBURY	EDR Digital Archive
	JAE KANG	EDR Digital Archive
2014	CHRISTINE MACGREGOR	Cole Information
2010	CHRISTINE THOMPSON	Cole Information

49 OLD MISSION RD

Year	Uses	Source
2010	SCOTT JORDAN	Cole Information

FINDINGS

51 OLD MISSION RD

Year	*Uses*	*Source*
2010	RAOUF IBRAHIM	Cole Information

PINE AS

6 PINE AS

Year	*Uses*	*Source*
1980	Brandis Carl M W	Pacific Telephone

PINE OAK

1 PINE OAK

Year	*Uses*	*Source*
2002	SMALLAmy	Haines Company

2 PINE OAK

Year	*Uses*	*Source*
2002	HUGHES Mchael	Haines Company
1992	Yeager John & Evelyn	Pacific Bell

3 PINE OAK

Year	*Uses*	*Source*
2002	1 PRUITTS	Haines Company
1992	Upton C L	Pacific Bell

4 PINE OAK

Year	*Uses*	*Source*
2002	HARTLINE Dense	Haines Company
	HARTLINE Thomas	Haines Company

5 PINE OAK

Year	*Uses*	*Source*
2002	CUNNINGHAML	Haines Company
1992	Cunningham Linda B	Pacific Bell

FINDINGS

6 PINE OAK

Year	Uses	Source
2002	MAXONKe Ey	Haines Company
1992	Hoyt Bradley C	Pacific Bell

7 PINE OAK

Year	Uses	Source
2002	PE 9 TUOHN Sue	Haines Company

8 PINE OAK

Year	Uses	Source
2002	0 LIEBLGw ynne	Haines Company

9 PINE OAK

Year	Uses	Source
2002	RINDAHL Rhannon	Haines Company
	RINDAHL Rhannon	Haines Company

10 PINE OAK

Year	Uses	Source
2002	LEWIS Elzabeth	Haines Company

11 PINE OAK

Year	Uses	Source
2002	MONTGOMERY Ch Es	Haines Company

12 PINE OAK

Year	Uses	Source
2002	DOBOSZEd	Haines Company
	GEVELHOFFHans	Haines Company

13 PINE OAK

Year	Uses	Source
2002	MYERBe lln	Haines Company

14 PINE OAK

Year	Uses	Source
2002	WALKERLacy	Haines Company

Year	Uses	Source
1992	Watson Donald	Pacific Bell

15 PINE OAK

Year	Uses	Source
2002	METZGERM	Haines Company

16 PINE OAK

Year	Uses	Source
2002	LEEGregory	Haines Company

PINE OAK ST

5 PINE OAK ST

Year	Uses	Source
1997	Cunningham L	Pacific Bell

6 PINE OAK ST

Year	Uses	Source
1997	Hoyt Bradley C	Pacific Bell

PINEOAK

1 PINEOAK

Year	Uses	Source
2020	DONLYN KOTT	EDR Digital Archive
2014	DONLYN KOTT	Cole Information
2010	THOMAS MOSS	Cole Information
2005	AMY SMALL	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information

2 PINEOAK

Year	Uses	Source
2020	SHEILA REYES	EDR Digital Archive
2014	SHEILA REYES	Cole Information
	MONIKA SILLO	Cole Information
2010	SHEILA REYES	Cole Information
2005	ALINE KECHEJIAN	Cole Information

Year	Uses	Source
2000	R HUGHES	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

3 PINEOAK

Year	Uses	Source
2020	VICKI HAHN	EDR Digital Archive
	QUINCY KELLY	EDR Digital Archive
	CHARLES HAHN	EDR Digital Archive
2014	VICKY HAHN	Cole Information
2010	VICKI HAHN	Cole Information
2000	CHRISTY UPTON	Cole Information

4 PINEOAK

Year	Uses	Source
2020	HOSSIEN DEZFOOLYZADEH	EDR Digital Archive
	RYAN DEZFOOLYZADEH	EDR Digital Archive
	DEBRA DEZFOOLYZADEH	EDR Digital Archive
	SHAHRZAD AGHAYOUSEF	EDR Digital Archive
2014	TAMARA DOUGALL	Cole Information
	C ELY	Cole Information
2010	DEBI GRANVILLE	Cole Information
2005	DEBI GRANVILLE	Cole Information
2000	THOMAS HARTLINE	Cole Information

5 PINEOAK

Year	Uses	Source
2020	KENNETH BROOME	EDR Digital Archive
	LINDA CUNNINGHAM	EDR Digital Archive
2014	LINDA CUNNINGHAM	Cole Information
2010	LINDA CUNNINGHAM	Cole Information
2005	LINDA CUNNINGHAM	Cole Information
2000	LINDA CUNNINGHAM	Cole Information
1995	CUNNINGHAM, LINDA B	Cole Information
1992	CUNNINGHAM, LINDA B	Cole Information

6 PINEOAK

Year	Uses	Source
2014	KELLY MAXON	Cole Information
2010	KELLY MAXON	Cole Information
2005	KELLY MAXON	Cole Information
2000	KELLY MAXON	Cole Information
1995	HOYT, BRADLEY C	Cole Information
1992	HOYT, BRADLEY C	Cole Information

7 PINEOAK

Year	Uses	Source
2020	NUCHAREE SAMSEL	EDR Digital Archive
2014	NUCHAREE SAMSEL	Cole Information
2010	NUCHAREE SAMSEL	Cole Information
2005	AARON ROBBINS	Cole Information
	NUCHAREE SAMSEL	Cole Information
2000	JANNA ALCORN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

8 PINEOAK

Year	Uses	Source
2020	ANTONIO JONES	EDR Digital Archive
	GLEN ROCHELEAU	EDR Digital Archive
	NADINE ROCHELEAU	EDR Digital Archive
2014	GLEN ROCHELEAU	Cole Information
2010	GLEN ROCHELEAU	Cole Information
2005	ARON BROWN	Cole Information
2000	GWYNNE LIEBL	Cole Information
1995	RICE, LEO	Cole Information

9 PINEOAK

Year	Uses	Source
2020	TINA VANDERHORST	EDR Digital Archive
2014	DYLAN SMITH	Cole Information
	JINA SONG	Cole Information

Year	Uses	Source
2010	BARBARA OGBURN	Cole Information
2005	FRED BAHRAMI	Cole Information
2000	MARK RINDAHL	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

10 PINEOAK

Year	Uses	Source
2014	BRIAN LEYBA	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

11 PINEOAK

Year	Uses	Source
2020	DIEGO MAGRIN	EDR Digital Archive
2014	YONG KU	Cole Information
2005	ERNALYN MONTGOMERY	Cole Information
2000	ERWIN CENTENO	Cole Information
1992	BRUKETTA, JOSEPH	Cole Information

12 PINEOAK

Year	Uses	Source
2014	ED DOBOSZ	Cole Information
	TUAN TRUONG	Cole Information
2010	MARK FAIRBAIRN	Cole Information
2005	MARK FAIRBAIRN	Cole Information
2000	HANS GEVELHOFF	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

13 PINEOAK

Year	Uses	Source
2020	PAUL GLASS	EDR Digital Archive
2014	PAUL GLASS	Cole Information
2010	RALPH RUSSO	Cole Information
2005	MARY JOHNSON	Cole Information
2000	BELKIS MYER	Cole Information

Year	Uses	Source
1995	OCCUPANT UNKNOWNN	Cole Information

14 PINEOAK

Year	Uses	Source
2020	LACY WALKER	EDR Digital Archive
	JESSE WALKER	EDR Digital Archive
2014	SANDRA SMITH-HOLAAS	Cole Information
2010	LACY WALKER	Cole Information
	SIMON CARTER	Cole Information
2005	LACY WALKER	Cole Information
2000	LACY WALKER	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	WATSON, DONALD	Cole Information

15 PINEOAK

Year	Uses	Source
2020	RICHARD MIESZKOWSKI	EDR Digital Archive
2014	FRANCESCA CASTGLIONE	Cole Information
2010	FRANCESCA CASTIGLIONE	Cole Information
2005	FRANCESCA CASTIGLIONE	Cole Information
2000	MARY METZGER	Cole Information
1995	METZGER, MARY	Cole Information
1992	METZGER, M	Cole Information

16 PINEOAK

Year	Uses	Source
2020	GREGORY LEE	EDR Digital Archive
	KAREN LEE	EDR Digital Archive
2014	GREGORY LEE	Cole Information
2010	GREGORY LEE	Cole Information
2005	GREGORY LEE	Cole Information

FINDINGS

PINEOAK # 97

1 PINEOAK # 97

Year	Uses	Source
2020	ERIC SMALL	EDR Digital Archive

PINOS

1 PINOS

Year	Uses	Source
2002	STAHURA Mchael	Haines Company
	WEAVE 8 Valett	Haines Company

2 PINOS

Year	Uses	Source
2002	OBURKESleven	Haines Company

3 PINOS

Year	Uses	Source
2002	CASTLETON Lerda	Haines Company
	OCASTLETONSlan	Haines Company

4 PINOS

Year	Uses	Source
2002	TAMMINEN Roberd	Haines Company

6 PINOS

Year	Uses	Source
2002	HSUYS	Haines Company

8 PINOS

Year	Uses	Source
2002	0 HAMMANAnn	Haines Company
	HAMMAN Don J	Haines Company

9 PINOS

Year	Uses	Source
2002	HUOSONJohn	Haines Company

FINDINGS

10 PINOS

Year	*Uses*	*Source*
2002	SSTEFEKKar l	Haines Company

11 PINOS

Year	*Uses*	*Source*
2002	FRANCIS Ed	Haines Company
	FRANCISJuete	Haines Company

13 PINOS

Year	*Uses*	*Source*
2002	SLASH Martin A	Haines Company

14 PINOS

Year	*Uses*	*Source*
2002	SK 19 VENJack B	Haines Company
	KIRVENJoan L	Haines Company

15 PINOS

Year	*Uses*	*Source*
2002	SKIMSunguk	Haines Company

16 PINOS

Year	*Uses*	*Source*
2002	SESPINOSAAntonuo	Haines Company

17 PINOS

Year	*Uses*	*Source*
2002	YIMHow ard	Haines Company

18 PINOS

Year	*Uses*	*Source*
2002	WEAVERJames E	Haines Company

19 PINOS

Year	*Uses*	*Source*
2002	DEMPSTERJack	Haines Company

20 PINOS

Year	Uses	Source
2002	SJOHNSONWaller	Haines Company

21 PINOS

Year	Uses	Source
2002	OSATODarryl	Haines Company

22 PINOS

Year	Uses	Source
2002	0 EXONC	Haines Company
	EXONM	Haines Company

23 PINOS

Year	Uses	Source
2002	0 KNUTSON Charles	Haines Company

PLAYA CIR

1 PLAYA CIR

Year	Uses	Source
2020	FRANK SANCHEZ	EDR Digital Archive
2014	FRANK SANCHEZ	Cole Information
2010	FRANK SANCHEZ	Cole Information

2 PLAYA CIR

Year	Uses	Source
2020	NILA TRIDER	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information

3 PLAYA CIR

Year	Uses	Source
2020	ELIZABETH TOLLES	EDR Digital Archive
	CHASE TOLLES	EDR Digital Archive
	COLLEEN TOLLES	EDR Digital Archive
2014	CHASE TOLLES	Cole Information

Year	Uses	Source
2010	SHAWN DUGAN	Cole Information

4 PLAYA CIR

Year	Uses	Source
2020	JODY WALLACE	EDR Digital Archive
2014	JODY WALLACE	Cole Information
2010	JODY WALLACE	Cole Information

5 PLAYA CIR

Year	Uses	Source
2020	LUCILLE STARKEY	EDR Digital Archive
2014	KIM SUN	Cole Information
	SUN KIM	Cole Information
2010	THERESA DONALDSON	Cole Information

6 PLAYA CIR

Year	Uses	Source
2020	ZHE LIU	EDR Digital Archive
2014	MICHAEL BROOKS	Cole Information
	CARLYN THOMPSON	Cole Information
2010	MICHAEL BROOKS	Cole Information
	CARLYN THOMPSON	Cole Information

7 PLAYA CIR

Year	Uses	Source
2020	TANYA WIEDNER	EDR Digital Archive
2014	DARCY WIEDNER	Cole Information
2010	DARCY WIEDNER	Cole Information

8 PLAYA CIR

Year	Uses	Source
2014	EDWIN HIATT	Cole Information
	JAMES KLEIN	Cole Information

9 PLAYA CIR

Year	Uses	Source
2020	KIMBERLY FEICK	EDR Digital Archive
2014	KIMBERLY FEICK	Cole Information

10 PLAYA CIR

Year	Uses	Source
2020	PHILIP ZEIGER	EDR Digital Archive
	KRISTEN BABIRACKI	EDR Digital Archive
2014	KEVIN FLANIGAN	Cole Information
	KRISTEN BABIRACKI	Cole Information

11 PLAYA CIR

Year	Uses	Source
2020	URBN FIT LLC	EDR Digital Archive
	ERIC KIM	EDR Digital Archive
2014	ERIC KIM	Cole Information

12 PLAYA CIR

Year	Uses	Source
2020	FAYROUZ MATTHEWS	EDR Digital Archive
2014	FAYROUZ MATTHEWS	Cole Information

13 PLAYA CIR

Year	Uses	Source
2014	CHIUNG DECHAO	Cole Information
	AMANDA JOHANSON	Cole Information

14 PLAYA CIR

Year	Uses	Source
2020	NANCY OSCO	EDR Digital Archive
	JOSEPH DAGILUS	EDR Digital Archive
	MARTHA DANIEL	EDR Digital Archive
2014	TYLER GIRTMAN	Cole Information
2010	MATHURIN DANIEL	Cole Information

15 PLAYA CIR

Year	Uses	Source
2020	PAMELA VERGARA	EDR Digital Archive
2014	PAMELA VERGARA	Cole Information
2010	PAMELA VERGARA	Cole Information

16 PLAYA CIR

Year	Uses	Source
2014	OCCUPANT UNKNOWN	Cole Information
2010	RAVI PURI	Cole Information

17 PLAYA CIR

Year	Uses	Source
2020	RICHARD PROTZMANN	EDR Digital Archive
	BETHANY PROTZMANN	EDR Digital Archive
2014	MICHAEL GOODWIN	Cole Information
2010	MICHAEL GOODWIN	Cole Information

18 PLAYA CIR

Year	Uses	Source
2020	MICHELLE MCKENZIE	EDR Digital Archive
2014	MICHELLE MCKENZIE	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information

19 PLAYA CIR

Year	Uses	Source
2020	KEIZO MIYATA	EDR Digital Archive
2014	KEIZO MIYATA	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information

20 PLAYA CIR

Year	Uses	Source
2020	NICOLE HOLMGREN	EDR Digital Archive
	KARINA RIOS	EDR Digital Archive
	CHRISTOPHER ANIBALE	EDR Digital Archive
2014	NICOLE WEAR	Cole Information

Year	Uses	Source
2010	CARL HOLMGREN	Cole Information

21 PLAYA CIR

Year	Uses	Source
2014	ROBERT MAHER	Cole Information
2010	ROBERT MAHER	Cole Information

22 PLAYA CIR

Year	Uses	Source
2020	CHARLES AQUINO	EDR Digital Archive
2014	MARGARET BONADUCE	Cole Information

23 PLAYA CIR

Year	Uses	Source
2020	ALYSSA AMANTE	EDR Digital Archive
	ANDREW AMANTE	EDR Digital Archive
2014	KRISTINA AREBALO	Cole Information

24 PLAYA CIR

Year	Uses	Source
2020	MARGARET HARTLE	EDR Digital Archive
2014	MARGARET HARTLE	Cole Information

25 PLAYA CIR

Year	Uses	Source
2020	XUEJIAO CHEN	EDR Digital Archive
2014	AAMIR SHAH	Cole Information

26 PLAYA CIR

Year	Uses	Source
2020	CLAUDIA RICH	EDR Digital Archive
2014	CLAUDIA RICH	Cole Information

27 PLAYA CIR

Year	Uses	Source
2020	MICHAEL LEE	EDR Digital Archive

28 PLAYA CIR

Year	Uses	Source
2020	KOROUP EAR	EDR Digital Archive
2014	KOROUP EAR	Cole Information
2010	JOON CHA	Cole Information

29 PLAYA CIR

Year	Uses	Source
2020	JOSEPH BINOTTO	EDR Digital Archive
	IAN COHEN	EDR Digital Archive
	JAMIE COHEN	EDR Digital Archive
	JAKE COHEN	EDR Digital Archive
	MITCHELL COHEN	EDR Digital Archive
2014	JOSEPH BINOTTO	Cole Information
2010	JOSEPH BINOTTO	Cole Information

30 PLAYA CIR

Year	Uses	Source
2020	LLOYD NICKERSON	EDR Digital Archive
	COLLEEN DUONG	EDR Digital Archive
2010	LORISSA NICKERSON	Cole Information

31 PLAYA CIR

Year	Uses	Source
2020	MARIA CAMPOS	EDR Digital Archive
2014	DANA ALIMENA	Cole Information
2010	DANA ALIMENA	Cole Information

32 PLAYA CIR

Year	Uses	Source
2020	PEDRO ERIC	EDR Digital Archive
	CLIFF MESTON	EDR Digital Archive
2014	BON SANPEDRO	Cole Information
	PEDRO SAN	Cole Information
2010	BON SANPEDRO	Cole Information

33 PLAYA CIR

Year	Uses	Source
2020	DEBORAH MANCUSO	EDR Digital Archive
	EMIL OCCHIPINTI	EDR Digital Archive
2014	DEBORAH MANCUSO	Cole Information
2010	ASA NOSAKA	Cole Information

34 PLAYA CIR

Year	Uses	Source
2020	JEFF ZAHRADNIK	EDR Digital Archive
	ASHLEY TERRELL	EDR Digital Archive
2014	JEFF SEIPEL	Cole Information
2010	ERIC ZAHRADNIK	Cole Information

35 PLAYA CIR

Year	Uses	Source
2020	CANDICE ORR	EDR Digital Archive
	CANDICE BANKS	EDR Digital Archive
2014	CANDICE ORR	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information

36 PLAYA CIR

Year	Uses	Source
2020	MARISELA ROCKWOOD	EDR Digital Archive
	ANTHONY ALSTON	EDR Digital Archive
	RYAN ROCKWOOD	EDR Digital Archive
	S ALSTON	EDR Digital Archive
2014	LUIS MORALES	Cole Information
2010	LES GRIFFIN	Cole Information

37 PLAYA CIR

Year	Uses	Source
2014	CRAIG FOSTER	Cole Information

38 PLAYA CIR

Year	Uses	Source
2020	PAUL OGIER	EDR Digital Archive
	DENISE OGIER	EDR Digital Archive
2014	OGIER PAUL	Cole Information
	PAUL OGIER	Cole Information

39 PLAYA CIR

Year	Uses	Source
2014	AZIZ KAPADIA	Cole Information

40 PLAYA CIR

Year	Uses	Source
2020	HEIDI ADAMS	EDR Digital Archive
2014	HEIDI ADAMS	Cole Information

41 PLAYA CIR

Year	Uses	Source
2020	CARRIE DIAZ	EDR Digital Archive
2014	DANIEL DIAZ	Cole Information

42 PLAYA CIR

Year	Uses	Source
2020	MARIA VREEKE	EDR Digital Archive
	MARK VREEKE	EDR Digital Archive
2014	KARIM MALI	Cole Information
2010	KARIM MALI	Cole Information

43 PLAYA CIR

Year	Uses	Source
2020	JACOB MCGRATH	EDR Digital Archive
	BARBARA MCGRATH	EDR Digital Archive
2014	BARBARA MCGRATH	Cole Information

44 PLAYA CIR

Year	Uses	Source
2020	JOE SWEET	EDR Digital Archive

Year	Uses	Source
2020	KENNETH HODEL	EDR Digital Archive
2014	JOE SWEET	Cole Information
2010	JOE SWEET	Cole Information

45 PLAYA CIR

Year	Uses	Source
2020	BERND NUSSBAUMER	EDR Digital Archive
	ADRIANA NUSSBAUMER	EDR Digital Archive
	KERRY PIERCE	EDR Digital Archive
2014	BRADLEY SLADEK	Cole Information
2010	ASHLEY AUDETTE	Cole Information

46 PLAYA CIR

Year	Uses	Source
2020	FARANAK GOLAB	EDR Digital Archive
2014	FARANAK GOLAB	Cole Information
2010	KENNETH MAZZARESE	Cole Information

47 PLAYA CIR

Year	Uses	Source
2020	JUSTIN TOLENTINO	EDR Digital Archive
	AMALIA THOM	EDR Digital Archive
	CATHERINE YAGUE	EDR Digital Archive
	GERALDINE TOLENTINO	EDR Digital Archive
	WILLIAM THOM	EDR Digital Archive
	JOEL TOLENTINO	EDR Digital Archive
2014	ROBERT GANEY	Cole Information
2010	SEAN GANEY	Cole Information

48 PLAYA CIR

Year	Uses	Source
2020	DREW DOKKEN	EDR Digital Archive
2014	DREW DOKKEN	Cole Information
2010	DREW DOKKEN	Cole Information

49 PLAYA CIR

Year	Uses	Source
2014	KAREN SALEM	Cole Information
2010	PHILLIP JONES	Cole Information

50 PLAYA CIR

Year	Uses	Source
2020	KENNETH TAYLOR	EDR Digital Archive
2014	COLIN MILLER	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information

51 PLAYA CIR

Year	Uses	Source
2020	TIMOTHY HOUSTON	EDR Digital Archive
	ELAINA HOUSTON	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	TIM HOUSTON	Cole Information

52 PLAYA CIR

Year	Uses	Source
2020	DAVID LEVER	EDR Digital Archive
	LESTHER NUNEZ	EDR Digital Archive
2014	SANDEEP ADWANKAR	Cole Information
2010	LESTHER NUNEZ	Cole Information

53 PLAYA CIR

Year	Uses	Source
2020	YEVGENIY KUTSEKEVICH	EDR Digital Archive
	EUGENE KUTSIKEVICH	EDR Digital Archive
	YEKATERINA KUTSIKEVICH	EDR Digital Archive
2014	EUGENE KUTSIKEVICH	Cole Information
2010	EUGENE KUTSIKEVICH	Cole Information

54 PLAYA CIR

Year	Uses	Source
2020	ADAM SORGI	EDR Digital Archive

Year	Uses	Source
2014	CATHERINE WONG	Cole Information
2010	CATHERINE WONG	Cole Information

55 PLAYA CIR

Year	Uses	Source
2020	33 BRIDGES LLC	EDR Digital Archive
	MANUEL PEREZ	EDR Digital Archive
	MEHRAN MOATAMER	EDR Digital Archive
	MANUCHEHR MOATAMER	EDR Digital Archive
2014	SOPHIA MOATAMER	Cole Information
2010	MANUCHEHR MOATAMER	Cole Information

56 PLAYA CIR

Year	Uses	Source
2020	MARYANN PIERRON	EDR Digital Archive
	JOHN PIERRON	EDR Digital Archive
2014	ROBERTA BRECHER	Cole Information
	MARY PIERRON	Cole Information
2010	BRADLEY SCHAFER	Cole Information
	JOHN PIERRON	Cole Information

57 PLAYA CIR

Year	Uses	Source
2020	KERRI DAMRON	EDR Digital Archive
	KAYLEEN DAMRON	EDR Digital Archive
2014	KERRI DAMRON	Cole Information
2010	KERRI DAMRON	Cole Information

58 PLAYA CIR

Year	Uses	Source
2020	PATRICK RAMSEY	EDR Digital Archive
2014	RICKEY RAMSEY	Cole Information
2010	RICK RAMSEY	Cole Information

FINDINGS

60 PLAYA CIR

Year	Uses	Source
2020	DEREK LEE	EDR Digital Archive
2014	CONAN FINK	Cole Information

61 PLAYA CIR

Year	Uses	Source
2020	MICHAEL JAMES	EDR Digital Archive
	NICOLE JAMES	EDR Digital Archive
	CAROLINE JAMES	EDR Digital Archive
2014	MICHAEL JAMES	Cole Information

62 PLAYA CIR

Year	Uses	Source
2014	FRANTY GOMEZ	Cole Information

63 PLAYA CIR

Year	Uses	Source
2020	TERRY MOORE	EDR Digital Archive
2014	LAURIE JACOBSMA	Cole Information
	TERRY MOORE	Cole Information

64 PLAYA CIR

Year	Uses	Source
2020	DANIELA COSIO	EDR Digital Archive
	EDGAR COSIO	EDR Digital Archive
	KYLE WILLIAMS	EDR Digital Archive
	LAURA COSIO	EDR Digital Archive
2014	MEL WILLIAMS	Cole Information

65 PLAYA CIR

Year	Uses	Source
2020	SUZANNE PIPKIN	EDR Digital Archive
2014	SUZANNE PIPKIN	Cole Information

66 PLAYA CIR

Year	Uses	Source
2020	JONATHAN PANKOW	EDR Digital Archive
	KAREN PANKOW	EDR Digital Archive
	BETTY HOSLER	EDR Digital Archive
2014	JASON HOSLER	Cole Information

67 PLAYA CIR

Year	Uses	Source
2020	SHISHIR SRIVASTAVA	EDR Digital Archive
	SHIREEN SHANKAR	EDR Digital Archive
2014	GISCARD NURIADY	Cole Information

68 PLAYA CIR

Year	Uses	Source
2020	BRIAN SONICO	EDR Digital Archive
	KIMBERLY SONICO	EDR Digital Archive
2014	BRIAN SONICO	Cole Information

69 PLAYA CIR

Year	Uses	Source
2020	TINA NGUYEN	EDR Digital Archive
	SON TRAN	EDR Digital Archive
	HAELEY TRAN	EDR Digital Archive
2014	TINA NGUYEN	Cole Information

70 PLAYA CIR

Year	Uses	Source
2020	SAEED JOLGHAZI	EDR Digital Archive
	KIMBERLY CARDOZA	EDR Digital Archive
2014	KIMBERLY CARDOZA	Cole Information

71 PLAYA CIR

Year	Uses	Source
2020	ROSTIN TEHRANIAN	EDR Digital Archive
	ROUZBEH TEHRANIAN	EDR Digital Archive

Year	Uses	Source
2020	SHAHLA TEHRANIAN	EDR Digital Archive
	MOHAMAD TEHRANIAN	EDR Digital Archive
2014	TODD GALLEGOS	Cole Information

72 PLAYA CIR

Year	Uses	Source
2020	CHRISTINA THARP	EDR Digital Archive
	VIVIEN FANG	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

73 PLAYA CIR

Year	Uses	Source
2014	ALLAN ONEIL	Cole Information
2010	TINA PAULEY	Cole Information

74 PLAYA CIR

Year	Uses	Source
2020	JAMSHID MARKHALE	EDR Digital Archive
2014	ALFONSO BENAVIDEZ	Cole Information
2010	CHRISTOPHER HOWELL	Cole Information

75 PLAYA CIR

Year	Uses	Source
2020	LINDA COMPOSITOR	EDR Digital Archive
	MICHAEL PRICE	EDR Digital Archive
2014	JOSEPH COMPOSITOR	Cole Information
2010	LINDA COMPOSITOR	Cole Information

76 PLAYA CIR

Year	Uses	Source
2020	CARRIE MARQUEZ	EDR Digital Archive
	LAWRENCE MARQUEZ	EDR Digital Archive
2014	LAWRENCE MARQUEZ	Cole Information
2010	LAWRENCE MARQUEZ	Cole Information

77 PLAYA CIR

Year	Uses	Source
2020	DAVID WHITNEY	EDR Digital Archive
2014	DAVID WHITNEY	Cole Information
2010	RYAN FRANKE	Cole Information

78 PLAYA CIR

Year	Uses	Source
2020	APARNA RANGANATHAN	EDR Digital Archive
2014	GEORGE CLEARY	Cole Information
2010	GEORGE CLEARY	Cole Information

79 PLAYA CIR

Year	Uses	Source
2020	JAMES LIN	EDR Digital Archive
	CZARIN LIN	EDR Digital Archive
	CHAN CZARIN	EDR Digital Archive
	SCOTT FERER	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	JAMES LIN	Cole Information

80 PLAYA CIR

Year	Uses	Source
2014	RICHARD HSIAO	Cole Information
2010	RICHARD HSIAO	Cole Information

81 PLAYA CIR

Year	Uses	Source
2020	SHIRLEY FENN	EDR Digital Archive
	VEENA FENN	EDR Digital Archive
	ROBERT FENN	EDR Digital Archive
2014	ROBERT FENN	Cole Information
2010	KIMBERLY STUVER	Cole Information

82 PLAYA CIR

Year	Uses	Source
2020	AMELIA PRAHASTO	EDR Digital Archive
	DONNY PRAHASTO	EDR Digital Archive
2014	DONNY PRAHASTO	Cole Information
2010	WILDAN ANWAR	Cole Information
	DONNY PRAHASTO	Cole Information

83 PLAYA CIR

Year	Uses	Source
2020	GIANCARLO DELAGARZA	EDR Digital Archive
	SOFIA DELAGARZA	EDR Digital Archive
	SOFIA BAEZ	EDR Digital Archive
2014	GIANCARLO DELAGARZA	Cole Information
2010	GIANCARLO DELAGARZA	Cole Information

84 PLAYA CIR

Year	Uses	Source
2020	CHRIS STOLROW	EDR Digital Archive
2014	CHRISTOPHER STOLROW	Cole Information
2010	ANDREA STEPAN	Cole Information

85 PLAYA CIR

Year	Uses	Source
2020	WAYNE SLOMSKY	EDR Digital Archive
2014	JUAN SCIAMMARELLA	Cole Information
2010	JUAN SCIAMMARELLA	Cole Information

86 PLAYA CIR

Year	Uses	Source
2020	MAKSIM SLUKIN	EDR Digital Archive
	TIFFANY LE	EDR Digital Archive
	NATALIA SLUKINA	EDR Digital Archive
	TAMMY LE	EDR Digital Archive
2010	KIET LE	Cole Information

87 PLAYA CIR

Year	Uses	Source
2020	ANSELMA SICAT	EDR Digital Archive
	WILFREDO SICAT	EDR Digital Archive
2014	WILFREDO SICAT	Cole Information
2010	LUIS SORIANO	Cole Information

88 PLAYA CIR

Year	Uses	Source
2020	LYNN YUAN	EDR Digital Archive
	KAYLA NEREDITH	EDR Digital Archive
2014	DIANE LE	Cole Information
2010	DAMIAN DEBLIS	Cole Information

89 PLAYA CIR

Year	Uses	Source
2020	MICHAEL GALLARDO	EDR Digital Archive
	GUILLERMINA GALLARDO	EDR Digital Archive
2014	TOM PHAM	Cole Information
	VINCENT SALINAS	Cole Information
2010	LISA TRAN	Cole Information

90 PLAYA CIR

Year	Uses	Source
2020	GEORGIO KASSIR	EDR Digital Archive
2014	ROSEMARY POLENSKI	Cole Information
2010	TIFFANY POLENSKI	Cole Information

91 PLAYA CIR

Year	Uses	Source
2020	ANTHONY SIOK	EDR Digital Archive
2014	ANTHONY SIOK	Cole Information

92 PLAYA CIR

Year	Uses	Source
2020	MYONGHO CHUNG	EDR Digital Archive

Year	Uses	Source
2020	SUN LEE	EDR Digital Archive
2014	SUN LEE	Cole Information
2010	MYONG CHUNG	Cole Information

93 PLAYA CIR

Year	Uses	Source
2020	YASMIN CUNANAN	EDR Digital Archive
2014	MARK PEPPING	Cole Information

94 PLAYA CIR

Year	Uses	Source
2020	AMY ARMOUR	EDR Digital Archive
	VENKATA KOTNANI	EDR Digital Archive
2014	JEFFREY ARMOUR	Cole Information

95 PLAYA CIR

Year	Uses	Source
2020	JEIMAR SPELL	EDR Digital Archive
2014	DARRICK SIM	Cole Information

96 PLAYA CIR

Year	Uses	Source
2020	VIRGINIA LOPEZ	EDR Digital Archive
	MIKE DURAN	EDR Digital Archive
2014	MIKE DURAN	Cole Information

97 PLAYA CIR

Year	Uses	Source
2020	PATRICK GRIMM	EDR Digital Archive
2014	GARRET FRANK	Cole Information

98 PLAYA CIR

Year	Uses	Source
2020	ABEL WANG	EDR Digital Archive
	SUSAN HUANG	EDR Digital Archive
	CHEN HUANG	EDR Digital Archive

Year	Uses	Source
2014	CHEN HUANG	Cole Information

99 PLAYA CIR

Year	Uses	Source
2020	ELAINE ZHAO	EDR Digital Archive
2014	ELAINE ZHAO	Cole Information

100 PLAYA CIR

Year	Uses	Source
2014	BALINGIT JAMESON	Cole Information
	APRIL MYUNG	Cole Information
2010	JAMESON BALINGIT	Cole Information

101 PLAYA CIR

Year	Uses	Source
2020	ZACKARY RZEPKA	EDR Digital Archive
	ROGER RZEPKA	EDR Digital Archive
2014	SABRINA GORDON	Cole Information
	BILEK DAVID	Cole Information

102 PLAYA CIR

Year	Uses	Source
2020	JEFFREY TURNER	EDR Digital Archive
2014	MONTE MCCANNE	Cole Information
2010	MONTE MCCANNE	Cole Information

103 PLAYA CIR

Year	Uses	Source
2020	ERIN SOOS	EDR Digital Archive
	JACOB MUNNS	EDR Digital Archive
2014	ERIN SOOS	Cole Information
	JACOB MUNNS	Cole Information
2010	ERIN SOOS	Cole Information
	JACOB MUNNS	Cole Information

104 PLAYA CIR

Year	Uses	Source
2014	OCCUPANT UNKNOWN	Cole Information

105 PLAYA CIR

Year	Uses	Source
2020	MARYAM O'LOUGHLIN	EDR Digital Archive
	SEAN O'LOUGHLIN	EDR Digital Archive
2014	ALFRED BREMER	Cole Information
2010	TIMOTHY RABBITT	Cole Information

106 PLAYA CIR

Year	Uses	Source
2020	LORI GARDNER	EDR Digital Archive
	MICHAEL GARDNER	EDR Digital Archive
2014	DAVID RODIBAUGH	Cole Information
2010	DAVID RODIBAUGH	Cole Information

107 PLAYA CIR

Year	Uses	Source
2020	CHRISTOPHER JONES	EDR Digital Archive
2014	DAVID LARSON	Cole Information

108 PLAYA CIR

Year	Uses	Source
2020	MILES SMITH	EDR Digital Archive
2014	JASON MEDNICK	Cole Information

109 PLAYA CIR

Year	Uses	Source
2020	BERKSHIRE HATHAWAY HOME SVC	EDR Digital Archive
	CHARMAINE ASHTON	EDR Digital Archive
2014	FREDRIK BOHMAN	Cole Information

110 PLAYA CIR

Year	Uses	Source
2020	JESSICA BECK	EDR Digital Archive

Year	Uses	Source
2014	JESSICA BECK	Cole Information

111 PLAYA CIR

Year	Uses	Source
2020	SCOTT STEINMETZ	EDR Digital Archive
2014	SCOTT STEINMETZ	Cole Information

112 PLAYA CIR

Year	Uses	Source
2020	HERMAN NAKAMURA	EDR Digital Archive
2014	HERMAN NAKAMURA	Cole Information

113 PLAYA CIR

Year	Uses	Source
2014	JOSE GODINEZ	Cole Information

114 PLAYA CIR

Year	Uses	Source
2020	JWEN DU	EDR Digital Archive
2014	RYAN ROSETE	Cole Information

115 PLAYA CIR

Year	Uses	Source
2020	GUADALUPE BAZAN	EDR Digital Archive
2014	GUADALUPE BAZAN	Cole Information

116 PLAYA CIR

Year	Uses	Source
2020	JOY BLAND	EDR Digital Archive
	HOWARD BLAND	EDR Digital Archive
2014	HOWARD BLAND	Cole Information

117 PLAYA CIR

Year	Uses	Source
2020	CHRISTOPHER COOMBES	EDR Digital Archive
	TONY CHU	EDR Digital Archive
2014	TONY CHU	Cole Information

FINDINGS

118 PLAYA CIR

Year	Uses	Source
2020	B-MAGICAL	EDR Digital Archive
	MIND-BODY MEDICINAE	EDR Digital Archive
2014	BULENT GUNDOGAR	Cole Information

119 PLAYA CIR

Year	Uses	Source
2020	ALAYNA SCHRADER	EDR Digital Archive
	YU QIN	EDR Digital Archive
	CLINT SCHRADER	EDR Digital Archive
2014	PEIWEN CHENG	Cole Information

120 PLAYA CIR

Year	Uses	Source
2020	ALYSSA WALKER	EDR Digital Archive
2014	ARLYSSA WALKER	Cole Information

121 PLAYA CIR

Year	Uses	Source
2020	BEASLEY LAHNA	EDR Digital Archive
	STEPHANIE NATION	EDR Digital Archive
2014	JOHN GAMBLE	Cole Information
	CARA KERR	Cole Information

122 PLAYA CIR

Year	Uses	Source
2020	WILLIAM COWDELL	EDR Digital Archive
2014	TIMOTHY ROBINSON	Cole Information

123 PLAYA CIR

Year	Uses	Source
2020	EMA BAYANI	EDR Digital Archive
2014	EMA BAYANI	Cole Information

124 PLAYA CIR

Year	Uses	Source
2020	SYLVIA HEREDIA	EDR Digital Archive
	ANOUSH METCHIKIAN	EDR Digital Archive
2014	DUY NGUYEN	Cole Information

125 PLAYA CIR

Year	Uses	Source
2020	KAM CHAN	EDR Digital Archive
	PHAM CHAN	EDR Digital Archive
2014	KAM CHAN	Cole Information

126 PLAYA CIR

Year	Uses	Source
2020	TREVOR HAMASAKI	EDR Digital Archive
	JENNIFER PRATT	EDR Digital Archive
2014	JENNIFER PRATT	Cole Information

127 PLAYA CIR

Year	Uses	Source
2020	ROBERT DRIGGERS	EDR Digital Archive
	HILARIO TORRES	EDR Digital Archive
2014	ROBERT DRIGGERS	Cole Information

128 PLAYA CIR

Year	Uses	Source
2020	JAMES DAILEY	EDR Digital Archive
2014	TONY KAO	Cole Information

129 PLAYA CIR

Year	Uses	Source
2020	KATAYOUN SHAMS	EDR Digital Archive
2014	KATAYOUN SHAMS	Cole Information

130 PLAYA CIR

Year	Uses	Source
2020	JEANNIE CHOI	EDR Digital Archive

Year	Uses	Source
2014	EUGENE HAHN	Cole Information

131 PLAYA CIR

Year	Uses	Source
2020	JUN PARK	EDR Digital Archive
	MINJUNG PARK	EDR Digital Archive
2014	MINJUNG PARK	Cole Information

132 PLAYA CIR

Year	Uses	Source
2020	AMENEH NIKZAD	EDR Digital Archive
2014	SHOHREH ZAMIR	Cole Information

133 PLAYA CIR

Year	Uses	Source
2020	ASHLEY BRUEMMER	EDR Digital Archive

134 PLAYA CIR

Year	Uses	Source
2020	MARIA MAKHMOOR	EDR Digital Archive
2014	HAMED MAKHMOOR	Cole Information

135 PLAYA CIR

Year	Uses	Source
2020	SANDRA JARRETT	EDR Digital Archive
2014	SANDRA JARRETT-POST	Cole Information

136 PLAYA CIR

Year	Uses	Source
2014	WILLIAM HARDIE	Cole Information

137 PLAYA CIR

Year	Uses	Source
2020	KATHY KOBAYASHI	EDR Digital Archive
2014	KATHY KOBAYASHI	Cole Information

138 PLAYA CIR

Year	Uses	Source
2020	DLT SPACE SYSTEMS	EDR Digital Archive
	LEWIS ERVOES	EDR Digital Archive
	EDWARD LYONS	EDR Digital Archive
	MEGAN ERVOES	EDR Digital Archive
2014	LEWIS ERVOES	Cole Information
	EDWARD LYONS	Cole Information

139 PLAYA CIR

Year	Uses	Source
2020	YUKARI FROMM	EDR Digital Archive
	MICHELLE RISHEQ	EDR Digital Archive
	NATALIA RISHEQ	EDR Digital Archive
	JOSHUA FROMM	EDR Digital Archive
2014	PAUL VOGT	Cole Information

140 PLAYA CIR

Year	Uses	Source
2020	TYLER GOOD	EDR Digital Archive
	JESSICA GOOD	EDR Digital Archive
2014	TYLER GOOD	Cole Information

141 PLAYA CIR

Year	Uses	Source
2020	DIONNE MISCHLER	EDR Digital Archive
2014	BRANDON MISCHLER	Cole Information

142 PLAYA CIR

Year	Uses	Source
2020	BRENDAN COLLINS	EDR Digital Archive
2014	JASON HEIN	Cole Information

143 PLAYA CIR

Year	Uses	Source
2020	BRENDAN EGAN	EDR Digital Archive

Year	Uses	Source
2014	BRENDAN EGAN	Cole Information
	LIZZET BARAJAS	Cole Information

144 PLAYA CIR

Year	Uses	Source
2020	GOURANGADOSS SUNDAR	EDR Digital Archive
	KATAYOUN JOUNEGHANI	EDR Digital Archive
2014	KATHY JOUNEGHANI	Cole Information

145 PLAYA CIR

Year	Uses	Source
2020	JOSHUA KO	EDR Digital Archive
2014	JEREMY CORTEZ	Cole Information
	SUKHDEV BRAR	Cole Information

146 PLAYA CIR

Year	Uses	Source
2014	JASON CHEN	Cole Information

147 PLAYA CIR

Year	Uses	Source
2020	BRENT KOTINEK	EDR Digital Archive
	MIN JEONG	EDR Digital Archive
2014	WON MA	Cole Information

148 PLAYA CIR

Year	Uses	Source
2020	FEREIDOON SAEDI	EDR Digital Archive
	ARIA GHALILI	EDR Digital Archive
2014	TOM MOHR	Cole Information

149 PLAYA CIR

Year	Uses	Source
2020	KAREN DEROUIN	EDR Digital Archive
	CARL BRUENING	EDR Digital Archive
	HEATHER BRUENING	EDR Digital Archive

150 PLAYA CIR

Year	Uses	Source
2020	STANLY CHENG	EDR Digital Archive
	JULIE CHENG	EDR Digital Archive
2014	STANLY CHENG	Cole Information

151 PLAYA CIR

Year	Uses	Source
2020	SANDRA MOTEN	EDR Digital Archive
2014	SANDRA MOTEN	Cole Information

152 PLAYA CIR

Year	Uses	Source
2020	JANICE CORDERO	EDR Digital Archive
	WHITNEY CORDERO	EDR Digital Archive
	NICOLE CORDERO	EDR Digital Archive
2014	ASHLEY ALLISON	Cole Information

153 PLAYA CIR

Year	Uses	Source
2020	ZHIZHEN ZHU	EDR Digital Archive
2014	CHAD WHITNEY	Cole Information
	JASON HILL	Cole Information

154 PLAYA CIR

Year	Uses	Source
2020	KATHERINE FRAIZER	EDR Digital Archive
	JERRY FRAIZER	EDR Digital Archive
2014	JERRY FRAIZER	Cole Information

155 PLAYA CIR

Year	Uses	Source
2020	SERGIO BECHARA	EDR Digital Archive
	SYDNIE BECHARA	EDR Digital Archive
	SAMANTHA BECHARA	EDR Digital Archive
	SHERYL BECHARA	EDR Digital Archive

Year	Uses	Source
2014	SAMANTHA BECHARA	Cole Information

156 PLAYA CIR

Year	Uses	Source
2020	AFTON BABIRACKI	EDR Digital Archive
	TAMMY BABIRACKI	EDR Digital Archive

157 PLAYA CIR

Year	Uses	Source
2020	JOEL GUMBAYAN	EDR Digital Archive
	DARCIE GUMBAYAN	EDR Digital Archive
2014	PATRICK PARK	Cole Information

158 PLAYA CIR

Year	Uses	Source
2020	KEE LEE	EDR Digital Archive
	JANE LEE	EDR Digital Archive
	DAVID LEE	EDR Digital Archive
	HYUN LEE	EDR Digital Archive

159 PLAYA CIR

Year	Uses	Source
2020	ALEXANDRU ROMAN	EDR Digital Archive
2014	JEFFREY BLANK	Cole Information

160 PLAYA CIR

Year	Uses	Source
2020	BIN ZHAO	EDR Digital Archive
2014	MICHAEL GUREN	Cole Information

161 PLAYA CIR

Year	Uses	Source
2020	PATRICK BRAND	EDR Digital Archive
2014	PATRICK BRAND	Cole Information

162 PLAYA CIR

Year	Uses	Source
2020	AMIR ZOKAEIEH	EDR Digital Archive
2014	SHAHRAM TOKLEH	Cole Information

163 PLAYA CIR

Year	Uses	Source
2020	CATHERINE MESSMER	EDR Digital Archive
	ALEX MESSMER	EDR Digital Archive
	BAHADOR KHAZRAEI	EDR Digital Archive
2014	MELANIE SALAZAR	Cole Information

164 PLAYA CIR

Year	Uses	Source
2020	GAIL SAGER	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

165 PLAYA CIR

Year	Uses	Source
2020	HARBOR STATION MAINTENANCE	EDR Digital Archive
	SHIMA SAGHAFI	EDR Digital Archive
2014	SHIMA SAGHAFI	Cole Information

166 PLAYA CIR

Year	Uses	Source
2014	LISA ROSAS	Cole Information

167 PLAYA CIR

Year	Uses	Source
2014	SAMANTHA BEIER	Cole Information

168 PLAYA CIR

Year	Uses	Source
2020	JOSEPH UNGER	EDR Digital Archive
2014	JOSEPH UNGER	Cole Information

FINDINGS

169 PLAYA CIR

Year	Uses	Source
2020	EDUVIGES BLANCO	EDR Digital Archive
	JIMMY BLANCO	EDR Digital Archive
2014	DAVID TSAI	Cole Information
	JIMMY BLANCO	Cole Information

170 PLAYA CIR

Year	Uses	Source
2020	FUTOSHI HOSHINO	EDR Digital Archive
	SHIERRY HOSHINO	EDR Digital Archive
2014	SAMUEL HSU	Cole Information

171 PLAYA CIR

Year	Uses	Source
2020	VICKY HOWARD	EDR Digital Archive
2014	VICKY HOWARD	Cole Information

172 PLAYA CIR

Year	Uses	Source
2014	HSING TUAN	Cole Information
	KELLY GILMORE	Cole Information
	KELLY MCVICARS	Cole Information

173 PLAYA CIR

Year	Uses	Source
2020	ROBERT KOONTZ	EDR Digital Archive
	MARIANA KOONTZ	EDR Digital Archive
2014	ROBERT KOONTZ	Cole Information

174 PLAYA CIR

Year	Uses	Source
2020	VERA KLAICH	EDR Digital Archive
2014	VERA KLAICH	Cole Information

FINDINGS

175 PLAYA CIR

Year	Uses	Source
2020	JAMES ANTHONY COLLECTION	EDR Digital Archive
	ASHOK VARMA	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

176 PLAYA CIR

Year	Uses	Source
2020	CHE HSU	EDR Digital Archive
2014	YOUNG KOWALSKI	Cole Information

177 PLAYA CIR

Year	Uses	Source
2014	POPAL SAMIA	Cole Information

178 PLAYA CIR

Year	Uses	Source
2014	RUSSELL DUGAN	Cole Information

179 PLAYA CIR

Year	Uses	Source
2014	DERICK DAHL	Cole Information

180 PLAYA CIR

Year	Uses	Source
2014	DAVID PAK	Cole Information

182 PLAYA CIR

Year	Uses	Source
2020	SAMUEL REYES	EDR Digital Archive
2014	LISA BARROZO	Cole Information
	SAMUEL REYES	Cole Information

183 PLAYA CIR

Year	Uses	Source
2020	JAMES LATTERI	EDR Digital Archive
2014	JAMES LATTERI	Cole Information

184 PLAYA CIR

Year	*Uses*	*Source*
2014	HAROLD WONG	Cole Information

PLAYA CIR # 16

181 PLAYA CIR # 16

Year	*Uses*	*Source*
2020	FRED PEDERSEN	EDR Digital Archive

PLAYA CIR # 5

39 PLAYA CIR # 5

Year	*Uses*	*Source*
2020	RAMAKRISHNA YADAV	EDR Digital Archive

PLAYA CIR # 82

45 PLAYA CIR # 82

Year	*Uses*	*Source*
2020	BRADLEY SLADEK	EDR Digital Archive

PLAYA CIR # BB

146 PLAYA CIR # BB

Year	*Uses*	*Source*
2020	HUI CHEN	EDR Digital Archive

PLAYA CIR # CC

148 PLAYA CIR # CC

Year	*Uses*	*Source*
2020	MANDANA SAEDI	EDR Digital Archive

PLAYA CIR # GG

178 PLAYA CIR # GG

Year	*Uses*	*Source*
2020	RUSSELL DUGAN	EDR Digital Archive

Year	Uses	Source
2020	KARGAR-DUGAN KATAYOUN	EDR Digital Archive

PLAYA CIR # H

41 PLAYA CIR # H

Year	Uses	Source
2020	DANIEL DIAZ	EDR Digital Archive

PLAYA CIR # HH

180 PLAYA CIR # HH

Year	Uses	Source
2020	DAVID PAK	EDR Digital Archive

182 PLAYA CIR # HH

Year	Uses	Source
2020	LINH NGO-REYES	EDR Digital Archive

PLAYA CIR # L

56 PLAYA CIR # L

Year	Uses	Source
2020	BRADLEY SCHAFER	EDR Digital Archive

PLAYA CIR # M

62 PLAYA CIR # M

Year	Uses	Source
2020	FRANTY GOMEZ	EDR Digital Archive

PLAYA CIR # Q

80 PLAYA CIR # Q

Year	Uses	Source
2020	RICHARD HSIAO	EDR Digital Archive

FINDINGS

PLAYA CIR # T

101 PLAYA CIR # T

Year	Uses	Source
2020	LUCINDA CORRAL-RZEPKA	EDR Digital Archive

PLAYA CIR # Z

128 PLAYA CIR # Z

Year	Uses	Source
2020	KATIE RICHEY	EDR Digital Archive

RAINWOOD

1 RAINWOOD

Year	Uses	Source
2020	KATHRYN RAWLINGS	EDR Digital Archive
2014	KATHRYN RAWLINGS	Cole Information
2010	KATHRYN RAWLINGS	Cole Information
2005	KATHRYN RAWLINGS	Cole Information

2 RAINWOOD

Year	Uses	Source
2020	SUSAN LYSTER	EDR Digital Archive
	EDWARD BOBINSKI	EDR Digital Archive
2014	SUSAN LYSTER	Cole Information
2010	SHARON ROBINSON	Cole Information
2005	SHARON ROBINSON	Cole Information
2000	CHERYL FLAHERTY	Cole Information

3 RAINWOOD

Year	Uses	Source
2020	SHERRI FISCHBACH	EDR Digital Archive
2014	SHERRI FISCHBACH	Cole Information
2010	SHERRI FISCHBACH	Cole Information
2005	SHERRI FISCHBACH	Cole Information
2000	SHERRI FISCHBACH	Cole Information

Year	Uses	Source
1995	FISCHBACH, SHERRI	Cole Information

4 RAINWOOD

Year	Uses	Source
2020	MEHDI SAGHAFI	EDR Digital Archive
	VICKY NGOC	EDR Digital Archive
	VICKY GLEN	EDR Digital Archive
2014	SUSAN NGUYEN	Cole Information
	VICKY GLEN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

5 RAINWOOD

Year	Uses	Source
2020	HEBA SOLIMAN	EDR Digital Archive
	KHALED SOLIMAN	EDR Digital Archive
	KAMEL SOLIMAN	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	JOE TIMMONS	Cole Information
1995	PEACOCK, DEBRA J	Cole Information
1992	FAMILY, KARIM H	Cole Information

6 RAINWOOD

Year	Uses	Source
2020	DEO SINGH	EDR Digital Archive
	ERIKA HERNANDEZ	EDR Digital Archive
	SURUJDEEN SINGH	EDR Digital Archive
	PURAN SINGH	EDR Digital Archive
	JOHN SCHNEIDER	EDR Digital Archive
	KAREN WOMACK	EDR Digital Archive

Year	Uses	Source
2014	OCCUPANT UNKNOWN	Cole Information
2010	NATIONWIDE REALTY	Cole Information
	NICK SINGH	Cole Information
2005	SLR INVESTMENTS LLC	Cole Information
	NATIONWIDE REALTY	Cole Information
	NOWLACK SINGH	Cole Information
2000	NICK SINGH	Cole Information
1995	SINGH, NICK	Cole Information

7 RAINWOOD

Year	Uses	Source
2020	MAJID ADABZADEH	EDR Digital Archive
2014	MAJID ADABZADEH	Cole Information
2010	MAJID ADABZADEH	Cole Information
2005	DAVID GOODBRAND	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OVELLET, MARC	Cole Information

8 RAINWOOD

Year	Uses	Source
2020	TIMOTHY SIBLEY	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	BROOKE MORRISON	Cole Information
2005	VALERIE HACKBARTH	Cole Information
2000	RAUL TRIETO	Cole Information
1995	CARRUTHERS, BRUCE	Cole Information
1992	CARRUTHERS, BRUCE	Cole Information

9 RAINWOOD

Year	Uses	Source
2020	MICHAEL TACELLI	EDR Digital Archive
	JOSEPH TACELLI	EDR Digital Archive
2014	RICHARD WELT	Cole Information
2010	JOSEPH TACELLI	Cole Information

Year	Uses	Source
2005	OCCUPANT UNKNOWN	Cole Information
2000	BEVERLY CARLSON	Cole Information

10 RAINWOOD

Year	Uses	Source
2020	ERIC MCARTHUR	EDR Digital Archive
	AMY HATTENSTY	EDR Digital Archive
2014	LESLIE BRIAN	Cole Information
2010	CELIA HICKS	Cole Information
2005	CELIA HICKS	Cole Information
2000	JOHN HANSEN	Cole Information
1995	HANSEN, JAMIE	Cole Information
1992	GAGEBY, JAMIE	Cole Information

11 RAINWOOD

Year	Uses	Source
2020	KURT KRAMER	EDR Digital Archive
	PAULA GARROW	EDR Digital Archive
2014	PAULA GARROW	Cole Information
2010	PAULA GARROW	Cole Information
2005	CORRAL HOME LOANS	Cole Information
	OCCUPANT UNKNOWN	Cole Information
2000	SONJA NIELSEN	Cole Information
1995	NIELSEN, SONJA J	Cole Information

12 RAINWOOD

Year	Uses	Source
2020	SANDY GONZALEZ	EDR Digital Archive
	ZHIHONG COOK	EDR Digital Archive
	ZOE CHEN	EDR Digital Archive
2014	ZOE CHEN	Cole Information
2005	MICHAEL BAKER	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

13 RAINWOOD

Year	Uses	Source
2020	MANUEL SANCHEZ	EDR Digital Archive
	CRYSTAL SANCHEZ	EDR Digital Archive
	GREGORY JACKSON	EDR Digital Archive
2014	MANUEL SANCHEZ	Cole Information
2010	GREGORY JACKSON	Cole Information
2005	GREGORY JACKSON	Cole Information
2000	E GUTOWSKI	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

14 RAINWOOD

Year	Uses	Source
2020	SCOTT WITHERSPOON	EDR Digital Archive
	KATHERINE WITHERSPOON	EDR Digital Archive
	CHRIS LARSON	EDR Digital Archive
2014	SCOTT WITHERSPOON	Cole Information
2010	RONALD DECKER	Cole Information
2005	DIANE MCCRAE	Cole Information
2000	DIANE MCCRAE	Cole Information
1995	TYRRILL, EDWARD	Cole Information

15 RAINWOOD

Year	Uses	Source
2020	ROSEMARY ALLEN	EDR Digital Archive
	SHANE ALLEN	EDR Digital Archive
2014	SHANE ALLEN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	BOCANEGRA, ERIC	Cole Information
1992	LILLYWHITE, SEAN	Cole Information

16 RAINWOOD

Year	Uses	Source
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	ANDREW WADE	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

18 RAINWOOD

Year	Uses	Source
2020	FELIPE GARZA	EDR Digital Archive
2014	PATRICIA HOEY	Cole Information
2010	GARY GROSSO	Cole Information
2005	GARY GROSSO	Cole Information
2000	GREGORY CARTER	Cole Information
1995	MASANGKAY, MOIRA C	Cole Information
1992	HOWMANN, MARK	Cole Information

20 RAINWOOD

Year	Uses	Source
2020	AMANDA RUSSELL	EDR Digital Archive
	AMBER TRAN	EDR Digital Archive
2014	PAULA FICK	Cole Information
2010	RICHARD FREDA	Cole Information
2005	KATHERINE MILLER	Cole Information
2000	DAVID WARNER	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

22 RAINWOOD

Year	Uses	Source
2020	DANIEL LEVIN	EDR Digital Archive
2014	DANIEL LEVIN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information

Year	Uses	Source
1995	HORN, SUSAN P	Cole Information

24 RAINWOOD

Year	Uses	Source
2014	OSCAR MUNOZ	Cole Information
2010	GEOFF GRANEY	Cole Information
2005	JEFF GRANEY	Cole Information
2000	GERI GIRARDIN	Cole Information
1995	RPOPE, TERESA	Cole Information

26 RAINWOOD

Year	Uses	Source
2020	JORGE LARCO	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	CARLOS BOLANOS	Cole Information
2005	CARLOS BOLANOS	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	ROCHE, RALPH J JR	Cole Information
1992	ROCHE, RALPH J JR	Cole Information

28 RAINWOOD

Year	Uses	Source
2014	CHANDLER DUNN	Cole Information
2010	DEANNA HODGES	Cole Information
2005	DEANNA HODGES	Cole Information
2000	GARY CONKLIN	Cole Information
1995	LARSON, C	Cole Information

30 RAINWOOD

Year	Uses	Source
2020	ROSS GUNTHER	EDR Digital Archive
2014	PATRICK MCGOWAN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2000	ANGELA BARATA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

32 RAINWOOD

Year	Uses	Source
2020	DIGITAL BRIDGE	EDR Digital Archive
	KELLY STENDER	EDR Digital Archive
	LUCY THOMPSON	EDR Digital Archive
	SHAWN STENDER	EDR Digital Archive
2010	SHANNON CRIBB	Cole Information
2005	GREG STOUT	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	MARROCCO, PETER	Cole Information
1992	MARROCCO, PETER	Cole Information

34 RAINWOOD

Year	Uses	Source
2020	DEWEY ASHLEY	EDR Digital Archive
	NOAH DEWEY	EDR Digital Archive
2014	JOY BENSON	Cole Information
2010	JACALYN ROBBINS	Cole Information
2005	JACALYN ROBBINS	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	FRIEDMAN, LEWIS J	Cole Information
1992	FRIEDMAN, LEWIS J	Cole Information

36 RAINWOOD

Year	Uses	Source
2020	ON A WING-A PRAYER MINISTRIES	EDR Digital Archive
	MICHELLE CASPER	EDR Digital Archive
2014	ELOISA WEST	Cole Information
2010	KARIN JONES	Cole Information
2005	DEBORAH SIMPSON	Cole Information
2000	STJON SIMPSON	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

38 RAINWOOD

Year	Uses	Source
2020	MARTIN MERCADO	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	DONN WEDDERIEN	Cole Information
2000	DONN WEDDERIEN	Cole Information
1995	MERCADO, MARTIN	Cole Information
1992	MERCADO, MARTIN	Cole Information

40 RAINWOOD

Year	Uses	Source
2020	SALLY JESSUP	EDR Digital Archive
	SUSAN JESSUP	EDR Digital Archive
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	JEFFERY KIRBY	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

42 RAINWOOD

Year	Uses	Source
2020	LINDA MC NAY	EDR Digital Archive
2014	LINDA MCNAY	Cole Information
2010	LINDA MCNAY	Cole Information
2005	LINDA MCNAY	Cole Information
2000	LINDA MCNAY	Cole Information
1995	MCNAY, LINDA M	Cole Information

44 RAINWOOD

Year	Uses	Source
2020	CAMTU PHAM	EDR Digital Archive
	THI CAMTU	EDR Digital Archive
2014	CAMTU PHAM	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	SHARI MATTINGLY	Cole Information

Year	Uses	Source
1995	OCCUPANT UNKNOWNN	Cole Information
1992	KOPLIEN, ERIK V	Cole Information

46 RAINWOOD

Year	Uses	Source
2020	MELISSA PHILLIPS	EDR Digital Archive
	SONJA ENSOR	EDR Digital Archive
	STEVEN PHILLIPS	EDR Digital Archive
2014	YE ZHANG	Cole Information
2010	SONJA ENSOR	Cole Information
2005	KATHRYN SCHANNEN	Cole Information
2000	MELISSA BOYD	Cole Information
1995	DAHLBERG, DAVID B	Cole Information

48 RAINWOOD

Year	Uses	Source
2020	BERDINE WILSON	EDR Digital Archive
2014	BERDINE WILSON	Cole Information
2010	BERDINE WILSON	Cole Information
2005	BERDINE WILSON	Cole Information
2000	BERDINE WILSON	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

50 RAINWOOD

Year	Uses	Source
2020	AMM MASON	EDR Digital Archive
	ANNA MASON	EDR Digital Archive
2014	ANN MASON	Cole Information
2010	ANN MASON	Cole Information
2005	ANN MASON	Cole Information
2000	B KOSS	Cole Information
1995	MARTINEZ, KATHY	Cole Information

52 RAINWOOD

Year	Uses	Source
2020	CLAIRE DAGGETT	EDR Digital Archive
2014	CLAIRE DAGGETT	Cole Information
2010	CLAIRE DAGGETT	Cole Information
2005	CLAIRE DAGGETT	Cole Information
2000	CLAIRE DAGGETT	Cole Information
1995	DAGGETT, CLAIRE M	Cole Information

54 RAINWOOD

Year	Uses	Source
2020	BAHIA ELIAS	EDR Digital Archive
2014	BAHIA ELIAS	Cole Information
2010	BAHIA ELIAS	Cole Information
2005	BAHIA ELIAS	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	ELIAS, BAHIA A	Cole Information
1992	ELIAS, BAHIA A	Cole Information

56 RAINWOOD

Year	Uses	Source
2014	KATHRYN FITZPATRICK	Cole Information
2010	KAY FITZPATRICK	Cole Information
2005	KAY FITZPATRICK	Cole Information
2000	KAY FITZPATRICK	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

RAINWOOD ST

5 RAINWOOD ST

Year	Uses	Source
1992	Family Karlm H	Pacific Bell

6 RAINWOOD ST

Year	Uses	Source
1997	Singh Nick	Pacific Bell

Year	Uses	Source
1992	Keyzers C A	Pacific Bell
	Singh Nick	Pacific Bell

7 RAINWOOD ST

Year	Uses	Source
1997	Goodbrand Tom A	Pacific Bell

8 RAINWOOD ST

Year	Uses	Source
1992	Carruthers Bruce & Helen	Pacific Bell

10 RAINWOOD ST

Year	Uses	Source
1992	Gageby Jamie	Pacific Bell

14 RAINWOOD ST

Year	Uses	Source
1997	Tyrrilt Edw ard	Pacific Bell

15 RAINWOOD ST

Year	Uses	Source
1997	Davies Morris Aaron & Lorie	Pacific Bell
1992	Lillyw hlte Sean	Pacific Bell

26 RAINWOOD ST

Year	Uses	Source
1992	Roche Ralph J Jr 837 313 C	Pacific Bell

32 RAINWOOD ST

Year	Uses	Source
1992	Marrocco Peter 588 096 C	Pacific Bell

34 RAINWOOD ST

Year	Uses	Source
1992	Friedman Lew is J	Pacific Bell

38 RAINWOOD ST

Year	Uses	Source
1992	Mercado Martin & Shellie 588 952 S	Pacific Bell

54 RAINWOOD ST

Year	Uses	Source
1992	Elias BA	Pacific Bell

56 RAINWOOD ST

Year	Uses	Source
1997	Alexander Casey	Pacific Bell
	Alexander Casey	Pacific Bell

RINCON WAY

31 RINCON WAY

Year	Uses	Source
2020	ASHLEIGH CASAD	EDR Digital Archive
	SHELAH YOUNG	EDR Digital Archive
	ZHIZHEN ZHU	EDR Digital Archive
	GREGG CASAD	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

33 RINCON WAY

Year	Uses	Source
2020	RICHARD GOODMAN	EDR Digital Archive
	LAURIE GOODMAN	EDR Digital Archive
2014	RICHARD GOODMAN	Cole Information

35 RINCON WAY

Year	Uses	Source
2020	SHERYL BOHONUS	EDR Digital Archive
	GARY BOHONUS	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

37 RINCON WAY

Year	Uses	Source
2020	MATHURIN DANIEL	EDR Digital Archive
	MARTHA DANIEL	EDR Digital Archive
2014	MATHURIN DANIEL	Cole Information

39 RINCON WAY

Year	Uses	Source
2020	MARY LAGREW	EDR Digital Archive
	DAVID LAGREW	EDR Digital Archive
2014	MICHEAL TODD	Cole Information

41 RINCON WAY

Year	Uses	Source
2020	AUDREY YABKO	EDR Digital Archive
	GARY YABKO	EDR Digital Archive
	RYAN YABKO	EDR Digital Archive
2014	GARY YABKO	Cole Information

43 RINCON WAY

Year	Uses	Source
2020	MARK COLEMAN	EDR Digital Archive
	VALENTINA COLEMAN	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

45 RINCON WAY

Year	Uses	Source
2020	LAURA SALAZAR	EDR Digital Archive
	ARTHUR SALAZAR	EDR Digital Archive
	L SALAZAR	EDR Digital Archive
2014	ARTHUR SALAZAR	Cole Information

47 RINCON WAY

Year	Uses	Source
2020	RICHARD CONKLE	EDR Digital Archive
2014	RICHARD CONKLE	Cole Information

FINDINGS

48 RINCON WAY

Year	Uses	Source
2020	MEGAN RAMER	EDR Digital Archive
2014	JASON MCGEE	Cole Information

49 RINCON WAY

Year	Uses	Source
2020	RICHARD WOO	EDR Digital Archive
	JASMINE WOO	EDR Digital Archive
2014	RICHARD WOO	Cole Information

50 RINCON WAY

Year	Uses	Source
2020	PHAN RIGGS	EDR Digital Archive
	TYLER NELSON	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

51 RINCON WAY

Year	Uses	Source
2020	MEGAN MCWILLIAM	EDR Digital Archive
	SHELAH YOUNG	EDR Digital Archive
	GORDON MCWILLIAM	EDR Digital Archive
	KELLY MCWILLIAM	EDR Digital Archive
	JANELL MCWILLIAM	EDR Digital Archive
2014	GORDON MCWILLIAM	Cole Information

52 RINCON WAY

Year	Uses	Source
2020	STACY BARNES	EDR Digital Archive
	LALEH ABEDINZADEH	EDR Digital Archive
2014	STACY SCHANTZ-CASTILLO	Cole Information

54 RINCON WAY

Year	Uses	Source
2014	ADRIAN MUSCI	Cole Information

56 RINCON WAY

Year	Uses	Source
2020	BRIAN FRY	EDR Digital Archive
	KAZEMINY KATEE	EDR Digital Archive
2014	KENNETH FRANKLIN	Cole Information

58 RINCON WAY

Year	Uses	Source
2020	DEEPAK SUBRAMANIAN	EDR Digital Archive
	AVANTIKA AJIT	EDR Digital Archive
2014	GLENN KEELER	Cole Information

60 RINCON WAY

Year	Uses	Source
2020	IAN HORNSTEIN	EDR Digital Archive
	CARI HORNSTEIN	EDR Digital Archive
2014	JAMES KIM	Cole Information

SANDALWOOD

1 SANDALWOOD

Year	Uses	Source
2020	MICHAEL MALERVY	EDR Digital Archive
2014	MICHAEL MALERVY	Cole Information
2005	MICHAEL MALERVY	Cole Information

3 SANDALWOOD

Year	Uses	Source
2020	VERONICA ROBERSON	EDR Digital Archive
2014	ASHKAN HORMOZFAR	Cole Information
	SHAHRIAR SADEGHI	Cole Information
	BEHNAM RAFIEE	Cole Information
2010	MICHELLE RICE	Cole Information
2005	ANSWER CONSULTING	Cole Information
	PARHAM ABADI	Cole Information
2000	PARHAM ABADI	Cole Information

Year	Uses	Source
1995	ABADI, PARHAM	Cole Information
1992	ABADI, PARHAM	Cole Information

5 SANDALWOOD

Year	Uses	Source
2020	RODERIC MCLEAN	EDR Digital Archive
	DEBORAH MCLEAN	EDR Digital Archive
2014	RODERIC MCLEAN	Cole Information
2010	RODERIC MCLEAN	Cole Information
2005	RODERIC MCLEAN	Cole Information
2000	RODERIC MCLEAN	Cole Information
1995	MCLEAN, RODERIC	Cole Information
1992	MCLEAN, RODERIC	Cole Information

7 SANDALWOOD

Year	Uses	Source
2014	LESLIE MOWERS	Cole Information
2010	CHRISTOPHER ORTEGA	Cole Information
2005	TRAVIS WILKERSON	Cole Information
2000	GERARD BOITEUX	Cole Information

9 SANDALWOOD

Year	Uses	Source
2020	EVELINA CHIANG	EDR Digital Archive
2014	OUY TAN	Cole Information
2010	TAN OUY	Cole Information
2005	TAN OUY	Cole Information
2000	TAN OUY	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

11 SANDALWOOD

Year	Uses	Source
2020	JIM FOLEY	EDR Digital Archive
	JODIE FOLEY	EDR Digital Archive
2014	JAMES FOLEY	Cole Information

Year	Uses	Source
2010	JAMES FOLEY	Cole Information
2005	JAMES FOLEY	Cole Information
2000	JAMES FOLEY	Cole Information
1995	LOYD, LOUISE	Cole Information
1992	LOYD, LOUISE	Cole Information

13 SANDALWOOD

Year	Uses	Source
2020	SHELLEY WILSON	EDR Digital Archive
	PEGGY FISHER	EDR Digital Archive
2014	CASEY HALLAHAN	Cole Information
2010	CASEY HALLAHAN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	YOUNG HAM	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

SANDALWOOD # 7

7 SANDALWOOD # 7

Year	Uses	Source
2020	MICHAEL YOUNG	EDR Digital Archive

SANDALWOOD # 9

3 SANDALWOOD # 9

Year	Uses	Source
2020	PARHAM ABADI	EDR Digital Archive

SANDALWOOD AVE

6 SANDALWOOD AVE

Year	Uses	Source
1980	Sheraga Robt J & Susan M No	Pacific Telephone

SANDALWOOD ST

1 SANDALWOOD ST

Year	Uses	Source
2002	MALERVY Michael	Haines Company
	RVINE	Haines Company
	WEALTH CODE	Haines Company

3 SANDALWOOD ST

Year	Uses	Source
2002	OABADIParham	Haines Company
1997	Abadi Parham	Pacific Bell
1992	Abadi Parham	Pacific Bell

5 SANDALWOOD ST

Year	Uses	Source
2002	SMCLEAN Deborah	Haines Company
	MCLEAN RAoden	Haines Company
1997	Mc Lean Rbderic & Deborah	Pacific Bell
1992	Mc Lean Roderic & Deborah	Pacific Bell

7 SANDALWOOD ST

Year	Uses	Source
2002	SWILKERSONTrav ls	Haines Company

9 SANDALWOOD ST

Year	Uses	Source
2002	OUYTan	Haines Company

11 SANDALWOOD ST

Year	Uses	Source
2002	FOLEYJamos	Haines Company
1997	Loyd Louise	Pacific Bell
	SANDALWOOD	Pacific Bell
	ODD 92656 EVEN 92653	Pacific Bell
1992	Jones J M	Pacific Bell
	Loyd Louise	Pacific Bell

Year	Uses	Source
1992	SANDALWOOD	Pacific Bell

STONEGLEN

1 STONEGLEN

Year	Uses	Source
2020	ROSE PERL	EDR Digital Archive
2014	ROSE PERL	Cole Information
2005	SIDNEY PERL	Cole Information

3 STONEGLEN

Year	Uses	Source
2020	KARINA VESCIO	EDR Digital Archive
	LOGAN VESCIO	EDR Digital Archive
	CLAUDIA VESCIO	EDR Digital Archive
2014	ALICIA BUTLER	Cole Information
	JAMIE WOLF	Cole Information
2010	SCOTT POIROT	Cole Information
2005	SCOTT POIROT	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Avery C L	Pacific Bell

5 STONEGLEN

Year	Uses	Source
2020	GEORGE ALIANO	EDR Digital Archive
	JANICE NEESON	EDR Digital Archive
	LYNN BRENDA	EDR Digital Archive
2005	MARK HOOVER	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	MCLAUGHLIN, BRIAN	Cole Information
1992	Adams Cedric	Pacific Bell
	ADAMS, CEDRIC	Cole Information

FINDINGS

7 STONEGLEN

Year	Uses	Source
2014	MICHAEL GLOCKNER	Cole Information
	RITSUKO POWELL	Cole Information
2010	RITSUKO POWELL	Cole Information
2005	BARBARA MCCLEARY	Cole Information
2000	C TEPFER	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

9 STONEGLEN

Year	Uses	Source
2014	SUSANNE PLUMLEY	Cole Information
2010	SUSANNE PLUMLEY	Cole Information
2005	LISA PICK	Cole Information
2000	FRANCES YOUNG	Cole Information
1992	Eurich Nancy	Pacific Bell

11 STONEGLEN

Year	Uses	Source
2020	MYONG CHUNG	EDR Digital Archive
2014	DANIEL BATTY	Cole Information
2010	DANIEL BATTY	Cole Information
2005	DANIEL BATTY	Cole Information
2000	BARBARA STOKKE	Cole Information
1995	STOKKE, BARBARA C	Cole Information

13 STONEGLEN

Year	Uses	Source
2014	WESLEY AMELUNG	Cole Information
2005	ESTEVAN MARTINEZ	Cole Information
2000	TIFFANY COHEN	Cole Information
1995	BEDFORD, DAVID	Cole Information

15 STONEGLEN

Year	Uses	Source
2020	SHELIA BAILEY	EDR Digital Archive

Year	Uses	Source
2020	SHEILA BAILEY	EDR Digital Archive
2014	SHELIA BAILEY	Cole Information
2010	SCOTT BAILEY	Cole Information
2005	SHEILA BAILEY	Cole Information
1995	GENTRY, JUDY	Cole Information
1992	Henick Shelly G	Pacific Bell
	HENICK, SHELLY G	Cole Information

STONEGLEN # 67

9 STONEGLEN # 67

Year	Uses	Source
2020	B CHADBURN	EDR Digital Archive
	BRIAN CHADBURN	EDR Digital Archive

STONEGLEN # 72

13 STONEGLEN # 72

Year	Uses	Source
2020	WESLEY AMELUNG	EDR Digital Archive

STONEGLEN ST

5 STONEGLEN ST

Year	Uses	Source
1997	Mc Laughlin B	Pacific Bell

STONEY GLN

1 STONEY GLN

Year	Uses	Source
2002	PERI Sidney	Haines Company
	SPERLSidney	Haines Company

2 STONEY GLN

Year	Uses	Source
2002	SMOLGAARDMarh K	Haines Company

3 STONEY GLN

Year	Uses	Source
2002	SPOIROTSco O	Haines Company

5 STONEY GLN

Year	Uses	Source
2002	SMCLAUGHLIN Brian	Haines Company

7 STONEY GLN

Year	Uses	Source
2002	STEPFERC	Haines Company
	TEPFERJ	Haines Company

8 STONEY GLN

Year	Uses	Source
2002	XXXX	Haines Company

9 STONEY GLN

Year	Uses	Source
2002	S 8 U 0 HANANJohn	Haines Company

10 STONEY GLN

Year	Uses	Source
2002	SWALK 9 RAdneae	Haines Company

11 STONEY GLN

Year	Uses	Source
2002	5 S 50 KKE 48rbara	Haines Company

15 STONEY GLN

Year	Uses	Source
2002	SALAZARLsa	Haines Company

SUMMERLAND CIR

42 SUMMERLAND CIR

Year	Uses	Source
2020	JUN LEI	EDR Digital Archive
2014	LORI HANSEN	Cole Information

43 SUMMERLAND CIR

Year	Uses	Source
2020	ESTHER LEE	EDR Digital Archive
	SI LEE	EDR Digital Archive
2014	SI LEE	Cole Information

44 SUMMERLAND CIR

Year	Uses	Source
2020	MICHAEL HUYNH	EDR Digital Archive
	KIEM NGUYEN	EDR Digital Archive
2014	BRUCE HUYNH	Cole Information

45 SUMMERLAND CIR

Year	Uses	Source
2020	NABIL ELIAS	EDR Digital Archive
	GEORGE ELIAS	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

46 SUMMERLAND CIR

Year	Uses	Source
2020	BAKUL PATEL	EDR Digital Archive
	B TR	EDR Digital Archive
2014	BAKUL PATEL	Cole Information

47 SUMMERLAND CIR

Year	Uses	Source
2020	KERI CHEN	EDR Digital Archive
	MICHAEL CHEN	EDR Digital Archive
2014	MICHAEL CHEN	Cole Information

48 SUMMERLAND CIR

Year	Uses	Source
2020	MARY WEBB	EDR Digital Archive
	BRYAN WEBB	EDR Digital Archive
2014	BRYAN WEBB	Cole Information

49 SUMMERLAND CIR

Year	Uses	Source
2020	MARTINDALE MARIE	EDR Digital Archive
	JOANNA MARTINDALE	EDR Digital Archive
	WILLIAM MARTINDALE	EDR Digital Archive
2014	JOANNA FERNANDEZ	Cole Information

50 SUMMERLAND CIR

Year	Uses	Source
2020	PATRICIA ALLEGRE	EDR Digital Archive
	VINCENT ALLEGRE	EDR Digital Archive
	TRACY ALLEGRE	EDR Digital Archive
2014	VINCENT ALLEGRE	Cole Information

51 SUMMERLAND CIR

Year	Uses	Source
2020	SANDY KIEU	EDR Digital Archive
	MICHAEL KIEU	EDR Digital Archive
	THANG KIEU	EDR Digital Archive
2014	THANG KIEU	Cole Information

52 SUMMERLAND CIR

Year	Uses	Source
2020	ROBERT BARNES	EDR Digital Archive
	KATHERINE BARNES	EDR Digital Archive
2014	ROBERT BARNES	Cole Information

53 SUMMERLAND CIR

Year	Uses	Source
2020	MADELYN HOROWITZ	EDR Digital Archive
	BETH HOROWITZ	EDR Digital Archive
	DAVID HOROWITZ	EDR Digital Archive
2014	DAVID HOROWITZ	Cole Information

54 SUMMERLAND CIR

Year	Uses	Source
2020	THOMAS DUONG TO	EDR Digital Archive
2014	THOMAS TO	Cole Information

55 SUMMERLAND CIR

Year	Uses	Source
2020	CHONG PARK	EDR Digital Archive
	JUNGWON PARK	EDR Digital Archive
2014	CHONG PARK	Cole Information

56 SUMMERLAND CIR

Year	Uses	Source
2020	DAVID VAZQUEZ	EDR Digital Archive
	LETICIA RUIZ	EDR Digital Archive
2014	DAVID VAZQUEZ	Cole Information

57 SUMMERLAND CIR

Year	Uses	Source
2020	CHANG WANG	EDR Digital Archive
2014	CHANG WANG	Cole Information

58 SUMMERLAND CIR

Year	Uses	Source
2020	ASHA ROBERTSON	EDR Digital Archive
	NICHOLAS ROBERTSON	EDR Digital Archive
2014	BRANDON FLORANCE	Cole Information

59 SUMMERLAND CIR

Year	Uses	Source
2020	RYAN BAKER	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

60 SUMMERLAND CIR

Year	Uses	Source
2020	MATTHEW LAWTON	EDR Digital Archive
	TENLEY LAWTON	EDR Digital Archive

Year	Uses	Source
2014	TENLEY LAWTON	Cole Information

61 SUMMERLAND CIR

Year	Uses	Source
2020	PAMELA VIRGIN	EDR Digital Archive
2014	KENNETH VIRGIN	Cole Information

62 SUMMERLAND CIR

Year	Uses	Source
2020	MICHELLE PATERSON	EDR Digital Archive
	ISABELLE MIMS	EDR Digital Archive
	PEGGY KERLEY	EDR Digital Archive
	KENNY PATERSON	EDR Digital Archive
2014	KENNETH PATERSON	Cole Information

63 SUMMERLAND CIR

Year	Uses	Source
2020	KARLA AUSTIN	EDR Digital Archive
2014	ROBERT AUSTIN	Cole Information

64 SUMMERLAND CIR

Year	Uses	Source
2020	KAY LEE	EDR Digital Archive
	YOUNG LEE	EDR Digital Archive
	SEONG LEE	EDR Digital Archive
	KYEHYUN LEE	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

65 SUMMERLAND CIR

Year	Uses	Source
2020	TRAVIS OLIVER	EDR Digital Archive
	CATALINA AREYAN	EDR Digital Archive
2014	TRAVIS OLIVER	Cole Information

66 SUMMERLAND CIR

Year	Uses	Source
2020	YOUNG LEE	EDR Digital Archive
	KIM YOUNG	EDR Digital Archive
2014	YOUNG LEE	Cole Information

68 SUMMERLAND CIR

Year	Uses	Source
2020	ANDREW YEOMANS	EDR Digital Archive
	JESSICA YEOMANS	EDR Digital Archive
2014	ANDREW YEOMANS	Cole Information

70 SUMMERLAND CIR

Year	Uses	Source
2020	NICOLE PRUSTY	EDR Digital Archive
	PUSHPA PRUSTY	EDR Digital Archive
	MICHAEL PRUSTY	EDR Digital Archive
	NAIR PRUSTY	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

72 SUMMERLAND CIR

Year	Uses	Source
2020	HIEN NGUYEN	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

74 SUMMERLAND CIR

Year	Uses	Source
2014	ALI DOROUDIAN	Cole Information

76 SUMMERLAND CIR

Year	Uses	Source
2020	ERIC JOHNSON	EDR Digital Archive
	JULIET SU	EDR Digital Archive
	GEORGIA SU	EDR Digital Archive
2014	ERIC JOHNSON	Cole Information

78 SUMMERLAND CIR

Year	Uses	Source
2020	SIERRA MARTIN	EDR Digital Archive
	JAIME DUENAS	EDR Digital Archive
	MARNIE DUENAS	EDR Digital Archive
	MARNIE FUERST	EDR Digital Archive
2014	JAIME DUENAS	Cole Information

80 SUMMERLAND CIR

Year	Uses	Source
2020	NOOSHIN GEORGE	EDR Digital Archive
2014	JIN CHAH	Cole Information

82 SUMMERLAND CIR

Year	Uses	Source
2020	CHIG YU	EDR Digital Archive
	VICTOR YU	EDR Digital Archive
	HAIDI YU	EDR Digital Archive
2014	VICTOR YU	Cole Information

84 SUMMERLAND CIR

Year	Uses	Source
2020	ALIT BRASWELL	EDR Digital Archive
	SCOTT BRASWELL	EDR Digital Archive
	KIMBERLY CEJA	EDR Digital Archive
2014	ARNAUD FORESTIER	Cole Information

86 SUMMERLAND CIR

Year	Uses	Source
2020	ALISSA BROWN	EDR Digital Archive
	JOSEPH SACKSTEDER	EDR Digital Archive
2014	KEVIN FLEMING	Cole Information

88 SUMMERLAND CIR

Year	Uses	Source
2020	SONGLEI PANG	EDR Digital Archive

Year	Uses	Source
2014	CHRIS BASSI	Cole Information

90 SUMMERLAND CIR

Year	Uses	Source
2020	ANTHONY LENCIONI	EDR Digital Archive
	AZARFAR NAGAR	EDR Digital Archive
2014	GRAHAM PIERCE	Cole Information

92 SUMMERLAND CIR

Year	Uses	Source
2020	NICOLA DELASALLE	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information

94 SUMMERLAND CIR

Year	Uses	Source
2020	JANEL BENNETT	EDR Digital Archive
	IBRAHIM FAHMY	EDR Digital Archive
	MICHAEL BENNETT	EDR Digital Archive
2014	JANEL GILLIES	Cole Information

96 SUMMERLAND CIR

Year	Uses	Source
2020	JACQUELINE DOAN	EDR Digital Archive

98 SUMMERLAND CIR

Year	Uses	Source
2020	KAREN AIVAZIAN	EDR Digital Archive
	CINDY ALPERT	EDR Digital Archive
	ROBERT ALPERT	EDR Digital Archive
	ALPERT AIVAZIAN	EDR Digital Archive
2014	CINDY ALPERT	Cole Information

SUMMERWOOD

1 SUMMERWOOD

Year	Uses	Source
2020	PAUL LIPOVANCIUC	EDR Digital Archive

Year	Uses	Source
2020	ELISABETA LIPOVANCIUC	EDR Digital Archive
2014	PAUL LIPOVANCIUC	Cole Information
2005	RAYMOND CARTER	Cole Information
2000	STEVEN CARTER	Cole Information

2 SUMMERWOOD

Year	Uses	Source
2020	ERIC SMALL	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2005	ERIC SMALL	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information

3 SUMMERWOOD

Year	Uses	Source
2020	ERIC SMALL	EDR Digital Archive
2014	DANIEL GRIMM	Cole Information
	COLLEEN MOORE	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

4 SUMMERWOOD

Year	Uses	Source
2020	KIRSTEN HOPPER	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	CHERI BROWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OZKOCAK, VARLIK	Cole Information

5 SUMMERWOOD

Year	Uses	Source
2020	ERIC REKER	EDR Digital Archive
	HIROKO REKER	EDR Digital Archive
	ANDREW REKER	EDR Digital Archive
	DAVID REKER	EDR Digital Archive
2014	CHRISTOPHER HUTCHINSON	Cole Information

Year	Uses	Source
2010	CHRISTOPHER HUTCHINSON	Cole Information
2005	BRYN GILLIS	Cole Information
2000	LESLEY GRAHAM	Cole Information
1995	GRAHAM, LESLEY	Cole Information
1992	REED, X B	Cole Information

6 SUMMERWOOD

Year	Uses	Source
2020	FARHANA BANDUKWALA	EDR Digital Archive
	RAHIL BANDUKWALA	EDR Digital Archive
	CHANDLER DAWSON	EDR Digital Archive
	ROSE GARCIA	EDR Digital Archive
2014	JOHN DAWSON	Cole Information
	RAHIL BANDUKWALA	Cole Information
2010	DIANE BURKE	Cole Information
2005	DIANE BURKE	Cole Information
	ROBERT CENZER	Cole Information
2000	LINDA MOSHER	Cole Information
1995	MOSHER, LINDA L	Cole Information
1991	Rose Ty & Cndy	Pacific Bell

7 SUMMERWOOD

Year	Uses	Source
2020	SHAHRZAD MOATAMEN	EDR Digital Archive
2014	SHAHRZAD MOATAMEN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	RAMON VALENCIA	Cole Information
2000	SIRI PARRENT	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

8 SUMMERWOOD

Year	Uses	Source
2020	ELIZABETH SAWYER	EDR Digital Archive
2014	ELIZABETH SAWYER	Cole Information

Year	Uses	Source
2010	ELIZABETH SAWYER	Cole Information
2005	CHRISTOPHER BLACKBURN	Cole Information
2000	CHRIS BLACKBURN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

9 SUMMERWOOD

Year	Uses	Source
2020	DAVID BRIGHTON	EDR Digital Archive
	YARA BRIGHTON	EDR Digital Archive
2014	WAKAKO MATSUMOTO	Cole Information
2010	WAKAKO MATSUMOTO	Cole Information
2005	CHURCHILL STONE AND TILE	Cole Information
	CHURCHILL STONE & TILE	Cole Information
	NATALIE CHURCHILL	Cole Information
	DAVID GOGLANIAN	Cole Information
2000	KEVIN MACPHERSON	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

10 SUMMERWOOD

Year	Uses	Source
2020	REBECCA CLAUSNITZER	EDR Digital Archive
	REBECCA ANBARDAN	EDR Digital Archive
2014	KEAVON ANBARDAN	Cole Information
2010	REBECCA CLAUSNITZER	Cole Information
2005	DAVID JAY	Cole Information
2000	DAVID JAY	Cole Information
1995	JAY, DAVID A	Cole Information
1992	Jay David A	Pacific Bell
	JAY, DAVID A	Cole Information

11 SUMMERWOOD

Year	Uses	Source
2020	PATRICIA MOON	EDR Digital Archive
2014	PATRICIA MOON	Cole Information

Year	Uses	Source
2010	PATRICIA MOON	Cole Information
2005	PATRICIA MOON	Cole Information
2000	CLARICE FUJITA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

12 SUMMERWOOD

Year	Uses	Source
2020	MARY JARTCKY	EDR Digital Archive
2014	DIANA GUTIERREZ	Cole Information
2010	MARY JARTCKY	Cole Information
2005	MAHNAZ MAHMOODI	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	WELCH, MARK J	Cole Information
1992	Welch Mark	Pacific Bell
	WELCH, MARK	Cole Information

13 SUMMERWOOD

Year	Uses	Source
2014	JULIE KING	Cole Information
2010	ANNMARIE VENETO	Cole Information
2005	ANNMARIE VENETO	Cole Information
2000	DUNG HUYNIH	Cole Information
1995	HUYNH, DUNG T	Cole Information

14 SUMMERWOOD

Year	Uses	Source
2020	SHANA NISWONGER	EDR Digital Archive
	HANNAH LEVY	EDR Digital Archive
	JEREMY NISWONGER	EDR Digital Archive
	SHANNON MORAN	EDR Digital Archive
2014	KANDY AABERG	Cole Information
2010	REBECCA BOUDREAU	Cole Information
2005	BECKY BOUDREAU	Cole Information
2000	REBECCA BOUDREAU	Cole Information

Year	Uses	Source
1995	CHOSTNER, RICHARD	Cole Information

15 SUMMERWOOD

Year	Uses	Source
2020	THOMAS SANDELL	EDR Digital Archive
	KAREN SANDELL	EDR Digital Archive
2014	REBECCA HAUGLAND	Cole Information
2010	THOMAS PAYNE	Cole Information
2005	GREG YOUNG	Cole Information
2000	JAMIE WALKER	Cole Information

16 SUMMERWOOD

Year	Uses	Source
2020	CHRISTOPHER GEARHART	EDR Digital Archive
2014	DAVID BAUM	Cole Information
2010	MARY BAUM	Cole Information
2005	DAVID BAUM	Cole Information
2000	J BAUM	Cole Information

SUMMERWOOD CT

1 SUMMERWOOD CT

Year	Uses	Source
2002	ZARGARi Shapour	Haines Company

2 SUMMERWOOD CT

Year	Uses	Source
2002	HEDBANY Eugene	Haines Company

3 SUMMERWOOD CT

Year	Uses	Source
2002	HENDELJoan	Haines Company
	LENAHANBrian	Haines Company

4 SUMMERWOOD CT

Year	Uses	Source
2002	OZKOCAKVarlrk	Haines Company

FINDINGS

5 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	GRAHAM Lesley	Haines Company

6 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	MOSHERLinda	Haines Company

7 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	PARRENTSri	Haines Company
	STUBBLEFIELD Chriasine	Haines Company

8 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	BLACKBURN C	Haines Company
	BLACKBURNCW	Haines Company
	STEPHENTTom	Haines Company

9 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	COPPOCK Danna	Haines Company

10 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	e JAY David	Haines Company

11 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	FUJITAClarice	Haines Company

13 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	FORRESTBryan	Haines Company
	FORRESTBryan	Haines Company

14 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	BOUODEAURebecca	Haines Company

15 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	YOUNG Gregory	Haines Company

16 SUMMERWOOD CT

Year	*Uses*	*Source*
2002	BAUM Jenniler	Haines Company

SUMMERWOOD ST

2 SUMMERWOOD ST

Year	*Uses*	*Source*
1997	Wright Shannon	Pacific Bell

4 SUMMERWOOD ST

Year	*Uses*	*Source*
1997	Ozkocak Varlik	Pacific Bell

10 SUMMERWOOD ST

Year	*Uses*	*Source*
1997	Jay David A	Pacific Bell

12 SUMMERWOOD ST

Year	*Uses*	*Source*
1997	Mc Neely Gabriel	Pacific Bell

VIA ABRUZZI

1 VIA ABRUZZI

Year	*Uses*	*Source*
2014	KEVIN HITE	Cole Information
2005	MEHMET ULUKAN	Cole Information
2000	ZIBA HONARBAKAT	Cole Information

3 VIA ABRUZZI

Year	Uses	Source
2020	RAZIEH ALHOSSEINI	EDR Digital Archive
	JASMINE SHODJA	EDR Digital Archive
	MANDY WEBB	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	SAMAN SHODJA	Cole Information
2000	SAMAN SHODJA	Cole Information

5 VIA ABRUZZI

Year	Uses	Source
2020	MEE YEONG	EDR Digital Archive
	MICHAEL LEE	EDR Digital Archive
2014	AMY ZABRAN	Cole Information
2010	MICHAEL LEE	Cole Information
2005	MICHAEL LEE	Cole Information
2000	MICHAEL LEE	Cole Information

7 VIA ABRUZZI

Year	Uses	Source
2020	ARTHUR WELLS	EDR Digital Archive
	JANET WELLS	EDR Digital Archive
2014	STEVEN FURLONG	Cole Information
2010	STEVEN FURLONG	Cole Information
2005	STEVEN FURLONG	Cole Information
2000	KARL DOLLBERG	Cole Information

9 VIA ABRUZZI

Year	Uses	Source
2020	ADRIANA MATTHEWS	EDR Digital Archive
2014	ADRIAN MATTHEWS	Cole Information
2010	ANDREW MATTHEWS	Cole Information
2005	ADRIANA MATTHEWS	Cole Information
2000	ANDREW MATTHEWS	Cole Information

Year	Uses	Source
1995	OCCUPANT UNKNOWNN	Cole Information

11 VIA ABRUZZI

Year	Uses	Source
2020	LORA WILLIAMS	EDR Digital Archive
2014	LORA WILLIAMS	Cole Information
2010	LORA THOMAS	Cole Information
2005	LORA THOMAS	Cole Information
2000	LORA THOMAS	Cole Information
1995	THOMAS, LORA L	Cole Information

13 VIA ABRUZZI

Year	Uses	Source
2020	LAURIE TADDONIO	EDR Digital Archive
2014	LAURIE TADDONIO	Cole Information
2010	LAURIE TADDONIO	Cole Information
2005	LAURIE TADDONIO	Cole Information
2000	DANIEL LOCKSHAW	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

15 VIA ABRUZZI

Year	Uses	Source
2020	ROBERT HOUGLAND	EDR Digital Archive
2014	HARRY ASHLEY	Cole Information
2010	HARRY ASHLEY	Cole Information
2005	BETTY ASHLEY	Cole Information
2000	ROBERT HOUGLAND	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

17 VIA ABRUZZI

Year	Uses	Source
2020	CANDACE APLING	EDR Digital Archive
2014	CANDACE APLING	Cole Information
2010	CANDACE APLING	Cole Information
2005	CANDACE APLING	Cole Information

Year	Uses	Source
2000	DOUGLAS DOLAN	Cole Information
1995	ITTNER, REBECCA J	Cole Information
1992	VANBEEK, JIM	Cole Information

19 VIA ABRUZZI

Year	Uses	Source
2020	DEBRA MELIKIAN	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	STEVEN JONES	Cole Information
2005	JENNIFER MCENTEE	Cole Information
2000	JAY DRUMMOND	Cole Information
1995	DRUMMOND, JAY T	Cole Information

21 VIA ABRUZZI

Year	Uses	Source
2020	BARBARA DAVIS	EDR Digital Archive
2014	VAUGHN DAVIS	Cole Information
2010	BARBARA DAVIS	Cole Information
2005	PAMELA BARNETT	Cole Information
2000	SUSAN BARDELL	Cole Information
1995	BARDELL, SUSAN K	Cole Information
1992	BARDELL, SUSAN K	Cole Information

23 VIA ABRUZZI

Year	Uses	Source
2020	RUTH GARROD	EDR Digital Archive
	KEVIN GARROD	EDR Digital Archive
2014	KEVIN GARROD	Cole Information
2010	HAMID SALEHI	Cole Information
2005	GOURMET CLUB	Cole Information
	PROFESSIONAL ACCOUNTING CONCEPTS	Cole Information
	FELIKS ROZEN	Cole Information
2000	FELIKS ROZEN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

25 VIA ABRUZZI

Year	Uses	Source
2020	EBRAHIM FOOLADI	EDR Digital Archive
	ALI FOOLADI	EDR Digital Archive
	MARYAM FOOLADI	EDR Digital Archive
2014	EBRAHIM FOOLADI	Cole Information
2010	MATTHEW KELLY	Cole Information
2005	MARYAM FOOLADI	Cole Information
2000	ROELYN BAUTIST	Cole Information
1995	TSUCHIYA, H	Cole Information

27 VIA ABRUZZI

Year	Uses	Source
2020	BIVOR SHRESTHA	EDR Digital Archive
	USHA KHAND	EDR Digital Archive
2014	USHA KHAND	Cole Information
2010	AMIR ATESHFARAZ	Cole Information
2005	JAY NAM	Cole Information
2000	JASON BACHELDER	Cole Information
1995	KRPAN, P K	Cole Information

29 VIA ABRUZZI

Year	Uses	Source
2020	MITRA JAVAHERI	EDR Digital Archive
	MEHBOUBEH MADJDI	EDR Digital Archive
	AMIR MADJDI	EDR Digital Archive
2014	MITRA JAVAHERI	Cole Information
2010	RANDY STEWART	Cole Information
2005	KARY TURNBULL	Cole Information
2000	PAM HEROD	Cole Information
1995	FAGAN, JAMES J	Cole Information

31 VIA ABRUZZI

Year	Uses	Source
2020	STELLA HINOJOSA	EDR Digital Archive

Year	Uses	Source
2014	ESTELLA HINOJOSA	Cole Information
2010	ESTELLA HINOJOSA	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	JOHN COLLINS	Cole Information
1995	COLLINS, JOHN	Cole Information
1992	COLLINS, JOHN	Cole Information

33 VIA ABRUZZI

Year	Uses	Source
2014	OCCUPANT UNKNOWN	Cole Information
2010	CARLOS GONZALES	Cole Information
2005	SHARON MILLER	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	GONZALEZ, VINCENT V	Cole Information
1992	MABARAK, SURALLE	Cole Information

35 VIA ABRUZZI

Year	Uses	Source
2020	MURUGANAND PALANIVEL	EDR Digital Archive
	HEMA KRISH	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	LISA JOHNSON	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	GREWALL, B	Cole Information

37 VIA ABRUZZI

Year	Uses	Source
2020	KYNAL HESTER	EDR Digital Archive
2014	RAMTIN MALOOL	Cole Information
2010	MARY WESTPHALEN	Cole Information
2005	SEIKO MURAKAMI	Cole Information
1995	MOUCHARD, ANDRE	Cole Information
1992	MOUCHARD, ANDRE	Cole Information

39 VIA ABRUZZI

Year	Uses	Source
2020	ALEX SOBHANI	EDR Digital Archive
2014	BARRIE DASSO	Cole Information
2010	BARRIE DASSO	Cole Information
2005	BARRIE DASSO	Cole Information
2000	BARRIE DASSO	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

41 VIA ABRUZZI

Year	Uses	Source
2020	JOHN FARLEY	EDR Digital Archive
	J 2013 MATTHES	EDR Digital Archive
2014	JOHN FARLEY	Cole Information
2010	RHONDA CLARK	Cole Information
2005	JOOHAE KIM	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

43 VIA ABRUZZI

Year	Uses	Source
2020	LINA SAMOCHINAITE	EDR Digital Archive
	KARINA NAPURI	EDR Digital Archive
2014	AMIR MARVASTI	Cole Information
2010	REZA MARVASTI	Cole Information
2005	DAVID DEUTSCH	Cole Information
2000	MICKEAL MCCOOL	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

45 VIA ABRUZZI

Year	Uses	Source
2020	ALI OZKAYAALP	EDR Digital Archive
2014	ALI OZKAYAALP	Cole Information
2010	ALI OZKAYAALP	Cole Information
2005	ALI OZKAYAALP	Cole Information

Year	Uses	Source
2000	ALI OZKAYAALP	Cole Information
1995	RENSHAW, CHERYL L	Cole Information

47 VIA ABRUZZI

Year	Uses	Source
2020	THOMAS COLLINS	EDR Digital Archive
2014	TOM COLLINS	Cole Information
2010	TOM COLLINS	Cole Information
2005	TOM COLLINS	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	KRUEGER, PAUL	Cole Information

49 VIA ABRUZZI

Year	Uses	Source
2020	SHAWN BERRY	EDR Digital Archive
	AYLIZ MERCANKAYA	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	AYSE MERCANKAYA	Cole Information
2005	AYLIZ MERCANKAYA	Cole Information
2000	GENE MILLER	Cole Information
1995	MILLER, GENE	Cole Information
1992	MILLER, GENE	Cole Information

51 VIA ABRUZZI

Year	Uses	Source
2020	STEPHEN DOUTHAT	EDR Digital Archive
	SUE DOUTHAT	EDR Digital Archive
	ILANI DOUTHAT	EDR Digital Archive
2014	STEPHEN DOUTHAT	Cole Information
2010	STEPHEN DOUTHAT	Cole Information
2005	STEPHEN DOUTHAT	Cole Information
2000	SUE DOUTHAT	Cole Information
1995	DOUTHAT, STEPHEN	Cole Information
1992	DOUTHAT, STEPHEN	Cole Information

53 VIA ABRUZZI

Year	Uses	Source
2020	DANNY LEQUANG	EDR Digital Archive
	ANDREW KORNOFF	EDR Digital Archive
2014	DANNY LEQUANG	Cole Information
2010	DANNY LEQUANG	Cole Information
2005	DANNY LEQUANG	Cole Information
2000	KRISTIN RYNDERS	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

55 VIA ABRUZZI

Year	Uses	Source
2020	JONATHAN COHEN	EDR Digital Archive
2014	SHAI COHEN	Cole Information
2010	ANNA FRAHM	Cole Information
2005	PENNY BROCK	Cole Information
2000	PENNY BROCK	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

57 VIA ABRUZZI

Year	Uses	Source
2020	FRANCIS CARLOS	EDR Digital Archive
2014	FRANCIS CARLOS	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	SUSAN MCINERNEY	Cole Information
2000	JEFFREY MANN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

59 VIA ABRUZZI

Year	Uses	Source
2020	EUGENE BOWAN	EDR Digital Archive
2014	ADAM NEUMANN	Cole Information
2010	PAMELA ROSE	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information

Year	Uses	Source
1995	OCCUPANT UNKNOWNN	Cole Information

61 VIA ABRUZZI

Year	Uses	Source
2020	ANNA WALKER	EDR Digital Archive
	PHILLIP WALKER	EDR Digital Archive
2014	PHILLIP WALKER	Cole Information
2010	PHILLIP WALKER	Cole Information
2005	WALKERS MAINTENANCE	Cole Information
2000	PHILLIP WALKER	Cole Information
1995	WALKER, PHILLIP	Cole Information

63 VIA ABRUZZI

Year	Uses	Source
2020	GWENDOLYN SNOOK	EDR Digital Archive
	GREG WHINNERY	EDR Digital Archive
2014	GREG WHINNERY	Cole Information
2010	GREG WHINNERY	Cole Information
2005	RAMIN MEISAMI	Cole Information
2000	PATRICI MEISAMI	Cole Information
1995	GARCIA, LINDA	Cole Information

65 VIA ABRUZZI

Year	Uses	Source
2020	NAZHA NEHME	EDR Digital Archive
	IBRAHIM DAGHER	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	MANFRED ENDRES	Cole Information
2000	MANFRED ENDRES	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

67 VIA ABRUZZI

Year	Uses	Source
2020	MASAHARU IWANAGA	EDR Digital Archive

Year	Uses	Source
2020	REY IWANAGA	EDR Digital Archive
	HIROMI IWANAGA	EDR Digital Archive
	DAN IWANAGA	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	JERRY KILLIAN	Cole Information
2005	NANCY BLANCHARD	Cole Information
2000	M ARAGONA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

69 VIA ABRUZZI

Year	Uses	Source
2020	CARINA WILLAMS	EDR Digital Archive
2014	STEPHEN WALTERS	Cole Information
2010	STEPHEN WALTERS	Cole Information
2005	JILL KUENNE	Cole Information
2000	JILL KUENNE	Cole Information
1995	KUENNE, JILL C	Cole Information
1992	KUENNE, JILL C	Cole Information

71 VIA ABRUZZI

Year	Uses	Source
2014	DEBRA GARAY	Cole Information
2010	STEVEN HICKMAN	Cole Information
2005	FARHAD AMINDARI	Cole Information
	STEVEN HICKMAN	Cole Information
2000	STEVEN HICKMAN	Cole Information
1995	HICKMAN, STEVEN L	Cole Information

73 VIA ABRUZZI

Year	Uses	Source
2020	JILL CLARK	EDR Digital Archive
	KENDALL CLARK	EDR Digital Archive
	JESSE CLARK	EDR Digital Archive
	BRI DEWEY	EDR Digital Archive

Year	Uses	Source
2014	DAVIS CLARK	Cole Information
2010	EDMOND CLARK	Cole Information
2005	JILL CLARK	Cole Information
2000	JL CLARK	Cole Information
1995	DEWEY, BRI	Cole Information

75 VIA ABRUZZI

Year	Uses	Source
2020	REI OKABAYASHI	EDR Digital Archive
	KEI OKABAYASHI	EDR Digital Archive
	GORDON OKABAYASHI	EDR Digital Archive
	SCOTT THARPE	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	GORDON OKABAYASHI	Cole Information
2005	GORDON OKABAYASHI	Cole Information
2000	GORDON OKABAYASHI	Cole Information

77 VIA ABRUZZI

Year	Uses	Source
2020	FARHAD AMINDARI	EDR Digital Archive
	JOAN AMINDARI	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	FARHAD AMINDARI	Cole Information
2005	FARHAD AMINDARI	Cole Information

VIA ABRUZZI # 137

37 VIA ABRUZZI # 137

Year	Uses	Source
2020	RAMTIN MALOOL	EDR Digital Archive

VIA ABRUZZI # 154

71 VIA ABRUZZI # 154

Year	Uses	Source
2020	DEBRA GARAY	EDR Digital Archive

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VIA ATHENA

9 VIA ATHENA

Year	Uses	Source
2020	MELISSA SALVIN	EDR Digital Archive
	PENNY BROCK	EDR Digital Archive
2014	CHARLES BROCK	Cole Information
2010	PENNY BROCK	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	STEPHEN MCCURDY	Cole Information
1995	MCCURDY, STEPHEN	Cole Information

11 VIA ATHENA

Year	Uses	Source
2020	TIMOTHY SPAETH	EDR Digital Archive
	BRIDGET FINDLEY	EDR Digital Archive
	WILLIAM FINDLEY	EDR Digital Archive
2014	JEREMY YORK	Cole Information
2010	STEVE RIN	Cole Information
2005	CHARLY RIOS	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

13 VIA ATHENA

Year	Uses	Source
2020	SHARAREH SADATSHOKRAEE	EDR Digital Archive
	KIMIA MINAFAR	EDR Digital Archive
	SUSAN AKINS	EDR Digital Archive
2014	SUSAN AKINS	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2000	ANTONIO QUINTERO	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

15 VIA ATHENA

Year	Uses	Source
2020	MIRELLA CEDENO	EDR Digital Archive

Year	Uses	Source
2020	OTTO CEDENO	EDR Digital Archive
	GLORIA CEDENO	EDR Digital Archive
	LUISA VIVAR	EDR Digital Archive
	JESSICA VIVAR	EDR Digital Archive
	ALBERTO VIVAR	EDR Digital Archive
	ALEXIS VIVAR	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OTTO CEDENO	Cole Information
2005	OTTO CEDENO	Cole Information
1995	MILLER, SCOTT	Cole Information
1992	MILLER, SCOTT	Cole Information

17 VIA ATHENA

Year	Uses	Source
2014	WILLIAM KELLY	Cole Information
2005	WILLIAM KELLY	Cole Information
2000	WILLIAM KELLY	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	KAWAMOTO, ICHIRO	Cole Information

19 VIA ATHENA

Year	Uses	Source
2020	JANET MIZBAN	EDR Digital Archive
2014	JANET MIZBAN	Cole Information
2010	JANET MIZBAN	Cole Information
2005	ABBAS MIZBAN	Cole Information
2000	NADER SHEYBANI	Cole Information
1995	STEVENS, ROBERT K	Cole Information

21 VIA ATHENA

Year	Uses	Source
2020	MARYAM HADAVI	EDR Digital Archive
	SAEID HADAVI	EDR Digital Archive
2014	SAEID HADAVI	Cole Information

Year	Uses	Source
2010	SAEID HADAVI	Cole Information
2005	SAEID HADAVI	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	DABIRI, AL A	Cole Information
1992	DABIRI, AL A	Cole Information

23 VIA ATHENA

Year	Uses	Source
2020	ARNOLD TIMMERMANS	EDR Digital Archive
2014	LAMBERT TIMMERMANS	Cole Information
2010	ARNOLD TIMMERMANS	Cole Information
2005	LAMBERT TIMMERMANS	Cole Information
2000	ARNOLD TIMMERMANS	Cole Information
1995	TIMMERMANS, ARNOLD W	Cole Information
1992	TIMMERMANS, ARNOLD W	Cole Information

VIA ITHACA

20 VIA ITHACA

Year	Uses	Source
1970	Kotob Robt I	General Telephone Co., of California

WHITEWOOD

1 WHITEWOOD

Year	Uses	Source
2020	DARREN WARNE	EDR Digital Archive
2014	JENNIFER WAGNER	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	SONJA WASSGREN	Cole Information

2 WHITEWOOD

Year	Uses	Source
2020	DAVID RASCHIATORE	EDR Digital Archive
	COLLEEN RASCHIATORE	EDR Digital Archive
2014	MARGORLE PLANT	Cole Information

Year	Uses	Source
2010	COLLEEN RASCHIATORE	Cole Information
2005	LISA RASCHIATORE	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

3 WHITEWOOD

Year	Uses	Source
2020	LINDA KLOUDA	EDR Digital Archive
2014	JASON SPARLIN	Cole Information
2010	WILLIAM FERGUSON	Cole Information
2005	WILLIAM FERGUSON	Cole Information
2000	J SIEBEL	Cole Information

4 WHITEWOOD

Year	Uses	Source
2020	JAMES BURT	EDR Digital Archive
	BONNIE BURT	EDR Digital Archive
2014	JIM BURT	Cole Information
2010	JIM BURT	Cole Information
2005	JIM BURT	Cole Information
2000	JAMES BURT	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

5 WHITEWOOD

Year	Uses	Source
2020	RICARDO CALDERON	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	JEFFREY LAKE	Cole Information
2005	JEFFREY LAKE	Cole Information
2000	NANCY KINON	Cole Information

6 WHITEWOOD

Year	Uses	Source
2020	NAKHEE HWANG	EDR Digital Archive
2014	KWNAG HWANG	Cole Information
2010	NAKHEE HWANG	Cole Information

Year	Uses	Source
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	RANDOLPH, ADELE J	Cole Information
1992	Randolph A J	Pacific Bell
	RANDOLPH, ADELE J	Cole Information

7 WHITEWOOD

Year	Uses	Source
2014	ANDREW STANFORD	Cole Information
2010	ANDREW STANFORD	Cole Information
2005	ANDREW STANFORD	Cole Information
2000	CAROL MILLAR	Cole Information

8 WHITEWOOD

Year	Uses	Source
2020	JANET RAE	EDR Digital Archive
2014	JANET RAE	Cole Information
2010	JANET RAE	Cole Information
2005	JANET RAE	Cole Information
2000	JANET RAE	Cole Information
1995	MARLENEE, FRAN	Cole Information
1992	Me Millan Richard	Pacific Bell

9 WHITEWOOD

Year	Uses	Source
2020	KEN ISHIMARU	EDR Digital Archive
	ELAINE ISHIMARU	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	KEN ISHIMARU	Cole Information
2000	ELAINE ISHIMARU	Cole Information
1995	BRAUN, DEAN	Cole Information
1992	Braun D & J	Pacific Bell
	BRAUN, DEAN	Cole Information

10 WHITEWOOD

Year	Uses	Source
2020	SHERRY MYERS	EDR Digital Archive
	PAMELA SILVERMAN	EDR Digital Archive
	REBEKAH BITTERMAN	EDR Digital Archive
2014	SHERRY MYERS	Cole Information
2010	GIANFRANCO PICCOLLO	Cole Information
2005	RYAN BUCCOLA	Cole Information
2000	ELEONOR DELROSARIO	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information
1992	Michalek Josephine	Pacific Bell
	MICHALEK, J	Cole Information

11 WHITEWOOD

Year	Uses	Source
2020	AFSHIN YAMINRAFIE	EDR Digital Archive
	MOSHREFI SHIRIN	EDR Digital Archive
2014	AFSHIN YAMINRAFIE	Cole Information
2010	TODD LEWIS	Cole Information
2005	PETER SUSCHKO	Cole Information
1995	BRODY, P	Cole Information

12 WHITEWOOD

Year	Uses	Source
2020	MUHAMIAD-ALI KANTARI	EDR Digital Archive
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

13 WHITEWOOD

Year	Uses	Source
2020	HIROKO YAMASAKI	EDR Digital Archive
	ATSUSHI YAMASAKI	EDR Digital Archive

Year	Uses	Source
2014	ATSUSHI YAMASAKI	Cole Information
2010	ATSUSHI YAMASAKI	Cole Information
2005	ATSUSHI YAMASAKI	Cole Information
1995	HOLT, MARY M	Cole Information

14 WHITEWOOD

Year	Uses	Source
2020	DAVID SCHNEYER	EDR Digital Archive
2014	DAVID SCHNEYER	Cole Information
2010	DAVID SCHNEYER	Cole Information
2005	DAVID SCHNEYER	Cole Information
2000	DAVID SCHNEYER	Cole Information
1995	WHALEN, K E	Cole Information
1992	COOLIDGE, ERIC	Cole Information

15 WHITEWOOD

Year	Uses	Source
2020	JEAN WITHERS	EDR Digital Archive
	DAVID WITHERS	EDR Digital Archive
	SARAH WITHERS	EDR Digital Archive
2014	DAVID WITHERS	Cole Information
2010	JANELLE GRIFFIT	Cole Information
2005	JAIME OCHOA	Cole Information
1995	OCCUPANT UNKNOWNN	Cole Information

16 WHITEWOOD

Year	Uses	Source
2020	MARINELA GOMBOSEV	EDR Digital Archive
	BORIS GOMBOSEV	EDR Digital Archive
	ARSENIJA GOMBOSEV	EDR Digital Archive
	KELLY ERBSTOESSER	EDR Digital Archive
2014	MICHAEL ERBSTOESSER	Cole Information
2010	MICHAEL ERBSTOESSER	Cole Information
2005	BYRON SCHLAGENHAUF	Cole Information

Year	Uses	Source
1995	YOTS, STEPHEN J	Cole Information

62 WHITEWOOD

Year	Uses	Source
2005	VLADIMIR SOLOTVEV	Cole Information

WHITEWOOD CT

1 WHITEWOOD CT

Year	Uses	Source
2002	MARTIN Kerth	Haines Company

2 WHITEWOOD CT

Year	Uses	Source
2002	SRASCHIATORE David	Haines Company

3 WHITEWOOD CT

Year	Uses	Source
2002	SIEBEL Jennifer	Haines Company

4 WHITEWOOD CT

Year	Uses	Source
2002	BURT James	Haines Company

5 WHITEWOOD CT

Year	Uses	Source
2002	SKINON Nancy	Haines Company

6 WHITEWOOD CT

Year	Uses	Source
2002	RANDOLPH Adele	Haines Company
	WHITEWOO 92656 C	Haines Company

7 WHITEWOOD CT

Year	Uses	Source
2002	MILLAR Carol	Haines Company

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8 WHITEWOOD CT

Year	Uses	Source
2002	RAEJanet	Haines Company

9 WHITEWOOD CT

Year	Uses	Source
2002	SISHIMARUKen	Haines Company

10 WHITEWOOD CT

Year	Uses	Source
2002	DELROSARIOEleonor	Haines Company

11 WHITEWOOD CT

Year	Uses	Source
2002	HOUSER Enka	Haines Company

12 WHITEWOOD CT

Year	Uses	Source
2002	SMICHAELJudy	Haines Company

13 WHITEWOOD CT

Year	Uses	Source
2002	HOLTMary	Haines Company
	MONCUR Drake	Haines Company

14 WHITEWOOD CT

Year	Uses	Source
2002	SCHNEYER Davd	Haines Company

15 WHITEWOOD CT

Year	Uses	Source
2002	OCHOAJames	Haines Company

16 WHITEWOOD CT

Year	Uses	Source
2002	SELIASIra	Haines Company

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WHITEWOOD ST

2 WHITEWOOD ST

Year	*Uses*	*Source*
1997	Nelson Mark	Pacific Bell

6 WHITEWOOD ST

Year	*Uses*	*Source*
1997	Randolph A J	Pacific Bell

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ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
1 AMBAR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 AMBER ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 Argonaut	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ARGONAUT STE C	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BAYWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BIRCHMONT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BRENTWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BRENTWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 ELMBROOK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS # 20	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 HILLROSE # 105	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 MARIGOLD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 MARIGOLD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 MARIGOLD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 MARIGOLD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 MARIGOLD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINEOAK # 97	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 SANDALWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 STONEGLEN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
1 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
10 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 ELMBROOK # 58	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
10 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
10 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
10 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 SUMMERWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
10 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
100 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
100 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
101 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
101 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
101 PLAYA CIR # T	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
102 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
102 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
102 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
103 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
103 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
103 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
104 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
105 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
105 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
105 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
106 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
106 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
106 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
107 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
107 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
108 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
108 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
109 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
109 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 AN FIRE S PRINKLE R CORP	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
11 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BAYWOOD # 39	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BRENTWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
11 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 ELMBROOK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
33 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
33 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
34 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
34 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
35 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
35 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
36 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 CABRILLO TER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
36 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
36 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
37 VIAABRUZZI # 137	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
38 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
38 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
39 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 PLAYA CIR # 5	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
39 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
39 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AM B VIRGKTA 9142 E WAAMCE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
4 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
4 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 MARIGOLD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 MARIGOLD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 MARIGOLD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 MARIGOLD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
4 MARIGOLD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 MARIGOLD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
4 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 SUMMERWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
4 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
40 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
40 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
41 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 PLAYA CIR # H	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
41 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
42 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
42 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
43 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 KERRWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 KERRWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
11 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
11 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 STONEGLEN	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 STONEGLEN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
11 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
11 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
11 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
110 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
110 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
111 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
111 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
112 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
112 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
113 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
114 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
114 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
114 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
115 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
115 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
116 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
116 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
117 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
117 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
118 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
118 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
118 Playa Circle	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
119 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
119 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
12 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 BIRCHMONT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
12 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
12 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
12 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 SUMMERWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
12 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
120 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
120 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
121 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
121 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
122 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
122 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
123 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
123 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
124 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
124 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
125 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
125 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
126 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
126 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
127 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
127 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
128 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
128 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
128 PLAYA CIR # Z	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
129 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
129 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
13 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 AMBER ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
13 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BAYWOOD # 40	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BRENTWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
13 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
13 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
13 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SANDALWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SANDALWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 STONEGLEN # 72	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
61 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
61 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
62 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
62 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
62 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
62 PLAYA CIR # M	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
62 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
62 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
62 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
63 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
63 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
64 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
65 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
65 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
66 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
67 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
67 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
68 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
68 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
68 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
68 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
68 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
69 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
69 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BRENTWOOD # 88	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BROOKLINE CIR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SANDALWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SANDALWOOD # 7	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 STONEGLEN	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
7 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
7 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
70 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
70 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
70 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
70 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
71 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
71 VIAABRUZZI # 154	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
72 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
72 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
73 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
13 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
13 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
130 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
130 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
131 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
131 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
132 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
132 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
133 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
134 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
134 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
135 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
135 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
136 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
137 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
137 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
138 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
138 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
139 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
139 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 AMBAR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
14 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
14 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
14 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINE OAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
14 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
14 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
14 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
140 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
140 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
141 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
141 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
142 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
142 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
143 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
143 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
144 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
144 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
145 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
145 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
146 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
146 PLAYA CIR # BB	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
147 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
147 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
148 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
148 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
148 PLAYA CIR # CC	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
149 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBAR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 BRENTWOOD # 85	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 ELMBROOK # 52	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 HILLROSE ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 STONEGLEN	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 STONEGLEN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
73 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
74 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
74 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
74 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
74 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
74 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
75 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
75 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
76 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
76 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
76 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
76 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
76 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
77 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
78 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
78 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
78 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
78 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
78 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
79 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
79 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
79 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 AMBER ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
8 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
8 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 ELMBROOK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
8 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 HILLROSE ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
8 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
8 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
8 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
80 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
80 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
80 PLAYA CIR # Q	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
80 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
80 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
81 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
81 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
81 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
82 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
82 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
82 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
82 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
82 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
82 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
83 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
83 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
83 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
84 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
84 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
84 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
84 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
84 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
85 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 Argonaut	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
85 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
86 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
86 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
86 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
86 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
87 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
87 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
87 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
88 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
88 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
88 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
88 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
88 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
89 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
89 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
89 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
89 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
9 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BRENTWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
9 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
9 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD # 27	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
15 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
15 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
150 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
150 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
151 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
151 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
152 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
152 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
153 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
153 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
154 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
154 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
155 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
155 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
156 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
157 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
157 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
158 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
159 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
159 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 AMBER DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
16 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 BIRCHMONT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

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Address Researched	Address Not Identified in Research Source
16 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 HILLROSE ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
16 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
16 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
16 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
160 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
160 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
161 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
161 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
162 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
162 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
163 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
163 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
164 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
164 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
165 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
165 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
166 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
167 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
168 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
168 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
169 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
169 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
17 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
17 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
17 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
170 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
170 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
171 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
171 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
172 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
173 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
173 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
174 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
174 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
175 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
175 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
176 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
176 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
177 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
178 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
178 PLAYA CIR # GG	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
179 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
18 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
18 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
180 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
180 PLAYA CIR # HH	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
181 PLAYA CIR # 16	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
182 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
182 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
182 PLAYA CIR # HH	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
183 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
183 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
184 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 BAYWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
19 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
19 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
19 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 7WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
2 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
2 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK # 60	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 ELMBROOK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
2 PINE OAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
2 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 SUMMERWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
2 WHITEWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
20 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
20 VIA ITHACA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
21 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
21 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
21 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
22 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
22 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 ATHENA	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
23 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
23002 ALISO CREEK RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23002 ALISO CREEK RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23002 ALISO CREEK RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23002 ALISO CREEK RD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23002 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23002 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23002 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23011 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23022 ALISO CREEK RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
23092 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
23094 ALISO CREEK RD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
24 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
25 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 BAYWOOD # 43	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25343 Cedarbrook	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
25422 CEDARBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK CIR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
25422 CEDARBROOK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
26 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
27 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 BAYWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
27 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
27 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 AVENIDA CASTILLA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
28 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
28 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
29 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
29 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 BRENTWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BRENTWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BRENTWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS # 19	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 KERRWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 MARIGOLD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 MARIGOLD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 MARIGOLD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 MARIGOLD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SANDALWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
9 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SANDALWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEGLEN	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEGLEN # 67	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
9 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAATHENA	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAATHENA	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAATHENA	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAATHENA	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 VIAATHENA	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
9 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
9 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
90 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
90 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
90 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
90 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
90 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
90 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
91 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
91 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
92 Argonaut	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT STE 110	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 ARGONAUT STE 220	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
92 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
92 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
93 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
93 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
93 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
93 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
94 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
94 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
94 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
94 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
94 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
95 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
95 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
95 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
96 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
96 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
96 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
97 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
97 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
98 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
98 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
98 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
98 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
99 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
99 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 MARIGOLD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINE OAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 SANDALWOOD # 9	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEGLEN	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEGLEN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEGLEN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
3 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
3 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
30 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
30 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
31 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
31 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
32 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
32 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
43 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
43 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
44 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
44 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 PLAYA CIR # 82	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
45 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
45 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
46 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
46 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
47 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
47 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 OLD MISSION RD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 OLD MISSION RD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
48 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
48 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 CALLE ARAGO	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
49 CORONEL PL	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
49 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
49 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 AMBER	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 Argonaut	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BAYWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BIRCHMONT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BRENTWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BRENTWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BRENTWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BRENTWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 BROOKLINE LN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK # 54	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 ELMBROOK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS # 23	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 KERRWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 KERRWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 KERRWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 KERRWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 KERRWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINE OAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINE OAK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SANDALWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEGLEN	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEGLEN	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEGLEN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEGLEN ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 STONEY GLN	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
5 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 VIA ABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 VIA ABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 VIA ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 VIA ABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 VIA ABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
5 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
50 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
50 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
51 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 ARGONAUT ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 OLD MISSION RD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
51 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
51 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
52 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
52 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
53 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
53 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 GOLF DR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 GOLF DR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
54 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
54 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
55 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
55 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 CALLE CADI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
56 PLAYA CIR # L	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
56 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 CALLE CADI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
57 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
57 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
58 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
58 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 CALLE CADI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 VIAABRUZZI	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 VIAABRUZZI	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 VIAABRUZZI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 VIAABRUZZI	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
59 VIAABRUZZI	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 AMBER	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
6 AMBER	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 AMBER	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 AMBER	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 AMBER	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ASHWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 BIRCHMONT	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 BIRCHMONT	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
6 BIRCHMONT	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 BIRCHMONT	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 BIRCHMONT	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ELMBROOK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ELMBROOK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ELMBROOK	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ELMBROOK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 ELMBROOK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 GLENOAKS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 GLENOAKS	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 GLENOAKS	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 GLENOAKS	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 GLENOAKS # 14	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 GLENOAKS ST	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 HILLROSE	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
6 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 HILLROSE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 HILLROSE	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 HILLROSE	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINE AS	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINE OAK	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINE OAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINE OAK ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINEOAK	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINEOAK	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINEOAK	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PINEOAK	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
6 PINOS	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PLAYA CIR	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 RAINWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SANDALWOOD AVE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
6 SUMMERWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 SUMMERWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2020, 2017, 2014, 2010, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2020, 2017, 2014, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD CT	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
6 WHITEWOOD ST	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 ANACAPA LN	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 ANACAPA LN	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
60 CALLE CADI	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 HILLROSE DR	2020, 2017, 2014, 2010, 2005, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 PLAYA CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 PLAYA CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 RINCON WAY	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 RINCON WAY	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 SUMMERLAND CIR	2017, 2014, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920
60 SUMMERLAND CIR	2020, 2017, 2010, 2005, 2002, 2001, 2000, 1997, 1995, 1992, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
95 Argonaut	2017, 2001, 1991, 1986, 1980, 1975, 1971, 1970, 1966, 1965, 1961, 1960, 1956, 1955, 1952, 1950, 1946, 1945, 1941, 1936, 1930, 1926, 1925, 1922, 1921, 1920

Argonaut - MLC Holdings, Inc.
95 Argonaut
Aliso Viejo, CA 92656

Inquiry Number: 7614512.3
April 04, 2024

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

04/04/24

Site Name:

Argonaut - MLC Holdings, Inc.
95 Argonaut
Aliso Viejo, CA 92656
EDR Inquiry # 7614512.3

Client Name:

Hillmann Environmental Co.
1745 W Orangewood Avenue
Orange, CA 92868-0000
Contact: Vivianne Bisson

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Hillmann Environmental Co. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 0C9D-4EAD-B4F7

PO # C3-9987

Project Argonaut - MLC Holdings, Inc.

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 0C9D-4EAD-B4F7

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

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APPENDIX F

Other Documents / Lab Results

Public Health Services
Environmental Health Division – Records

Name: Vivianne Bisson **Email:** vbisson@hillmann.com **Date:** April 8, 2024

1. Please use this from to specify the records you need.

2. So that we **can help you** obtain the appropriate records, please describe the reason the records are being requested.

   Due Diligence for Phase I ESA

   Property located at: 95 Argonaut, Aliso Viejo 92656; APN: 623-091-01

3. For information on one or more sites (e.g., all sites on one street) please provide in the Portal specific address number/s for each site. We are unable to search by APN #, map coordinates, or cross streets.

4. Attach this form to your request at the records Portal: orangecounty.nextrequest.com

Restaurants, Markets, Food Vehicles, Cottage Food, & other Food Facilities
Recent inspection records for most food establishments are available at: ocfoodinfo.com
Additional lists and other information is available at ochealthinfo.com/eh/home/reports

- ☐ Complaint Investigation
- ☐ Health Permit (Current year)
- ☐ Application for the Health Permit (not available for all types of records)
- ☐ Inspection Report dated older than 2 years **Date(s) from:** _____ **to:** _____
- ☐ Food Plan Check Record **SR Number:** _____

Hotel/Motel, Residential Housing

- ☐ Complaint Investigation
- ☐ Inspection Report **Date(s) from:** _____ **to:** _____
- ☐ Notices sent to Owner

Site Remediation/Site Assessment:
Note: Most records for Leaking Underground Storage Tank sites are immediately available on Geotracker: https://geotracker.waterboards.ca.gov
Additional Site remediation cases are available at ochealthinfo.com/eh/home/reports

- ☑ Local Oversight Program (Leaking Underground Storage Tank Site)
- ☑ Industrial Clean-Up Program (Industrial Clean-up Site)
- ☑ Orange County UST Program (Non-fuel UST Cleanup Site)

Hazardous Materials & Hazardous Waste Records **Date(s) from: _____ to: _____**
Facility lists are available at ochealthinfo.com/eh/home/reports

CUPA (Please contact **Anaheim** Fire Dept to obtain CUPA records for addresses within Anaheim city limits.)

- ☑ Hazardous Materials Business Plan File (CA Environmental Reporting System/CERS submittals)
  (Please contact these cities directly for Hazardous Materials Business Plan File, Chemical Disclosure, and/or Electronic Submittal; **Fountain Valley, Fullerton, Huntington Beach, La Habra, Orange**)
- ☑ Above Ground Petroleum Storage Tank (APST)
- ☑ Underground Storage Tank (Please contact **Fullerton**, **Orange** directly for UST records in those cities)
- ☑ Hazardous Waste
- ☑ Tiered Permitting
- ☑ CalARP

☑ Complaint record(s) _____

Other Program Records **Date(s) from: _____ to: _____**
Beach Closures can be found at ocbeachinfo.com

- ☐ Medical Waste _____
- ☐ Body Art _____
- ☐ Public Pools/Spa; Please note the **name** of the **complex** where the pool is located:

  _____
  - ☐ Pool Complaint Record
  - ☐ Pool Inspection Report
  - ☐ Pool Plan Check Record **SR Number:** _____
- ☐ Cross Connection: backflow *tester* list can be found at ochealthinfo.com/eh/water/bftesters
- ☐ Liquid Waste Hauling. Truck name or address: _____
- ☐ Solid Waste Facility
- ☑ Well records (Please contact these cities directly for information on wells: **Anaheim, Buena Park, Fountain Valley, Orange, San Clemente**)
  - ☑ Water Wells
  - ☑ Monitoring Wells
  - ☑ Soil Boring
  - ☐ Other Well: _____

☑ Other Records**:**_____

Request Visibility: Unpublished

Request 24-2162 Open

Dates

Received
April 10, 2024 via web

Requester

Vivianne Bisson

vbisson@hillmann.com

714-321-4810

Hillmann Consulting

Invoices

No invoices due

Staff assigned

Departments
Environmental Health

Point of contact
EHRecords

Request

Hello, I need to look at all records for the following:

95 Argonaut, Aliso Viejo 92656

- **Hazardous Materials Disclosure (HMD)**
- **Hazardous Waste (HW)**
- **Underground Storage Tank (UST)**
- **Aboveground Petroleum Storage Tank (APST)**
- **California Accidental Release Prevention (CalARP)**

Thank you!

Timeline **Documents**

All documents

1-1 / 1

Folders

Filter by folder name

filter by folder name

All Documents

Documents not in folders

Requester uploads

1 / 1 results in 'All Documents'

Filter by document name

filter by document nam

Select all

Uploaded: 04/10/2024

OC FOIA 95 Argonaut .pdf
Requester uploads

Request Visibility: Unpublished

Request 24-2162 Closed

Dates

Received

April 10, 2024 via web

Requester

Vivianne Bisson

vbisson@hillmann.com

714-321-4810

Hillmann Consulting

Invoices

No invoices due

Staff assigned

Departments

Environmental Health

Point of contact

Liza Rodriguez

Request

95 Argonaut, Aliso Viejo 92656

NO RECORDS FOUND ***LR

Hello, I need to look at all records for the following:

95 Argonaut, Aliso Viejo 92656

- **Hazardous Materials Disclosure (HMD)**
- **Hazardous Waste (HW)**
- **Underground Storage Tank (UST)**
- **Aboveground Petroleum Storage Tank (APST)**
- **California Accidental Release Prevention (CalARP)**

Thank you!

Timeline Documents

Request closed

Public

No responsive records. Response has been made in accordance with the California Public Records Act.

April 17, 2024, 8:32am by Staff

Message to requester

Requester + Staff

We are unable to locate some or all of the records requested. If you have any questions please contact this office at (714) 433-6015.

This Agency may not be the only source of records. You may wish to check with

the OCPW (OC Public Works), Fire Department, Water Quality Control Board, and/or the State Department of Health Services for records.

April 17, 2024, 8:32am by Staff

Message to requester Requester + Staff

The County is processing your request and will provide you with the status of your PRA request within 10 calendar days. If the 10th day is a weekend or holiday, the reply will be the next business day. A list of County Custodian of Records and Frequently Asked Questions can be found here.

April 10, 2024, 9:24am

Department assignment Public

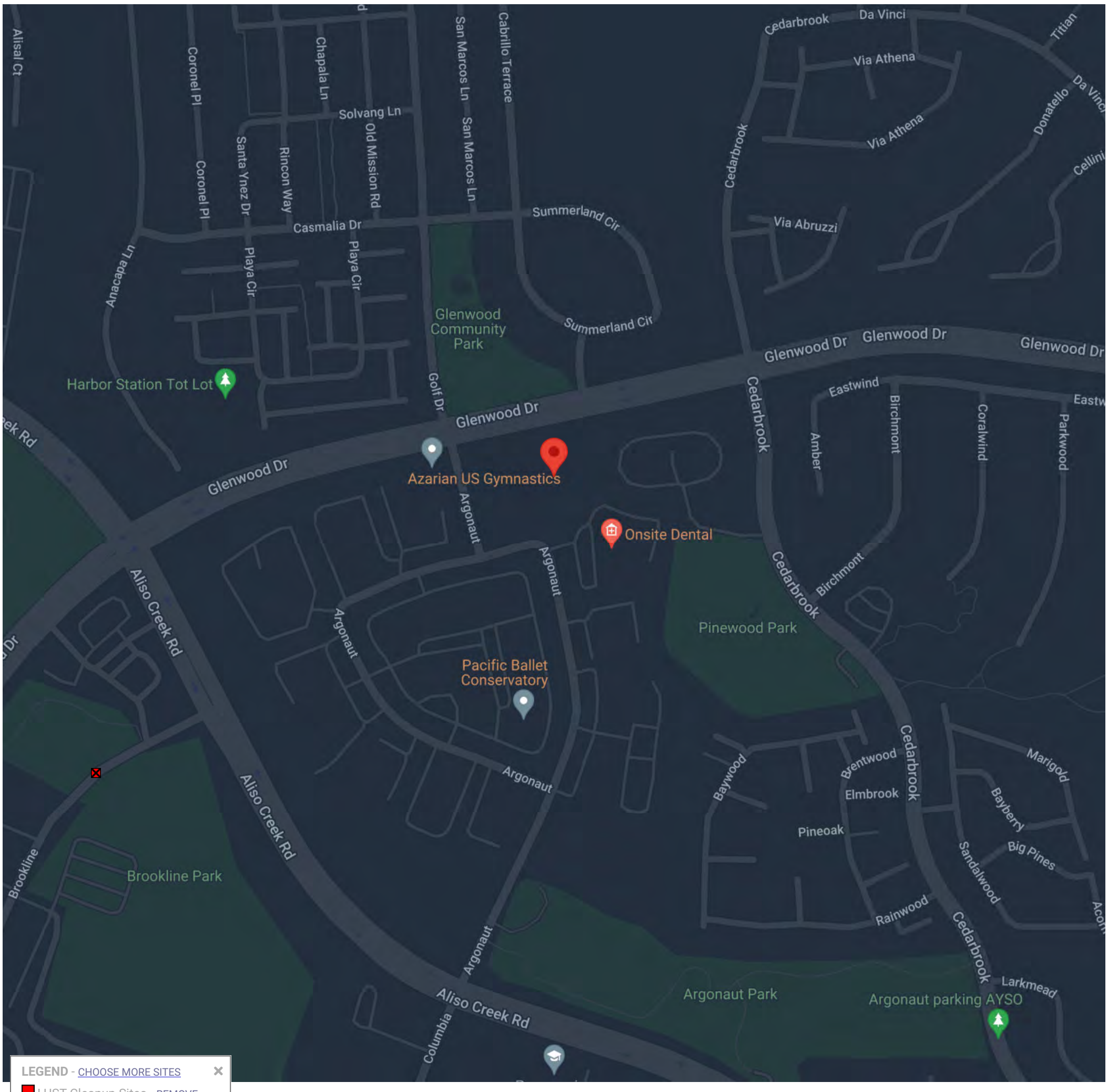
Environmental Health

April 10, 2024, 9:24am by the requester

Request opened Public

Request received via web

April 10, 2024, 9:24am by the requester



LEGEND - CHOOSE MORE SITES

- LUST Cleanup Sites - REMOVE
- Cleanup Program Sites - REMOVE
- Military Cleanup Sites - REMOVE
- Military Privatized Sites - REMOVE
- Military UST Sites - REMOVE

☒ *Signifies a Closed Site*

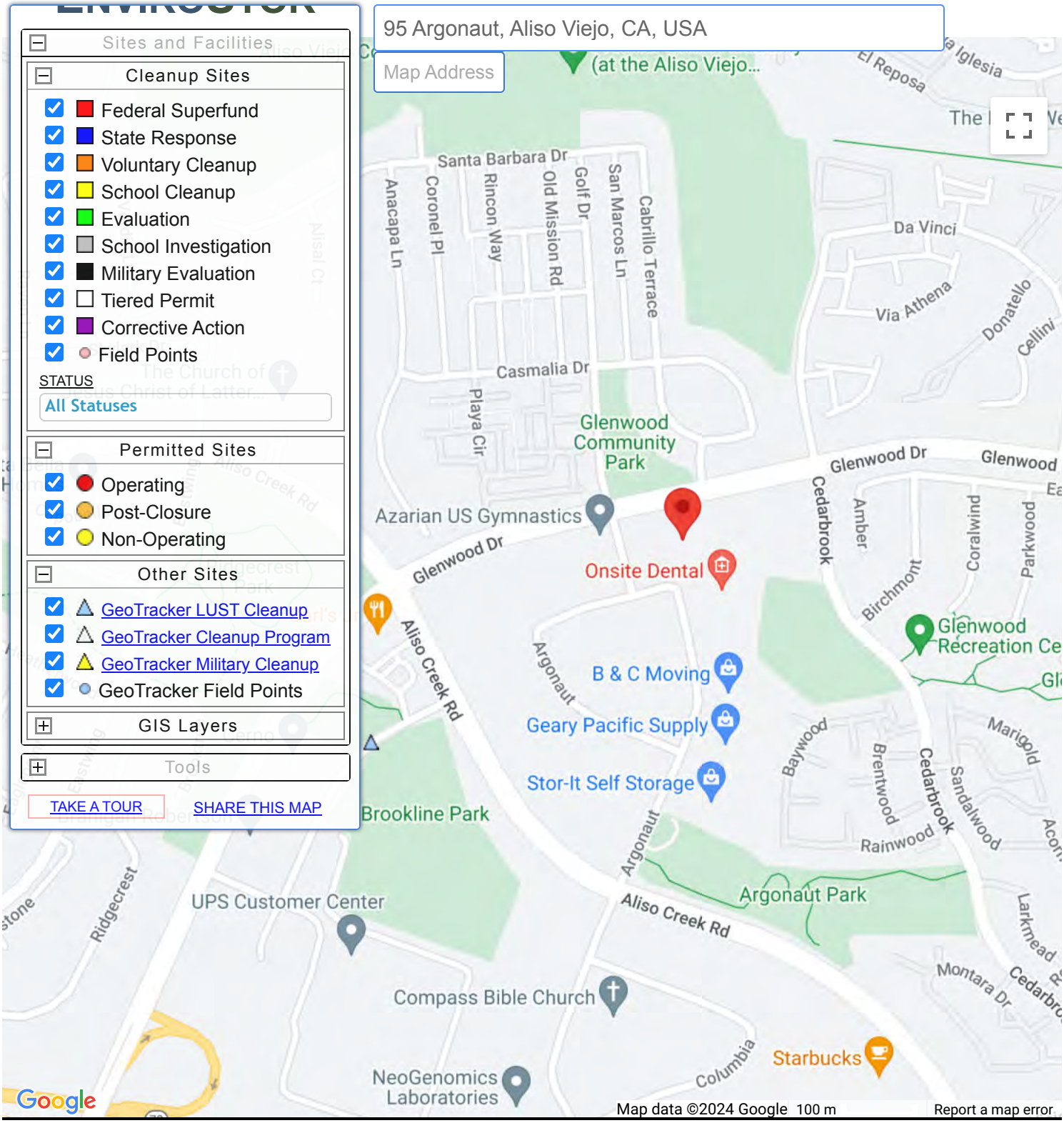
ACTIVE MAP COVERAGES:

- Military Bases - ℹ 📖 - REMOVE

LIST SITES VISIBLE ON MAP

Map data ©2024 Google 50 m

Sites Shown on Map: 1 Total Sites 0 Open Sites 1 Closed Sites 0 Sites w/Water Quality Data



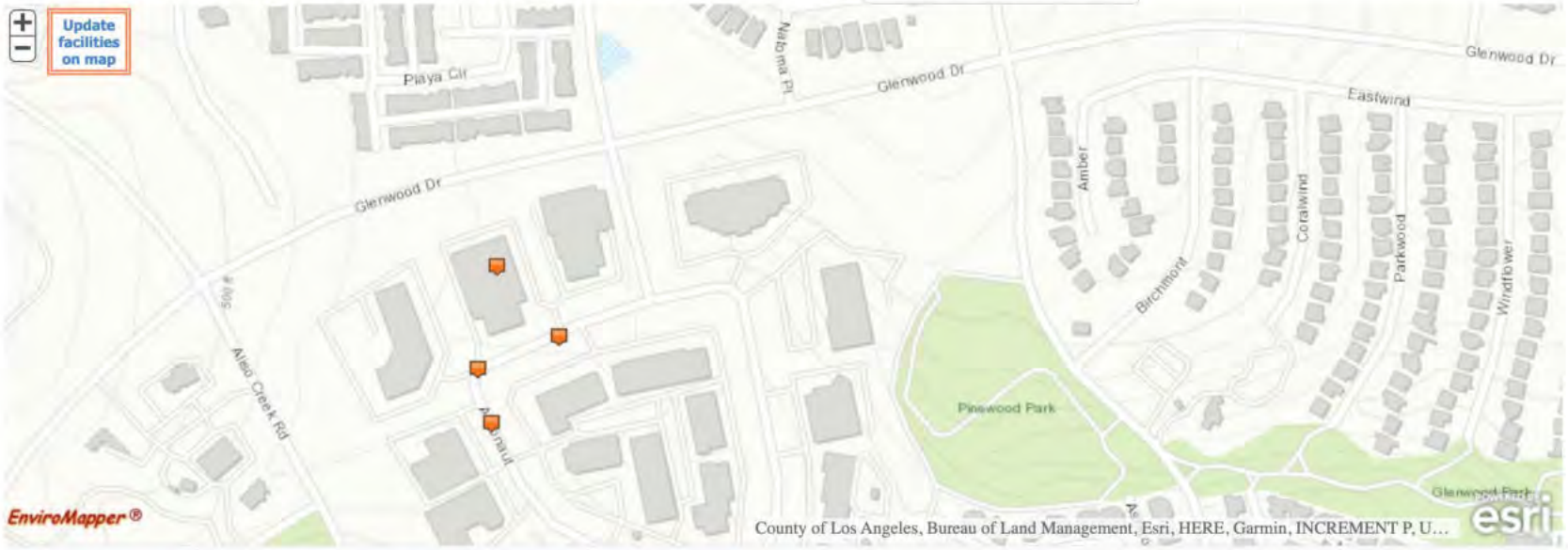
SITES CURRENTLY VISIBLE ON MAP — 0 SITES LISTED — EXPORT THIS LIST TO EXCEL

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY

You searched on:

Area: 33.592788633594516 - -117.72737639850189/33.59636336857765 - -117.72147553866962

API Link for Report Data: (Copy and paste the link below to view the data from this report): https://data.epa.gov/efse



Copy | CSV | Excel | Print | JSON

An official website of the United States government

Multisystem Search

You searched on:
Area: 33.592788633594516 - -117.72737639850189/33.59636336857765 - -117.72147553866962

API Link for Report Data: (Copy and paste the link below to view the data from this report):
https://data.epa.gov/efse

Copy | CSV | Excel | Print | JSON

FACILITY INFORMATION ↕	ICIS-Air ↕	ACRES ↕	BR ↕
AMBRY GENETICS CORP 15 ARGONAUT, ALISO VIEJO, CA, 92656 Latitude:33.59348, Longitude:-117.72646 Summary Report <> Facility Report Compliance Report			View Report

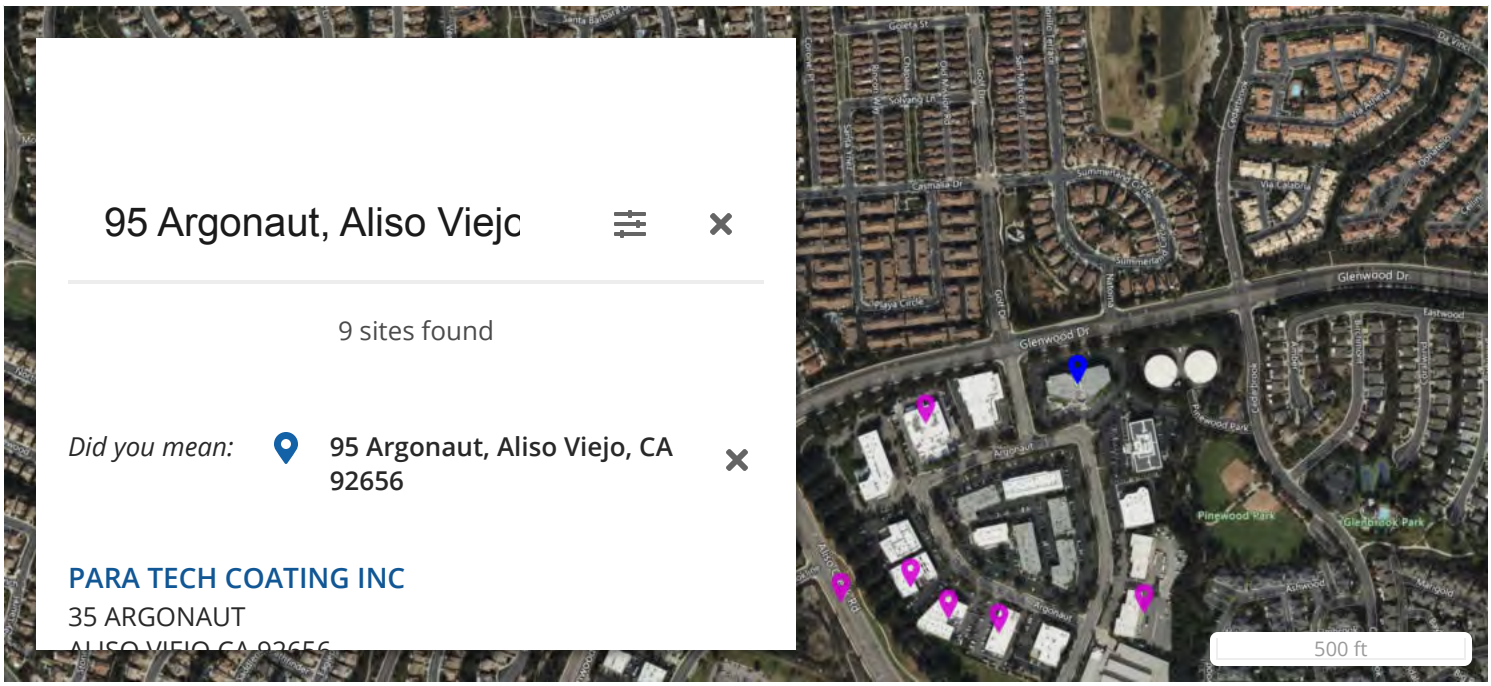
FACILITY INFORMATION ↕	ICIS-Air ↕	ACRES ↕	BR ↕
AMBRY GENETICS CORPORATION 7 ARGONAUT, ALISO VIEJO, CA, 92656 Latitude:33.59416, Longitude:-117.72631 Summary Report <> Facility Report Compliance Report			View Report
HUNTER GRAPHICS INC 21 ARGONAUT, ALISO VIEJO, CA, 92656 Latitude:33.59312, Longitude:-117.72635 Summary Report <> Facility Report Compliance Report			

Privacy and Security Notice

<https://www.epa.gov/privacy/privacy-and-security-notice>

About

CalEPA Regulated Site Portal



Yana Garcia
Secretary for
Environmental Protection

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806

Gavin Newsom
Governor

Facility Search Results

Selection Criteria:

Facility:	ARGONAUT
Search on:	Physical Address
Zip:	92656
Status:	Active and Inactive
Sort Direction:	asc
Sorted By:	EPA ID
Records Found:	0

The Department of Toxics Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Report Generation Date: 04/03/2024

GOLDEN RAIN FOUNDATION OF LAG HI
24401 MOULTON PKY
LAGUNA HILLS, CA 92653

Inquiry Number:
April 5, 2024

EDR Site Report™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of federal, state and local environmental databases.

Section 1: Facility Detail Reports . . . . . Page 3

All available detailed information from databases where sites are identified.

Section 2: Databases and Update Information. . . . . Page 5

Name, source, update dates, contact phone number and description of each of the databases for this report.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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SECTION 1: FACILITY DETAIL REPORTS

GOLDEN RAIN FOUNDATION OF LAG HILLS
24401 MOULTON PKY
LAGUNA HILLS, CA 92653
EDR ID #S102432591

Databases:
L_REG_9: Leaking Underground Storage Tank Report
EMI: Emissions Inventory Data

LUST REG 9:

Region:	9
Status:	Case Closed
Case Number:	9UT708
Local Case:	85UT35
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	Not reported
Local Agency:	Orange
How Found:	Not reported
How Stopped:	Not reported
Source:	Not reported
Cause:	Not reported
Lead Agency:	Local Agency
Case Type:	Soil only
Date Found:	/ /
Date Stopped:	/ /
Confirm Date:	/ /
Submit Workplan:	Not reported
Prelim Assess:	/ /
Desc Pollution:	Not reported
Remed Plan:	/ /
Remed Action:	Not reported
Began Monitor:	Not reported
Release Date:	10/03/1985
Enforce Date:	Not reported
Closed Date:	10/3/85
Enforce Type:	Not reported
Pilot Program:	LOP
Basin Number:	901.14
GW Depth:	Not reported
Beneficial Use:	Not reported
NPDES Number:	Not reported
Priority:	Not reported
File Dispn:	File discarded, case closed
Interim Remedial Actions:	No
Cleanup and Abatement order Number:	Not reported
Waste Discharge Requirement Number:	Not reported

EMI:

Name:	GOLDEN RAIN FOUNDATION OF LAG HILLS
Address:	24401 MOULTON PKY
City,State,Zip:	LAGUNA HILLS, CA 92653
Year:	2002
County Code:	30
Air Basin:	SC
Facility ID:	33148
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	GOLDEN RAIN FOUNDATION OF LAG HILLS
Address:	24401 MOULTON PKY
City,State,Zip:	LAGUNA HILLS, CA 92653
Year:	2003
County Code:	30
Air Basin:	SC
Facility ID:	33148
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported

SECTION 1: FACILITY DETAIL REPORTS

...Continued...

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	GOLDEN RAIN FOUNDATION OF LAG HILLS
Address:	24401 MOULTON PKY
City,State,Zip:	LAGUNA HILLS, CA 92653
Year:	2004
County Code:	30
Air Basin:	SC
Facility ID:	33148
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.053959
Reactive Organic Gases Tons/Yr:	1.01
Carbon Monoxide Emissions Tons/Yr:	0.36
NOX - Oxides of Nitrogen Tons/Yr:	0.428
SOX - Oxides of Sulphur Tons/Yr:	0.00257
Particulate Matter Tons/Yr:	0.0326
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.03

SECTION 2: DATABASES AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

DATABASES FOUND IN THIS REPORT

CA LUST: Geotracker's Leaking Underground Fuel Tank Report
Source: State Water Resources Control Board
Telephone: see region listings for the contact phone numbers
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/05/2024
Date of Next Scheduled Update: 06/17/2024

CA L_REG_9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 09/26/2011
Date of Next Scheduled Update: 01/09/2012

CA EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2021
Database Release Frequency: Varies
Date of Last EDR Contact: 03/14/2024
Date of Next Scheduled Update: 06/24/2024

ARTISTIC MAINTENANCE INC
SE CORNER MOULTON & RIDGE ROUTE
LAGUNA HILLS, CA 92653

Inquiry Number:
April 5, 2024

EDR Site Report™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of federal, state and local environmental databases.

Section 1: Facility Detail Reports . . . . . Page 3

All available detailed information from databases where sites are identified.

Section 2: Databases and Update Information. . . . . Page 4

Name, source, update dates, contact phone number and description of each of the databases for this report.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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SECTION 1: FACILITY DETAIL REPORTS

ARTISTIC MAINTENANCE INC
SE CORNER MOULTON & RIDGE ROUTE
LAGUNA HILLS, CA 92653
EDR ID #S128935388

Databases:
CPS-SLIC: Statewide SLIC Cases

CPS-SLIC:

Name:	ARTISTIC MAINTENANCE INC
Address:	SE CORNER MOULTON & RIDGE ROUTE
City,State,Zip:	LAGUNA HILLS, CA 92653
Region:	STATE
Facility Status:	Completed - Case Closed
Status Date:	11/28/1995
Global Id:	T10000019929
Lead Agency:	ORANGE COUNTY
Lead Agency Case Number:	95IC029
Latitude:	33.62074
Longitude:	-117.73104
Case Type:	Cleanup Program Site
Case Worker:	GSH
Local Agency:	ORANGE COUNTY
RB Case Number:	Not reported
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
EPA Region:	9
Coordinate Source:	Not reported
Cuf Case:	NO
Quantity Released Gallons:	Not reported
Begin Date:	08/14/1993
Leak Reported Date:	Not reported
How Discovered:	Not reported
How Discovered Description:	Not reported
Discharge Source:	Not reported
Discharge Cause:	Not reported
Stop Method:	Not reported
Stop Description:	Not reported
No Further Action Date:	11/28/1995
CA Water Watershed Name:	Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
Dwr Groundwater Subbasin Name:	Not reported
Disadvantaged Community:	Disadvantaged Community
CA Enviroscreen 3 Score:	41-45%
CA Enviroscreen 4 Score:	35-40%
Military DOD Site:	No
Facility Project Subtype:	Not reported
RWQCB Region:	SANTA ANA RWQCB (REGION 8)
Site History:	Not reported

SECTION 2: DATABASES AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

DATABASES FOUND IN THIS REPORT

CA CPS-SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Telephone: 866-480-1028
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/04/2023
Database Release Frequency: Varies
Date of Last EDR Contact: 03/05/2024
Date of Next Scheduled Update: 06/17/2024

Well Finder CalGEM GIS Powered by WellSTAR



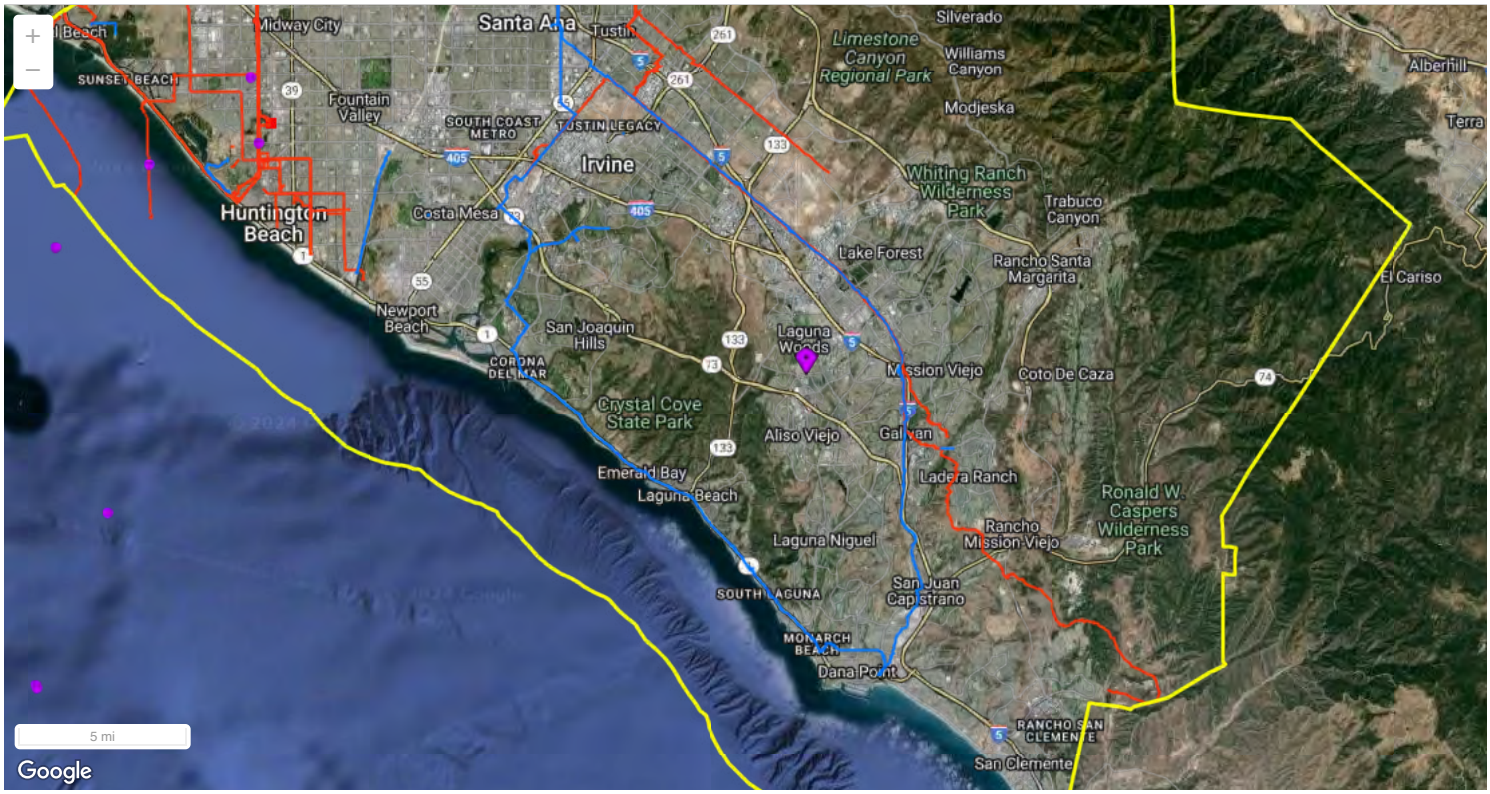
Layer List

Layers

- Notice & Permit
- Well
- Facility
- Underground Gas Storage
- Well Stimulation
- TR26 Onshore Seep Count
- CalGEM District
- CalGEM Oil & Gas Field
- City, Island, Offshore Lease, and Platform
- Public Land Survey System
- Legislative District
- County

Geologic Map of California

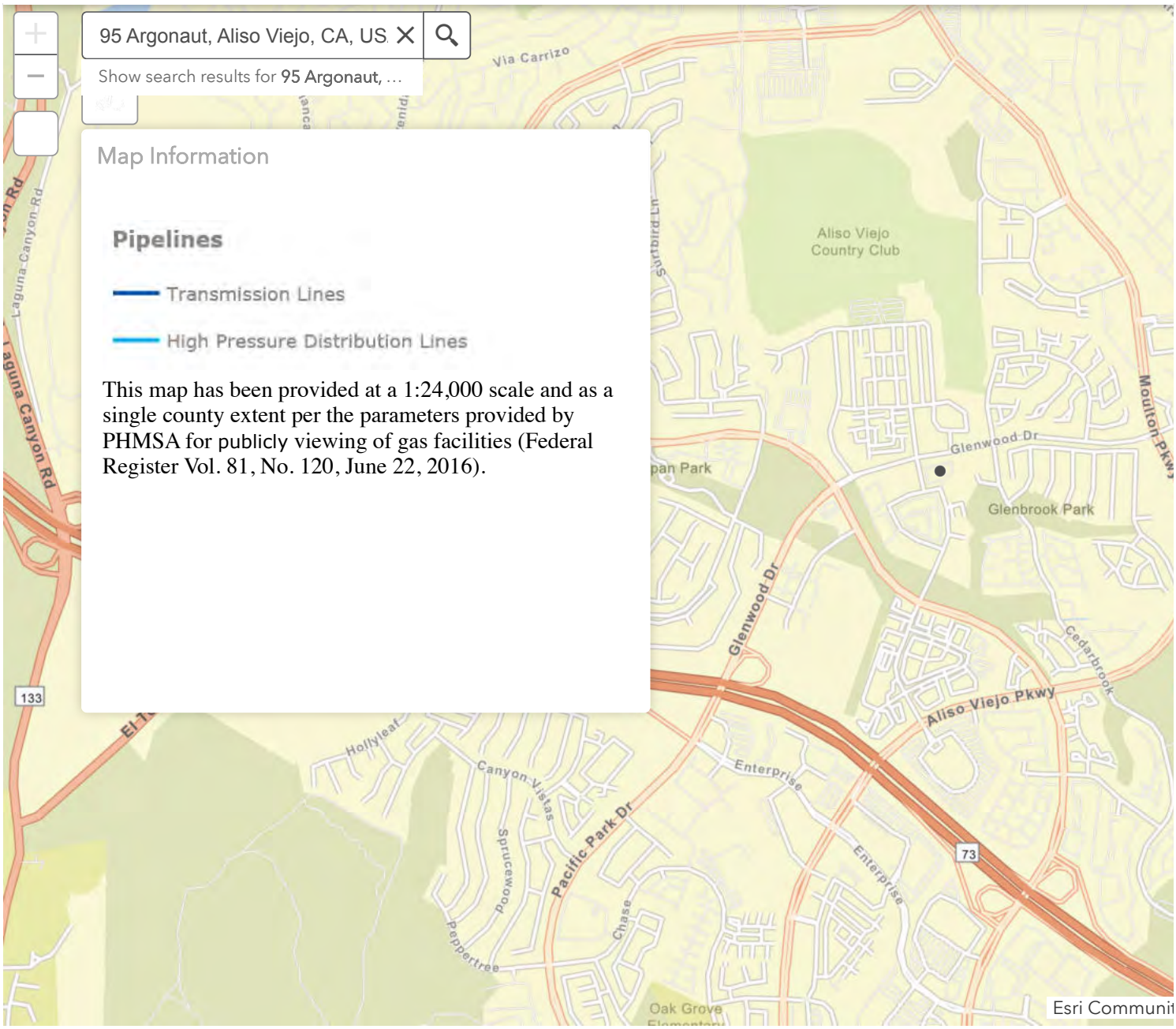
Map Layers | Query Tools

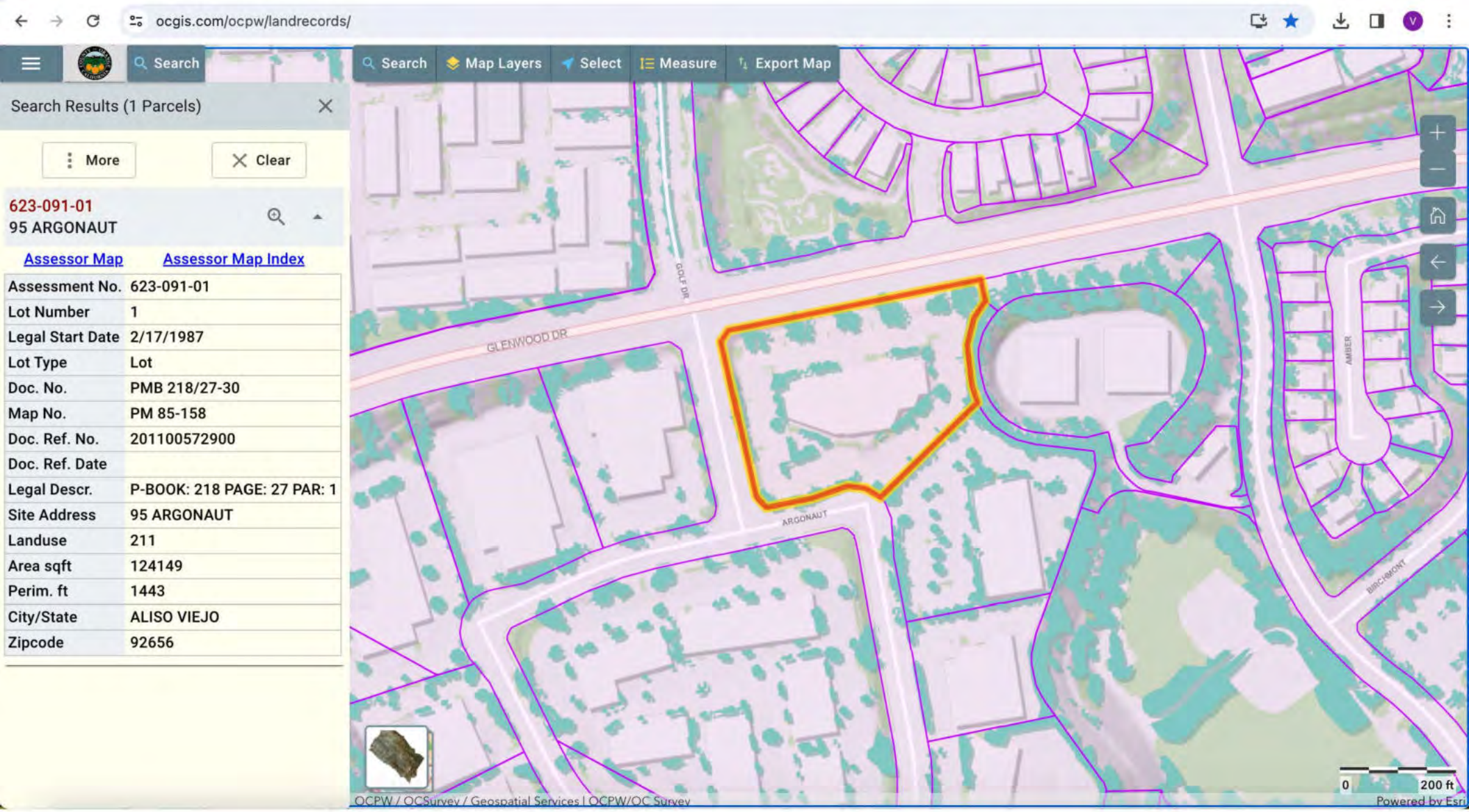


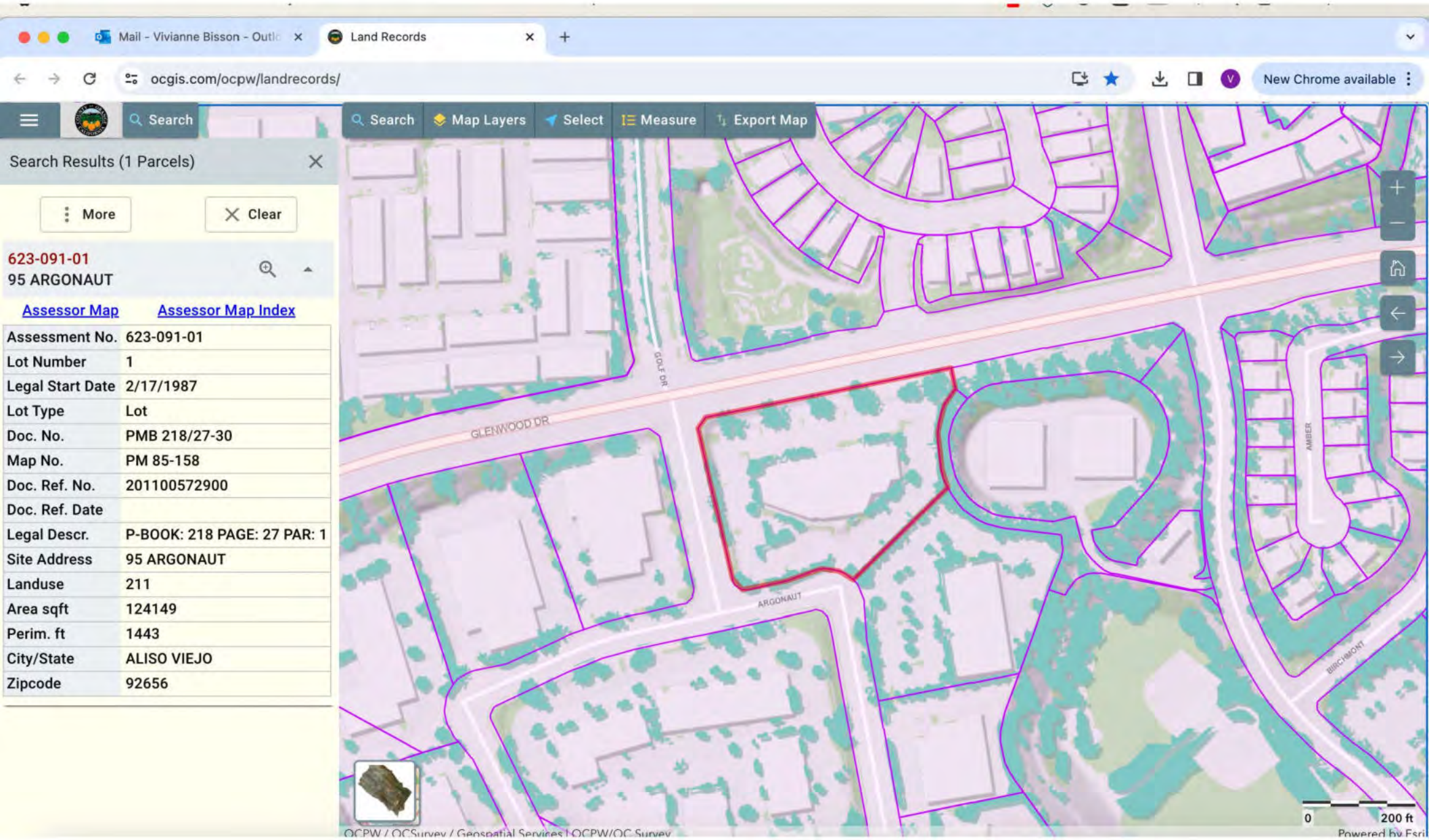
Ready | Zoom Level: 11 of 19 (1:216,671) | (lat,long): 33.671442, -117.781589

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Gas Transmission Pipeline Interactive Map - Orange




ocgis.com/ocpw/landrecords/
Search
Search Results (1 Parcels)
More
Clear
623-091-01
95 ARGONAUT
Assessor Map
Assessor Map Index
Assessment No. 623-091-01
Lot Number 1
Legal Start Date 2/17/1987
Lot Type Lot
Doc. No. PMB 218/27-30
Map No. PM 85-158
Doc. Ref. No. 201100572900
Doc. Ref. Date
Legal Descr. P-BOOK: 218 PAGE: 27 PAR: 1
Site Address 95 ARGONAUT
Landuse 211
Area sqft 124149
Perim. ft 1443
City/State ALISO VIEJO
Zipcode 92656
Search
Map Layers
Select
Measure
Export Map
GLENWOOD DR
GOLF DR
ARGONAUT
AMBER
BIRCHMONT
0
200 ft
OCPW / OCSurvey / Geospatial Services | OCPW/OC Survey
Powered by Esri


Mail - Vivianne Bisson - Outlo
Land Records
ocgis.com/ocpw/landrecords/
New Chrome available
Search
Search
Map Layers
Select
Measure
Export Map
Search Results (1 Parcels)
More
Clear
623-091-01
95 ARGONAUT
Assessor Map
Assessor Map Index
Assessment No. 623-091-01
Lot Number 1
Legal Start Date 2/17/1987
Lot Type Lot
Doc. No. PMB 218/27-30
Map No. PM 85-158
Doc. Ref. No. 201100572900
Doc. Ref. Date
Legal Descr. P-BOOK: 218 PAGE: 27 PAR: 1
Site Address 95 ARGONAUT
Landuse 211
Area sqft 124149
Perim. ft 1443
City/State ALISO VIEJO
Zipcode 92656
GLENWOOD DR
GOLF DR
ARGONAUT
AMBER
BIRCHMONT
0
200 ft
OCPW / OCSurvey / Geospatial Services | OCPW/OC Survey
Powered by Esri

Property Detail Report

For Property Located At :
95 ARGONAUT, ALISO VIEJO, CA 92656

CoreLogic RealQuest

Owner Information

Owner Name:	**ARGONAUT OFFICES LLC**
Mailing Address:	**1 RIM RDG, NEWPORT COAST CA 92657-1715 C097 C/O MIKE M MOSHAYEDI**
Vesting Codes:	/ /

Location Information

Legal Description:	**P-BOOK: 218 PAGE: 27 PAR: 1**		
County:	ORANGE, CA	APN:	623-091-01
Census Tract / Block:	626.34 / 4	Alternate APN:	
Township-Range-Sect:		Subdivision:	PARCEL MAP 85-158
Legal Book/Page:		Map Reference:	29-C2 /
Legal Lot:	1	Tract #:	
Legal Block:		School District:	CAPISTRANO
Market Area:	AV	School District Name:	CAPISTRANO
Neighbor Code:		Munic/Township:	

Owner Transfer Information

Recording/Sale Date:	/	Deed Type:	
Sale Price:		1st Mtg Document #:	
Document #:			

Last Market Sale Information

Recording/Sale Date:	11/10/2011 / 11/09/2011	1st Mtg Amount/Type:	/
Sale Price:	$4,379,500	1st Mtg Int. Rate/Type:	/
Sale Type:	FULL	1st Mtg Document #:	
Document #:	572900	2nd Mtg Amount/Type:	/
Deed Type:	GRANT DEED	2nd Mtg Int. Rate/Type:	/
Transfer Document #:		Price Per SqFt:	$87.63
New Construction:		Multi/Split Sale:	
Title Company:	FIRST AMERICAN TITLE INSURANCE		
Lender:			
Seller Name:	201-73 ARGONAUT OFFICE HOLDING		

Prior Sale Information

Prior Rec/Sale Date:	02/23/2007 / 02/21/2007	Prior Lender:	ARTESIA MTG CAP CORP
Prior Sale Price:	$12,700,000	Prior 1st Mtg Amt/Type:	$7,800,000 / CONV
Prior Doc Number:	117304	Prior 1st Mtg Rate/Type:	/ FIXED RATE LOAN
Prior Deed Type:	GRANT DEED		

Property Characteristics

Year Built / Eff:	/	Total Rooms/Offices		Garage Area:	
Gross Area:	49,975	Total Restrooms:		Garage Capacity:	
Building Area:	49,975	Roof Type:		Parking Spaces:	
Tot Adj Area:		Roof Material:		Heat Type:	
Above Grade:		Construction:		Air Cond:	
# of Stories:		Foundation:		Pool:	
Other Improvements:		Exterior wall:		Quality:	
		Basement Area:		Condition:	

Site Information

Zoning:		Acres:	2.83	County Use:	COMMERCIAL (3)
Lot Area:	123,405	Lot Width/Depth:	x	State Use:	
Land Use:	COMMERCIAL BUILDING	Res/Comm Units:	/	Water Type:	
Site Influence:				Sewer Type:	

Tax Information

Total Value:	$6,471,034	Assessed Year:	2023	Property Tax:	$65,034.26
Land Value:	$2,849,188	Improved %:	56%	Tax Area:	34019
Improvement Value:	$3,621,846	Tax Year:	2023	Tax Exemption:	
Total Taxable Value:	$6,471,034				

Flood Map Report

For Property Located At

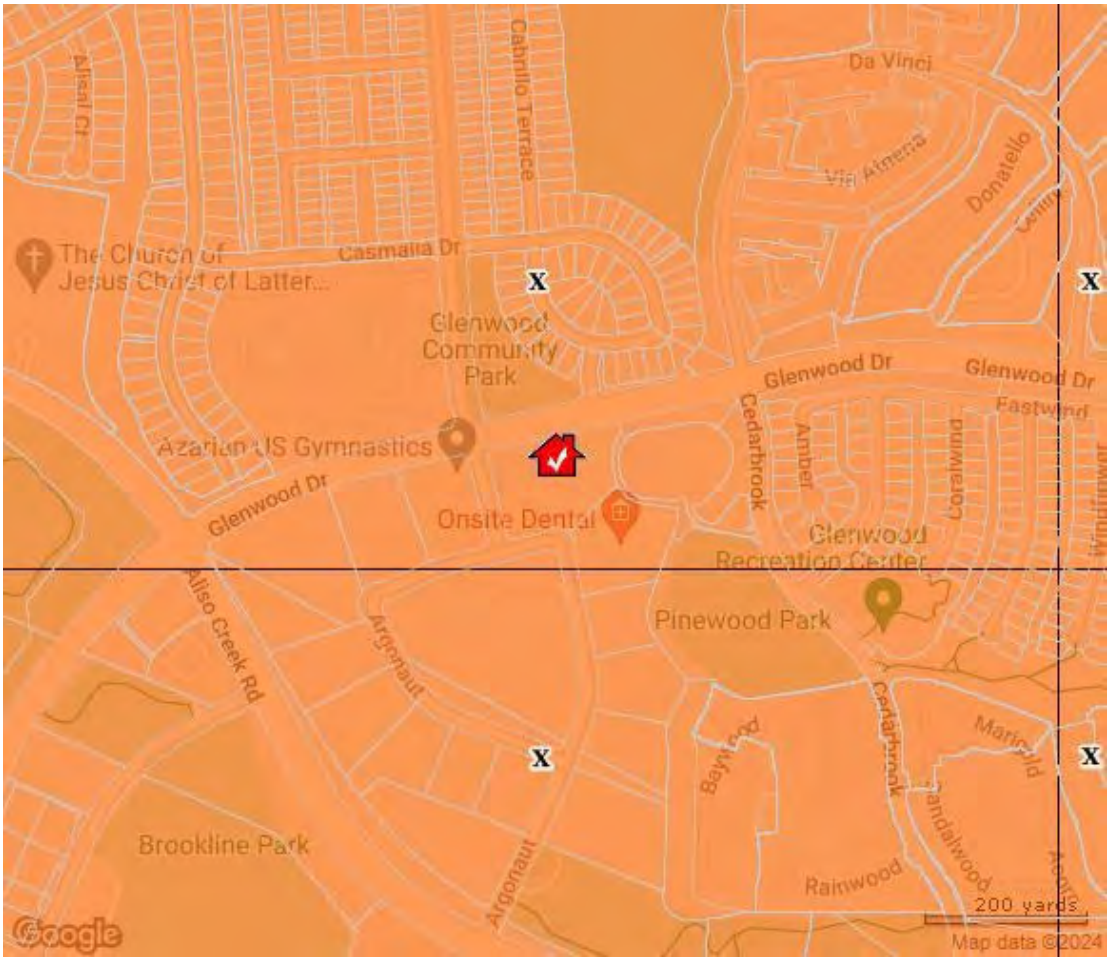
95 ARGONAUT, ALISO VIEJO, CA 92656

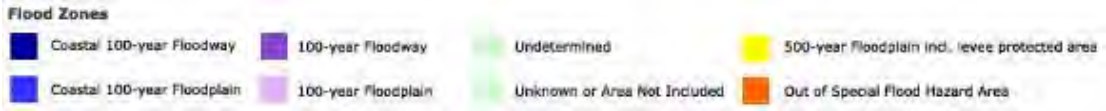
Report Date: 04/03/2024 **County:** ORANGE, CA

Flood Zone Code	Flood Zone Panel	Panel Date
X	060770 - 06059C0426J	12/03/2009
Special Flood Hazard Area (SFHA)	**Within 250 ft. of multiple flood zones?**	**Community Name**
Out	No	ALISO VIEJO

Flood Zone Description:

Zone X-An area that is determined to be outside the 100- and 500-year floodplains.





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Description building to self-storage facility, with additional exterior single-story self storages units on site at 95

Plan Number DRP-2022-00001
Type Development Review Permit
Expiration Date
Main Parcel 62309101
Address 95 ARGONAUT ALISO VIEJO, CA 92656
Description Demo and new construction of self-storage site prelim meeting.

Applied Date 09/28/2022
Completion Date
Status Void
Project Name

Found 4 results

Filter Results

All 4

Plan 4

Next | Top | Paging Options | Filter Options | Main Menu

Plan Number DRP-2024-00001 **Applied Date** 01/18/2024

Type Development Review Permit **Completion Date**

Expiration Date **Status** Deemed Incomplete

Main Parcel 62309101 **Project Name**

Address 95 ARGONAUT ALISO VIEJO, CA 92656

Description Pre-Application Review for a proposed housing development: 54, 3-story townhomes at 95 Argonaut.

Previous | Next | Top | Paging Options | Filter Options | Main Menu

Plan Number DRP-2024-00002 **Applied Date** 03/25/2024

Type Development Review Permit **Completion Date**

Expiration Date **Status** Submitted

Main Parcel 62309101 **Project Name**

Address 95 ARGONAUT ALISO VIEJO, CA 92656

Description Pre-Application Review for a proposed townhome development (62 townhomes, 2.85 acres, 2-4 bedrooms) at 95

Previous | Next | Top | Paging Options | Filter Options | Main Menu

Plan Number USE-2023-00015 **Applied Date** 07/05/2023

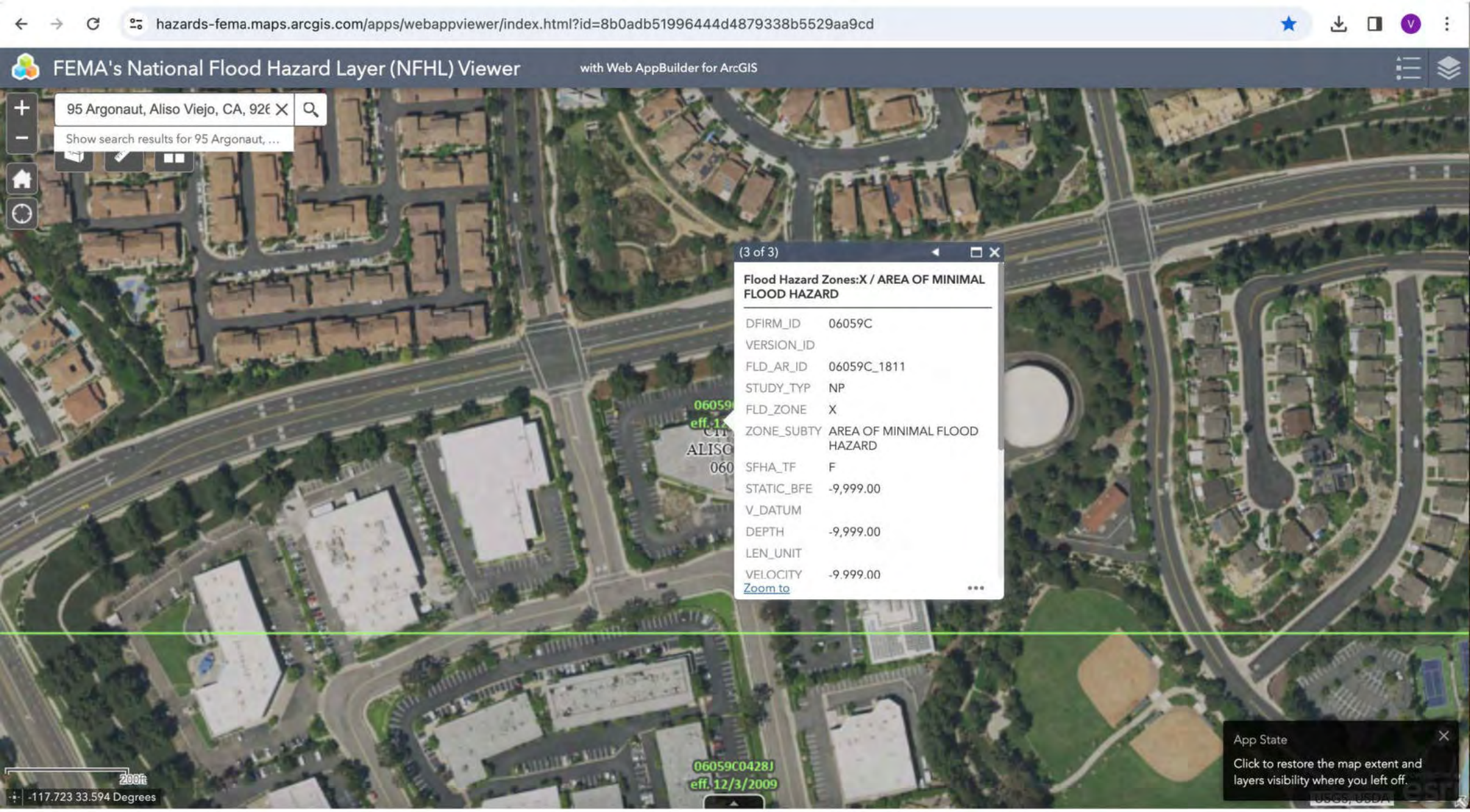
Type Conditional Use Permit **Completion Date**

Expiration Date **Status** Deemed Incomplete

Main Parcel 62309101 **Project Name**

Address 95 ARGONAUT ALISO VIEJO, CA 92656

Description building to self-storage facility, with additional exterior single-story self storages units on site at 95

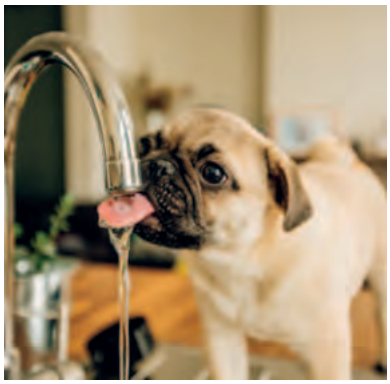
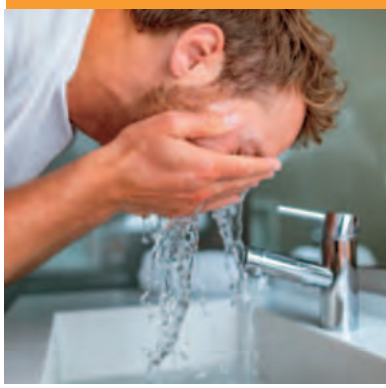

hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd
FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
95 Argonaut, Aliso Viejo, CA, 926
Show search results for 95 Argonaut, ...
(3 of 3)
Flood Hazard Zones:X / AREA OF MINIMAL FLOOD HAZARD
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VERSION_ID
FLD_AR_ID 06059C_1811
STUDY_TYP NP
FLD_ZONE X
ZONE_SUBTY AREA OF MINIMAL FLOOD HAZARD
SFHA_TF F
STATIC_BFE -9,999.00
V_DATUM
DEPTH -9,999.00
LEN_UNIT
VELOCITY -9,999.00
Zoom to
06059C0428J
eff. 12/3/2009
App State
Click to restore the map extent and layers visibility where you left off.
200ft
-117.723 33.594 Degrees

moulton niguel water district

WATER QUALITY REPORT

2022







Safe & Reliable Drinking Water, Delivered Every Day

2056

moulton niguel water district

BOARD OF DIRECTORS

Duane D. Cave
PRESIDENT

Brian S. Probolsky
VICE PRESIDENT

Diane Rifkin
VICE PRESIDENT

Donald R. Froelich
DIRECTOR

Richard S. 'Dick' Fiore
DIRECTOR

William 'Bill' Moorhead
DIRECTOR

Sherry Wanninger
DIRECTOR

Dear Moulton Niguel Customer,

Reliable access to safe water is Moulton Niguel's highest priority.

To deliver on that commitment, Moulton Niguel conducts extensive water quality tests throughout the year. State-of-the-art laboratories independently analyze the tests to ensure we strictly adhere to the Environmental Protection Agency and the State Water Resources Control Board standards.

On behalf of the Moulton Niguel Board of Directors, I am pleased to report:

Moulton Niguel's drinking water continues to meet all federal and state water quality standards and safety regulations.

This annual Consumer Confidence Report covers water quality testing for the 2022 calendar year, summarizing everything you need to know about your water. It includes detailed results of water quality tests conducted at each stage of treatment and delivery and information about the required safety regulations for public drinking water providers.

Moulton Niguel takes great pride in providing you safe, clean, and reliable drinking water at one of the lowest water rates in South Orange County.

We are here to serve you. Please call us anytime you need help at **(949) 831-2500** or email **customerservice@mnwd.com**.

Sincerely,

JOONE KIM-LOPEZ
General Manager & CEO, Moulton Niguel Water District

2057

Where Our Water Comes From

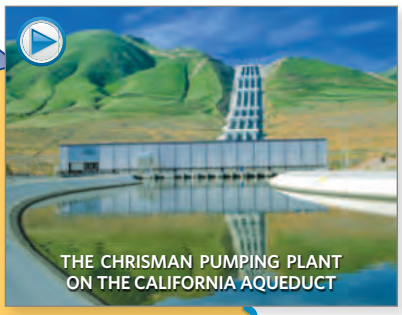
Have you ever wondered where your water comes from? Here in the Moulton Niguel Water District, our water is imported from both Northern California and the Colorado River.

Water from Northern California travels to us through a complex delivery system known as the California State Water Project. Designed and built in the 1960s, the State Water Project is one of the largest public water and power utilities in the world, providing drinking water for more than 27 million people statewide.

Managed by the California Department of Water Resources (DWR), the project stretches over 700 miles, from Lake Oroville in the north to Lake Perris in the south. Water stored in Lake Oroville, Folsom Lake, and other tributaries are fed by snow melt from the Sierra Mountains. All of which flow into the Sacramento and San Joaquin rivers, and from there into reservoirs in the Bay-Delta region.

From the Bay-Delta, giant pumps lift the water into the 444-mile-long California Aqueduct, there to flow southward to cities and farms in central and Southern California. Composed mainly of concrete-lined canals, the Aqueduct also includes over 20 miles of tunnels and nearly 160 miles of pipelines. Along the way, the water is pumped 2,882 feet over the Tehachapi Mountains. The Edmonston Pumping Plant alone lifts millions of gallons a day up 1,926 feet, the highest single water lift in the world.





Managed by the Metropolitan Water District of Southern California (MWD), the Colorado River Aqueduct begins near Parker Dam on the Colorado River. There, the Gene Pumping Station lifts the water over 300 feet and begins its 242 mile journey to Lake Mathews, just outside the City of Corona. Along the way, the water passes through two reservoirs, five pumping stations, 62 miles of canals, and 176 miles of pipelines. All told, the water is lifted four times, a total of more than 1,300 feet.



After its journey across the Mojave Desert, the water descends into the Coachella Valley and through the San Gorgonio Pass. Near Cabazon, the aqueduct flows underground, passing beneath the San Jacinto Mountains and continuing until it reaches its terminus at Lake Mathews. From there, 156 miles of distribution lines and eight more tunnels, delivers the water throughout Southern California.

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Water Quality

Sources of Our Water Supply

Moulton Niguel relies on imported water from MWD, which sources its water supply from the Colorado River and the State Water Project. MWD delivers an average of 1.5 billion gallons of water per day to a 5,200-square-mile service area of nearly 19 million people in parts of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties.


Colorado River

Importing water from hundreds of miles away is only the start to providing you clean, fresh water. Once the water is in the southland, MWD pumps the water to individual cities throughout Orange County.

Your water is treated at the Diemer Water Treatment Plant in Yorba Linda and the Baker Water Treatment Plant in Lake Forest, which is then delivered to Moulton Niguel Water District. Your water is a blend of both treatment plants.

This water meets all state and federal regulations and it is kept safe from the treatment plant to your tap by regular testing throughout the distribution network. Moulton Niguel's pipelines, pump stations, and reservoirs are used to deliver this water to you when and where it is needed.

Moulton Niguel Water District monitors the water quality at all sources, reservoirs, and various points in the distribution system. All told, between the many agencies responsible for providing your water, it is tested more times, and for more compounds, than is required by state and federal laws and regulations. This vigilant monitoring ensures your drinking water stays within the requirements mandated by the federal Safe Drinking Water Act.

Basic Information about Your Drinking Water

Drinking water, both tap and bottled, may reasonably be expected to contain trace amounts of some contaminants. The presence of trace contaminants does not indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the United States Environmental Protection Agency (USEPA) Safe Drinking Water Hotline at **(800) 426-4791** or visiting **www.epa.gov/your-drinking-water**.



The sources of both tap and bottled drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it can dissolve naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses, protozoa, and bacteria that may come from septic systems, agricultural livestock operations, and wildlife
- **Inorganic contaminants**, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming
- **Pesticides and herbicides** that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems
- **Radioactive contaminants** that can be naturally occurring or be the result of oil and gas production and mining activities

In order to ensure that tap water is safe to drink, the USEPA and the State Water Resources Control Board, Division of Drinking Water (DDW) prescribe regulations that limit the amounts of certain contaminants in water provided by public water systems. DDW and U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that provide similar protection for public health.

Water Quality Tests

Lead

Moulton Niguel meets all required standards for lead in the USEPA Lead and Copper Rule. Elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with home plumbing.

Moulton Niguel is responsible for providing high quality drinking water to your property, but cannot control the variety of materials used in various plumbing components within your home or business.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. However, please follow this practice carefully to reduce any potential water waste.

Moulton Niguel participates in the State Water Resources Control Board's Lead Testing in Schools Program. To date, all samples collected at schools in the District have met drinking water standards set by the State and Federal regulatory agencies.

For questions about your water quality, please call Moulton Niguel Customer Service at **(949) 831-2500**.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, **(800) 426-4791**, or at **www.epa.gov/lead**.



Cryptosporidium

Cryptosporidium is a microbial pathogen that originates from animal or human waste and is found in surface waters throughout the United States. When ingested, it can cause diarrhea, fever, and other gastrointestinal symptoms.

MWD tested but did not detect *Cryptosporidium* in the source and treated surface waters during 2022. If detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration, and disinfection.

The USEPA and Federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminates are available from the USEPA Safe Drinking Water Hotline at **(800) 426-4791** or visit **www.epa.gov/safewater**.

Water Hardness



Levels of calcium and magnesium, which occur naturally in water, are the primary substances that determine whether water is hard or soft.

Water from the Colorado River, one of Moulton Niguel's sources of water, contains fairly high levels of these minerals and is considered "hard."

Water hardness does not negatively affect your health; however, hard water does require more soap than soft water and will leave mineral deposits on plumbing fixtures over time.

Water hardness is measured in grains per gallon. In 2022, the hardness found in your water had an average of 16.65 grains per gallon.

Immunocompromised People

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immunocompromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, or have HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These individuals should seek advice about drinking water from their health care providers.



moulton niguel water district

Our Water Distribution System

Delivering safe, clean and reliable water to residents and businesses in our community



COLORADO RIVER AQUEDUCT
(Imports water from Colorado River)

BAKER WATER TREATMENT PLANT
Joint Regional Project with Five South Orange County Water Districts

OC-88 PUMPHOUSE

ALLEN-MCCOLLOCH PIPELINE

SEVILLE RESERVOIR

R-6 RESERVOIR (Covered)



STATE WATER PROJECT
(Imports water from Northern California)



Robert B. Diemer WATER TREATMENT PLANT
Metropolitan Water District of Southern California

SOUTH COUNTY PIPELINE

JOINT TRANSMISSION MAIN

EL DORADO RESERVOIR

EL DORADO PUMPING STATION

LAGUNA HILLS

UPPER CHIQUITA RESERVOIR (Covered)



SHEEP HILLS RESERVOIR

ALISO CREEK ROAD

SHEEP HILLS PUMPING STATION

EASTERN TRANSMISSION MAIN

ALICIA PARKWAY

LA PAZ RESERVOIR

MOULTON PARKWAY

ALISO HILLS RESERVOIR

SAN DIEGO FWY

LA PAZ PUMPING STATION

ROLLING HILLS RESERVOIR

ALISO VIEJO

GLENWOOD DRIVE

ROLLING HILLS PUMPING STATION

moulton niguel water district

MISSION VIEJO

NELLIE GAIL RESERVOIR

OSO PARKWAY

LA PAZ ROAD

MARGUERITE RESERVOIR

MOULTON PEAK RESERVOIR

BRIDLEWOOD

MARGUERITE PUMPING STATION

PACIFIC PARK DRIVE

The Ziggurat

CASA DE OSO PUMPING STATION

OSO PUMPING STATION

SOKA UNIVERSITY

MARGUERITE PARKWAY

Providence Mission Hospital

WOOD CANYON RESERVOIR

CROWN VALLEY RESERVOIR

WOOD CANYON PUMPING STATION

PACIFIC PARK RESERVOIR

Laguna Niguel Regional Park

EAST ALISO CREEK RESERVOIR

SADDLEBACK COLLEGE

COUNTRY VILLAGE PUMPING STATION

SADDLEBACK RESERVOIR AND PUMPING STATION

PACIFIC PARK PUMPING STATION

HIGHLANDS RESERVOIR

CROWN VALLEY PARKWAY

AVERY PARKWAY

ALISO SUMMIT RESERVOIR

BIG NIGUEL PUMPING STATION

RANCHO PUMPING STATION

LAGUNA SUR RESERVOIR

NIGUEL ROAD

SAN JUAN CAPISTRANO

P.I.D. RESERVOIR NO. 3

ALICIA PARKWAY

RANCHO RESERVOIR

P.I.D. PUMPING STATION NO. 3

LAGUNA NIGUEL

LITTLE NIGUEL PUMPING STATION

GOLDEN LANTERN

PACIFIC ISLAND DRIVE

P.I.D. RESERVOIR NO. 2

El Niguel Country Club

BEAR BRAND RESERVOIR

P.I.D. PUMPING STATION NO. 2

BEACON HILL PUMPING STATION

P.I.D. PUMPING STATION NO. 1

CAMINO DEL AVION

BEAR BRAND PUMPING STATION

DANA POINT

MOULTON NIGUEL WATER DISTRICT
By the Numbers

100
Percent of Drinking Water Imported

37
Total Service Area in Square Miles

170,000+
Number of Residents Served on a Daily Basis

7
Amount of Drinking Water Delivered Each Year, in Billions of Gallons

12,000
Number of Water Quality Tests Conducted Every Year

700
Miles of Potable Water Pipelines Maintained Throughout District

28
Water Storage Reservoirs Located within District

173
Capacity of Water Storage Reservoirs in Millions of Gallons

25
Number of Pumping Stations Operated throughout District

21
Number of Pressure Reducing Stations and Flow Control Facilities in Dis

2061

Additional Information

Drinking Water Fluoridation

Fluoride has been added to drinking water supplies in the United States since 1945. Of the 50 largest cities in the United States, 43 fluoridate their drinking water. In December 2007, MWD joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay.



MWD is in compliance with all provisions of the State's fluoridation system requirements. Fluoride levels in drinking water are limited under California State regulations to a maximum dosage of two (2) parts per million.

For additional information:

U.S. Centers for Disease Control and Prevention
(800) 232-4636 ♦ www.cdc.gov/fluoridation/

State Water Resources Control Board, Division of Drinking Water
www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.html

American Water Works Association
www.awwa.org

Metropolitan Water District of Southern California
Fluoridation Program ♦ Edgar G. Dymally
(213) 217-5709 ♦ edymally@mwdh2o.com



Chloramines

All of Moulton Niguel's drinking water is imported from MWD and is disinfected at the Diemer Water Treatment Plant and the Baker Water Treatment Plant with chloramines, which is a combination of chlorine and ammonia. In addition, Moulton Niguel maintains disinfection levels in stored water through the addition of chloramines, as needed.

Chloramines are effective killers of bacteria and other micro-organisms that may cause disease. Compared to chlorine alone, chloramines last longer in the distribution system, minimize byproduct formation, and have minimal odor.

Individuals who use kidney dialysis machines may want to take special precautions and consult their health care providers for the appropriate type of supplementary water treatment, if required.

Customers who maintain fish ponds, tanks, or aquariums should also make necessary adjustments in water quality treatment, as these disinfectants may be harmful to fish.

For more information about your water quality, please call Moulton Niguel Customer Service at **(949) 831-2500**.

Want to Learn More?

There's a wealth of information online about Drinking Water Quality and water issues in general. Some good sites to begin your own research are:

Metropolitan Water District of So. California: www.mwdh2o.com
California Department of Water Resources: www.water.ca.gov
To learn more about
Water Conservation & Rebates: www.mnwd.com/rebates
or to learn why
You Can Depend on Your Water System:
www.youtube.com/watch?v=lshe58YVGRE&t=1s
And to see the Aqueducts in action, checkout these two videos:
Wings Over the State Water Project: youtu.be/8A1v1Rr2neU
Wings Over the Colorado Aqueduct: youtu.be/KipMQh5t0f4

Metropolitan Water District of Southern California
Treated Surface Water Quality Results for 2022

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
Radiologicals[a]						
Gross Alpha Particle Activity pCi/L	15	(0)	ND	ND -3	No	Runoff leaching of natural deposits
Gross Beta Particle Activity pCi/L	50	(0)	6	ND – 9	No	Decay of natural and man-made deposits
Uranium pCi/L	20	0.43	2	1 – 3	No	Erosion of natural deposits
Inorganic Chemicals						
Aluminum (ppm)	1	0.6	.140	.085 – .210	No	Treatment Process Residue, Natural Deposits
Barium (ppm)	1	2	0.1	0.1	No	Oil and metal refineries discharge, natural deposits erosion
Fluoride (ppm) treatment-related	2	1	0.7	0.7 – 0.8	No	Water Additive for Dental Health. Runoff or Leaching from Natural Deposits
Secondary Standards*						
Aluminum (ppb)	200*	600	140	85 – 210	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	101	98 – 104	No	Runoff or Leaching from Natural Deposits
Color (Color Units)	15*	n/a	1	1	No	Naturally-occurring Organic Materials
Odor (Threshold Odor Number)	3*	n/a	3	3	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	988	965 – 1010	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	221	213 – 229	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	628	608 -648	No	Runoff or Leaching from Natural Deposits
Unregulated Chemicals						
Chlorate (ppb)	NL = 800	n/a	90	90	n/a	Byproduct of drinking water chlorination; industrial process
Boron (ppm)	NL = 1	n/a	0.13	0.13	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as $CaCO_3$ (ppm)	Not Regulated	n/a	278	275 – 281	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	16.2	16.1 – 16.4	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	25	24 – 26	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.1	8.1	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	4.6	4.4 – 4.8	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.5	2.3 – 2.6	n/a	Various Natural and Man-made Sources. TOC is a precursor for the formation of disinfection byproducts.
Sodium (ppm)	Not Regulated	n/a	98	95 – 102	n/a	Runoff or Leaching from Natural Deposits
Alkalinity, total as $CaCO_3$ (ppm)	Not Regulated	n/a	126	125 – 127	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	68	66 – 70	n/a	Runoff or Leaching from Natural Deposits

ppb = parts-per-billion; **ppm** = parts-per-million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **ND** = not detected;
MCL = Maximum Contaminant Level; **(MCLG)** = federal MCL Goal; **PHG** = California Public Health Goal;
NL = Notification Level; **n/a** = not applicable; **TT** = treatment technique

*Chemical is regulated by a secondary standard.

Turbidity - combined filter effluent Metropolitan Water District Diemer Water Treatment Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement	0.3 NTU	0.03	No	Soil Runoff
2) Percentage of samples less than or equal to 0.3 NTU	95%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. **NTU** = nephelometric turbidity units
Low turbidity in Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT). A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly.

2022 Moulton Niguel Water District Distribution System

Disinfection Byproducts	Units	MCL	Annual Average	Range of Detections
Total Trihalomethanes	ppb	80	39	27.8 – 49.6
Haloacetic Acids	ppb	60	19	7.6 – 27.2
Disinfectant Residual (chloramines)	mg/L	4	2.1	0.6 – 3.2
Lead (90th %)	ppb	15	ND	N/A
Copper (90th %)	mg/L	1.3	0.149	N/A

The Lead and Copper data is from testing of 52 residences in 2021. Zero tests exceeded the Action Level.

Microbiological Contaminants	Highest No. of Detections	No. of Months in Violation	MCL	MCLG
E. coli	0	0	5%	0%


Robert B. Diemer Water Treatment Plant

Baker Water Treatment Plant
Treated Surface Water Quality Results for 2022

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
Radiologicals						
Gross Alpha Particle Activity pCi/L	15	0	2.46	1.97 – 2.95	No	Erosion of natural deposits
Gross Beta Particle Activity pCi/L	50	0	6.23	5.38 – 7.08	No	Decay of natural and man-made deposits
Uranium (pCi/L)	20	0.43	1.6	1.5 – 1.7	No	Natural deposits erosion, glass and electronics production waste
Inorganic Chemicals						
Arsenic (ppb)	10	0.004	<2.0	ND – 2.24	No	Treatment Process Residue, Natural Deposits
Barium (ppm)	1	2	<.0.10	ND – 0.10	No	Oil and metal refineries discharge; Natural deposits erosion
Fluoride (ppm)	2	1	0.34	.32 – .35	No	Erosion of natural deposits; water additive that promotes strong teeth
Disinfection Byproducts						
Chlorite (ppm)	1	0.05	<0.05	ND – 0.06	No	Byproduct of drinking water chlorination
Chlorine Dioxide (ppm)	MRDL = 0.8	MRDLG = 0.8	0.06	ND – 0.12	No	Drinking water disinfectant added for treatment
Secondary Standards*						
Chloride (ppm)	500*	n/a	101	99.8 – 103	No	Runoff or Leaching from Natural Deposits; sea water influence
Color (Color Units)	15*	n/a	<3	<3	No	Naturally-occurring Organic Materials
Odor (Threshold Odor Number)	3*	n/a	1	1	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	991	979 – 1006	No	Substances that Form Ions in Water; sea water influence
Sulfate (ppm)	500*	n/a	213	201 – 225	No	Runoff or Leaching from Natural Deposits; industrial wastes
Total Dissolved Solids (ppm)	1,000*	n/a	627	604 – 650	No	Runoff or Leaching from Natural Deposits; sea water influence
Unregulated Chemicals						
Alkalinity, total as $CaCO_3$ (ppm)	Not Regulated	n/a	125	122 – 127	n/a	Runoff or Leaching from Natural Deposits
Bicarbonate (ppb)	Not Regulated	n/a	123	121 – 125	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL=1	n/a	0.137	.133 – .141	n/a	Runoff or Leaching from Natural Deposits
Carbonate (ppm)	Not Regulated	n/a	0.98	.65 – 1.3	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	71.6	69.9 – 73.3	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as $CaCO_3$ (ppm)	Not Regulated	n/a	292	282 – 302	n/a	Runoff or Leaching from Natural Deposits
Hardness as Grains per Gallon	Not Regulated	n/a	17.1	16.5 – 17.6	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	27.6	26.2 – 28.9	n/a	Runoff or Leaching from Natural Deposits
Molybdenum(ppb)	Not Regulated	n/a	4.79	4.69 – 4.89	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.2	8 – 8.4	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	5.14	4.82 – 5.46	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	98.8	95.5 – 102	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.05	2.00 – 2.10	n/a	Various Natural and Man-made Sources

ppb = parts-per-billion; **ppm** = parts-per-million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **ND** = not detected; **n/a** = not applicable; **NL** = Notification Level; **TT** = treatment technique

MCL = Maximum Contaminant Level; **(MCLG)** = federal MCL Goal; **PHG** = California Public Health Goal; **MRDL** = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal

*Chemical is regulated by a secondary standard.

Clarity – combined filter effluent Baker Water Treatment Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement	0.1 NTU	0.03	No	Soil Runoff
2) Percentage of samples less than or equal to 0.3 NTU	95%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. **NTU** = nephelometric turbidity units

Low turbidity in Baker's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT).

A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly.

Water Quality Charts Legend

What are Water Quality Standards?

Drinking water standards established by USEPA and DDW set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The tables in the report show the following types of water quality standards:

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as are economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- **Maximum Residual Disinfectant Level (MRDL)**: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Secondary MCLs:** Set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- **Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

How are Contaminants Measured?

Water is sampled and tested throughout the year. Contaminants are measured in:

- Parts per million (ppm) or milligrams per liter (mg/L)
- Parts per billion (ppb) or micrograms per liter (µg/L)
- Parts per trillion (ppt) or nanograms per liter (ng/L)

Source Water Assessment

Metropolitan Water District

Every five years, MWD is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters.

The most recent surveys for MWDSC's source waters are the Colorado River Watershed Sanitary Survey – 2020 Update, and the State Water Project Watershed Sanitary Survey – 2016 Update. Both source waters are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires, and other watershed-related factors that could affect water quality.

Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban and stormwater runoff, increasing urbanization in the watershed, and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban and stormwater runoff, wildlife, agriculture, recreation, and wastewater.

USEPA also requires MWD to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWD completed its SWA in December 2002. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWD at **(800) CALL-MWD (225-5693)**.

What is a Water Quality Goal?

In addition to mandatory water quality standards, the USEPA and the DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guidelines and direction for water management practices. The tables in this report include three types of water quality goals:

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Contaminants Not Detected (2022)

The water delivered to your home is safe, clean and continues to surpass every state and federal water quality standard. The contaminants listed here were *NOT DETECTED* in Moulton Niguel's water.

- 1,1,1-Trichloroethane
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethane
- 1,2-Dichloroethane
- 1,2,3-Trichloropropane
- 1,2,4-Trichlorobenzene
- 1,2-Dichlorobenzene
- 1,2-Dichloropropane
- 1,4-Dichlorobenzene
- Atrazine
- Benzene
- Beryllium
- Cadmium
- Carbon Tetrachloride
- Chromium
- Chromium-6
- *Cryptosporidium*
- Cyanide
- Dichlorofluoromethane
- Ethylbenzene
- Fecal Coliform & *E. coli*
- Giardia
- Mercury
- Methyl-t-butyl ether (MTBE)
- Nickel
- Perchlorate
- Perfluorooctane sulfonate (PFOS)
- Perfluorooctanoic Acid (PFOA)
- Radium
- Radon
- Simazine
- Strontium – 90
- Styrene
- Thallium
- Thiobencarb
- Toluene
- Trans-1,2-Dichloroethane
- Trichlorofluoromethane (Freon-11)
- Tritum
- Vinyl Chloride
- Xylenes

Baker Water Treatment Plant

The Baker Water Treatment Plant receives untreated surface water from MWD (see MWD water assessment left) and untreated surface water from Irvine Lake (Santiago Reservoir). The surface water assessment of Santiago Reservoir is provided by Serrano Water District, which also uses source water from Santiago Reservoir.

The most recent watershed sanitary survey for Santiago Reservoir was updated in 2014. Water supplies from Santiago Reservoir are most vulnerable to septic tank, landfill and dump activities. The Source Water Assessment (SWA) for Santiago Reservoir was completed in April 2001. The assessment was conducted for the Serrano Water District by Boyle Engineering Corporation (Boyle) with assistance from the District's staff and management.

A copy of the complete assessment may be viewed at the IRWD Water Quality Department, 3512 Michelson Drive, Irvine. You may request a summary of the assessment by writing to District Secretary, Irvine Ranch Water District, 15600 Sand Canyon Avenue, Irvine, California 92618.

Connect with Moulton Niguel

Federal and State Water Quality Regulations

The United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board, Division of Drinking Water (DDW) are the agencies responsible for establishing drinking water quality standards. The Metropolitan Water District of Southern California (MWD), which supplies imported water to Moulton Niguel, tests for unregulated chemicals in our water supply. Whenever possible, MWD goes beyond what is required by testing for unregulated chemicals that do not have drinking water standards. Unregulated chemical monitoring helps USEPA and DDW determine where certain chemicals may be present and whether new standards need to be established to protect public health.



Through drinking water quality testing programs carried out by MWD for imported water and Moulton Niguel for our local distribution system, your drinking water is monitored from source to tap for regulated and unregulated constituents.

The State allows monitoring for some contaminants less than once per year because concentrations of these contaminants do not change frequently. Some data, though representative, is more than one year old.

Total Coliform Rule

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2021. These revisions add the requirements of the federal Revised Total Coliform Rule, effective since April 1, 2016, to the existing state Total Coliform Rule.

The revised rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and *E. coli* bacteria). The USEPA anticipates greater public health protection as the rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system. The state Revised Total Coliform Rule became effective July 1, 2021.

Questions About Your Water? Contact Us for Answers.

For information or questions about this report, please call Moulton Niguel Customer Service at **(949) 831-2500** or visit **www.mnwd.com**.

A copy of this report is also available on our website: **www.mnwd.com/CCR**.

For more information about the health effects of the listed contaminants in this report, call the **USEPA Safe Drinking Water Hotline** at **(800) 426-4791**.

Community Participation

The Moulton Niguel Board of Directors typically meets at the District's Headquarters, 26161 Gordon Road, Laguna Hills, California 92653 on the second Thursday of the month at 6 pm. More information about regular meetings and events is available at **www.mnwd.com/events**.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alquien que lo entienda bien.

此份有关你的食水报告,内有重要资料
和讯息,请找他人为你翻译及解释清楚。

"هذا التقرير يحتوي على معلومات مهمّة تتعلق بمياه الشفة (أو الشرب). ترجم التقرير, أو تكلم مع شخص يستطيع أن يفهم التقرير."

Moulton Niguel: No PFOA or PFOS Chemicals Detected in Our Water

The State of California has established regulations for two specific PFAS chemicals: perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Moulton Niguel's water has been tested for these chemicals and does not have any known or reportable levels of PFOA or PFOS. Additional PFAS information is available at: www.waterboards.ca.gov/pfas/.

moulton niguel water district

26161 Gordon Road ♦ Laguna Hills, California 92653
www.mnwd.com

APPENDIX G

Project Personnel Qualifications

HILLMANN CONSULTING

VIVIANNE BISSON

Senior Project Manager
Due Diligence & Remediation Mgmt

CONTACT INFORMATION

1745 W. Orangewood Avenue
Suite 201
Orange, CA 92868

(714) 634-9500

vbisson@hillmannconsulting.com

EDUCATION

B.S. Biology
University of California - San Diego | San Diego, CA

CERTIFICATIONS

AHERA Asbestos Building Inspector

AHERA Lead-Based Paint Building Inspector

AHERA Mold Building Inspector

OSHA 10HR Construction Safety & Health

Ladder & Scaffolding Safety

WITH HILLMANN SINCE 2024

PROFESSIONAL EXPERIENCE

As a Senior Project Manager, Ms. Bisson plays a pivotal role in advising both private and public sector clients on a diverse range of environmental projects. Her expertise spans various areas, including due diligence (Phase I and II), regulatory compliance, HSE audits, soil and groundwater remediation, and mold investigations, as well as asbestos surveys. She collaborates with the Hillmann team, ensuring a comprehensive environmental review process, even navigating complex compliance steps for fund release. Ms. Bisson is highly knowledgeable about the requirements set forth by regulatory bodies such as the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), the National Institute for Occupational Safety and Health (NIOSH), and numerous other federal, state, and local regulations impacting environmental health and safety.

RELEVANT EXPERIENCE

Independent Contractor | San Diego, CA
As an Independent Contractor, Ms. Bissan excelled in a multifaceted role as an Environmental Consultant, Technical Writer, and Project Manager. She conducted complex Phase I Environmental Site Assessments for national clients, managing numerous projects simultaneously. Ms. Bissan's responsibilities included due diligence, pre-site preparation, and field investigations, where she interviewed tenants, documented chemical storage, and ensured compliance with regulations. She compiled data for Zoning Reports, Asbestos/Lead/Mold Surveys, and Soil/Groundwater Remediation, interpreting federal and state regulatory sources. Her expertise extended to researching property history, and she skillfully synthesized field inspection findings, regulatory data, and historical records into comprehensive reports, offering valuable recommendations for further investigation.

HILLMANN CONSULTING

DAVID H. RUTHERFORD

Technical Director
Corporate Executive

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Union, NJ 07083

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EDUCATION

B.S. Environmental Sciences, Cook College, New Brunswick, NJ

CERTIFICATIONS

40 HR HAZWOPER 29 CFR 1910.120

Certified Hazardous Materials Manager 1992-2003

10 HR OSHA Construction Safety & Health

Construction Procedures, Materials and Costs – Rutgers Center for Continuing Professional Development

WITH HILLMANN SINCE 1988

PROFESSIONAL EXPERIENCE

Mr. Rutherford currently serves as Hillmann's Technical Director for Due Diligence services. Previously, Mr. Rutherford served as the Quality Management Director, and Director of Environmental Due Diligence. He has over 35 years of experience in the consulting industry, specifically in managing and performing environmental and construction risk property assessments, property condition assessments including USEPA and NJDEP Preliminary Assessments.

As the Technical Director for Due Diligence services, Mr. Rutherford is responsible for development of standard protocols, report content/templates, and providing technical support to operational staff. He has managed large national accounts for real estate due diligence services including a desktop review service that handled nearly 500 properties per year.

Additionally, Mr. Rutherford has performed and/or managed Phase II Environmental Site Assessments (ESAs), Underground Storage Tank (UST) investigations/closures, Property Condition Assessments (PCA), Construction Monitoring inspections, Asbestos surveys, Asbestos Abatement Project Monitoring services, Indoor Air Quality (IAQ) surveys, NPDES Discharge Monitoring, Community Right-to-Know surveys, and Environmental Risk Analysis for compliance with the Sarbanes-Oxley act.

RELEVANT PROJECT EXPERIENCE

TD Bank, N.A. | Various Locations
Hillmann has performed phase I ESAs at several properties on behalf of TD Bank. Mr. Rutherford previously managed the group that conducts the assessments for this contract, which is ongoing.

HSBC Bank | NYC Metro
Hillmann provided complete environmental program including phase I ESAs, asbestos surveys, air monitoring, bid administration, O&M programs, industrial hygiene, and indoor air quality programs.

Peapack Gladstone Bank | NY, NJ, and PA
Hillmann has performed phase I ESAs at numerous properties on behalf of Peapack Gladstone Bank since 2013. Mr. Rutherford

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RELEVANT PROJECT EXPERIENCE CONTINUED

previously managed the team that conducts the assessments for this contract, which is ongoing.

The Davis Companies | Norwalk, CT
On behalf of The Davis Companies, Hillmann provided an Advisory Report of analysis and opinion regarding the potential electromagnetic fields (EMF) health risks that may be associated with a newly constructed sub-station on an adjacent property.

Multi-Family Portfolio | New York, NY
Hillmann conducted environmental due diligence services and a construction plan and cost review for a rehabilitation project of 45 low-income multi-family apartment buildings in upper Manhattan. Mr. Rutherford coordinated and oversaw the completion of 45 phase I ESA reports and 5 phase II site investigations associated with this project.

MBD Community Housing Corporation | Bronx, NJ
Hillmann conducted environmental due diligence services for various multi-family apartment buildings located throughout New York City; including a portfolio of 11 buildings in Bronx, NY.

International Portfolio of Industrial Properties
Mr. Rutherford was the Project Manager for a multi-level environmental due diligence assessment for a portfolio of 113 light industrial properties located throughout the United States and Mexico.

Confidential Client | Various Locations
Mr. Rutherford was responsible for conducting multiple risk assessments for a confidential client. The purpose for conducting the assessments was to project a cost estimate for potential environmental liabilities associated with over 3,700 former drug store facilities in compliance with the Sarbanes-Oxley act.

HILLMANN CONSULTING

CONTACT INFORMATION

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EDUCATION

B.S. Environmental Science
University of Southern CA | Los Angeles, CA

CERTIFICATIONS

Cal-OSHA Certified Asbestos Consultant

CDPH Accredited Lead Inspector/Assessor/ Project Monitor

CA Certified Site Surveillance Technician

OSHA 40HR HAZWOPER

OSHA 8HR HAZPOWER Refresher

8HR Confined Space Entry

Ladder and Scaffolding Safety Training

WITH HILLMANN SINCE 2016

JOHN "RYAN" TERWILLIGER

Principal | Regional Manager
Building Sciences & Industrial Hygiene

PROFESSIONAL EXPERIENCE

Mr. Terwilliger is responsible for business operations, fiscal management, and field staff management for Hillmann's Orange, CA office. He also performs asbestos surveys and investigations to identify asbestos and lead materials associated with occupational hazards. He supervises work practices and controls in accordance with job specifications, current EPA, OSHA, and State Regulations for asbestos remediation projects in commercial, industrial and multi-family residential buildings. Mr. Terwilliger also performs IAQ and mold and moisture investigations in commercial, industrial, and residential settings nationwide. Additionally, he conducts awareness training on building science topics such as asbestos, lead and mold and provides litigation support consultation.

RELEVANT PROJECT EXPERIENCE

Tishman Speyer Properties | Various Locations
Hillmann has provided the complete building sciences program for Tishman Speyer properties since 1987. Our services include environmental health and safety, industrial hygiene, phase I environmental site assessments, asbestos surveys, air monitoring, bid administration, O&M programs and indoor air quality programs on various commercial, industrial and multi-family residential properties.

Westfield | Various Locations
Since 2000, Hillmann has been providing an building sciences program encompassing phase I environmental site assessments, asbestos and lead surveys, air monitoring, bid administration and O&M programs, industrial hygiene and indoor air quality programs, and hazardous materials assessments on their mall properties throughout the county.

Brookfield Office Properties | Various Locations
Hillmann has been providing hazardous materials surveys, development abatement specifications, and managing the oversight activities during the abatement activities at various Brookfield sites throughout California.

Verizon | Various Locations
Hillmann conducted hazardous materials surveys, development abatement specifications, and project monitoring during abatement at various Verizon locations throughout California.

HILLMANN
CONSULTING

RELEVANT PROJECT EXPERIENCE CONTINUED

California Department of Transportation | Central Valley & Northern California

Hillmann has been performing asbestos and lead-based paint surveys for the California Department of Transportation (DOT). IN doing so, we perform comprehensive asbestos containing materials and lead-based paint surveys of residential and commercial buildings that are slated for demolition and generated a report of findings in order to aid the DOT in facilitating the road improvement programs and building renovations throughout the Central Valley and Northern California areas. Also, during the abatement of asbestos from DOT-owned buildings, we provide contractor oversight and air monitoring services for regulatory compliance.

Public Storage | Los Angeles, CA

Hillman preformed comprehensive asbestos, lead-based paint, and universal waste materials survey of commercial and industrial buildings throughout Southern California. Hazardous materials surveys were conducted prior to renovation. Mr. Terwilliger developed abatement specifications and managed the abatement oversight during the renovation of the buildings.

APPENDIX F:

Hydrology and Water Quality Supporting Information

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TTM 19340

ALISO VIEJO, CALIFORNIA

PRELIMINARY HYDROLOGY REPORT

PREPARED FOR:

Meritage Homes
5 Peters Canyon Road
Irvine, CA 92606
949-266-3824
Date Prepared: 9/2024

PREPARED BY:

X Engineering & Consulting, Inc.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100
Project Manager: Eric Lissner, PE
Project Number: 117-010

ENGINEERING & CONSULTING

This report was prepared by or under the supervision of the undersigned registered civil engineer who attests to the technical information contained herein.

_____ _____

Eric Lissner Date

ENGINEERING & CONSULTING

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FIGURES

Figure 1: Existing Condition Rational Method Hydrology Map

Figure 2: Proposed Condition Rational Method Hydrology Map

APPENDICES

Appendix A: Exhibits

Appendix B: Hydrologic Calculations

Appendix C: Hydraulic Calculations

Appendix D: Supporting Exhibits

Appendix E: Geotechnical Report

I. INTRODUCTION

A. PROJECT SITE DESCRIPTION

The project site is located at 95 Argonaut, in the City of Aliso Viejo, California in South Orange County and covers 2.77 acres. The site is described in the County tax assessor maps as APN 623-091-01and is bounded by Glenwood Drive to the north, Argonaut to the west and south, a commercial property 85 Argonaut to the south, and two aboveground water tanks owned by Moulton Niguel Water District to the east. A singular driveway access is located at the south boundary of the site at the Argonaut knuckle. See Vicinity Map in **Section I.C.**

The existing site is occupied with a single two-story, concrete and glass office building, parking lot, and landscaping. Development of the site occurred in approximately 1986. The existing building and parking lot will be demolished and redeveloped into a residential development with 61 3-story townhomes comprised of 7- and 8-plex buildings. The present zoning and General Plan land use will be changed to accommodate the new use.

Based on the FEMA flood map revised December 3, 2009, FIRM panel 06059C0426J, the site is in Flood Zone X, areas of minimal flood hazard.

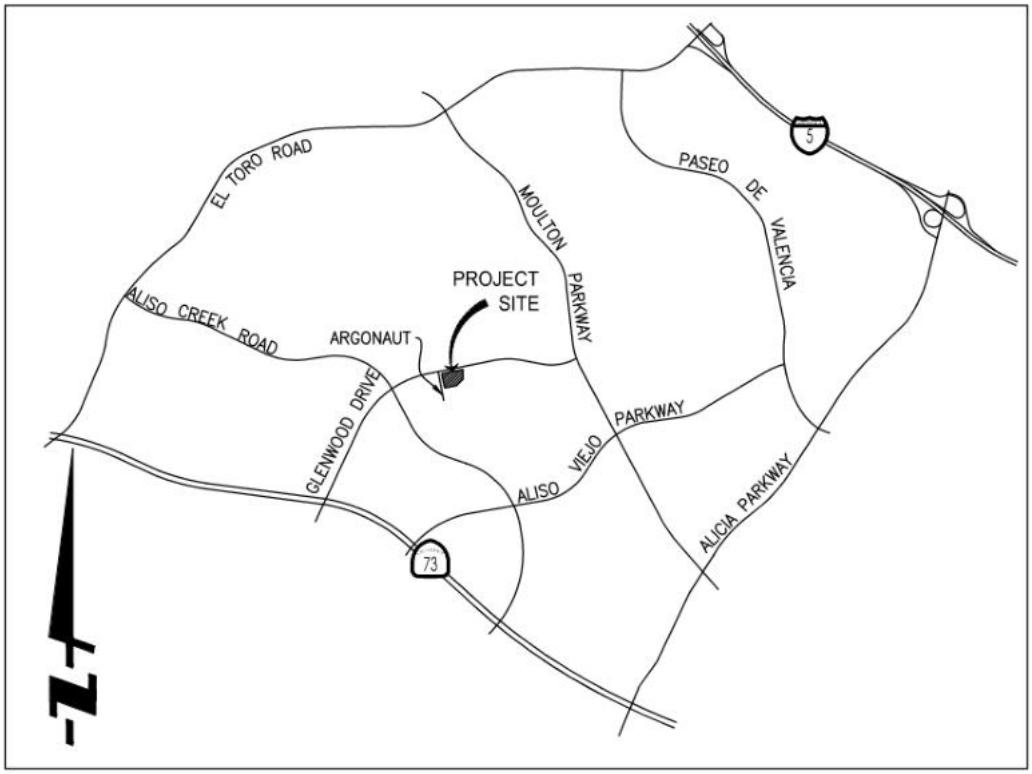
B. PURPOSE AND SCOPE

The purpose of this preliminary study is to analyze the pre- and post-development drainage conditions in order to provide adequate drainage facilities for the proposed development project.

The scope of this study includes:

1. Determination of existing and proposed drainage patterns
2. Peak flow analysis of the downstream discharge points for both existing and proposed drainage conditions
3. Validation of the proposed drainage facility design
4. Performance of hydrograph routing calculations

C. PROJECT VICINITY MAP



VICINITY MAP

N.T.S.

II. EXISTING TOPOGRAPHIC AND HYDROLOGIC CONDITIONS

A. EXISTING TOPOGRAPHY

The existing topography is sloped approximately 1% to 2% from north to south with elevations ranging between 445' and 441'. Per the soils report dated May 2024 by SA Geotechnical, the site is underlain by an approximately 25 to 75-foot silty clayey artificial fill material overlying bedrock. Artificial fill in the region is from the result of the original mass grading in the 1980s. Groundwater was encountered at a depth of 55-feet below ground surface (bgs). Historic high groundwater in the region indicates high groundwater is greater than 20 feet bgs. However, historic groundwater measurements are indicative of being below original grades prior to mass grading. Soils in this region are categorized as Hydrologic Soils Group (HSG) class D (see **Appendix C** for soils map).

B. EXISTING DRAINAGE PATTERN

The project site is located within the Aliso Creek Watershed and is subject to hydromodification mitigation requirements, which are discussed separately in the Project's Water Quality Management Plan.

Site drainage generally is broken into two main watershed subareas in the existing condition shown in **Figure 1**. Drainage originates from overland flow of sloped landscaping

and roof runoff that sheet flows east and west into perimeter gutters at the edge of the parking lot. Gutter flow drains into two curb outlets on either side of the driveway aisle located at the present-day driveway access to Argonaut. Stormwater flows into the gutter along Argonaut and to an existing catch basin approximately 250 feet south of the site. This catch basin collects stormwater into a 39-inch reinforced concrete pipe (RCP) that eventually increases up to a 78-inch R.C.P downstream. The 78-inch R.C.P. drains along a rip rap energy dissipation structure at Aliso Creek, where stormwater is conveyed to the Pacific Ocean at South Laguna Beach.

C. EXISTING STORM DRAIN FACILITIES

Existing storm drain facilities are identified in the OCFCD Base Map of Drainage Facilities in Orange County, Sheet 64 Appendix **B2** and shown in **Figure 1**. Apart from minor landscape drains that outlet to parking lot curb face, there are no known underground storm drain facilities onsite.

III. HYDROLOGIC ANALYSIS

A. STORM FREQUENCY

This report includes hydrology analysis for the existing and proposed project conditions based on a 25-year frequency storm event. This storm frequency is chosen as a more conservative parameter than the required 20-year storm frequency by the City of Aliso Viejo. The hydrologic parameters used for the analysis are in accordance with the 1986 County of Orange Hydrology Manual and its 1996 Addendum.

B. METHODOLOGY

The City of Aliso Viejo is an incorporated city within Orange County. Accordingly, the City of Aliso Viejo accepts methodologies and practices as described in the 1986 Orange County Hydrology Manual and its 1996 Addendum.

The rational method, as described in Section D of the County's hydrology manual, is used for determining all peak runoff rates and times of concentration for this study. The rational method is implemented using CivilDesign software, 2018 version, developed by Civil Design Corporation and Joseph E. Bonadiman and Associates, Inc, and is accepted by the County of Orange for hydrologic study purposes.

C. EXISTING CONDITION

As described in Section II.B., drainage areas of the existing project site are depicted in **Figure 1** in **Appendix A**.

Peak flow originates as overland flow from a highpoint in subarea A-1 (node 101). Stormwater flow from subareas A-2 and A-3 are conveyed by perimeter gutters to drainage curb outlets at node 103. Stormwater flow exits the site and is conveyed in a

gutter on Argonaut flowing south into a catch basin approximately 250-feet south of the site.

Table III.1 Existing Onsite Runoff

Area	Existing Condition 25-Year Storm		
	QPEAK (cfs)	Area (AC)	CivilD file name
Area A	7.7	2.77	117010Ex25v2
Total Project	7.7	2.77	

See **Appendix B** for detailed hydrologic calculations.

D. PROPOSED CONDITION

The proposed drainage patterns are depicted in **Figure 2** in **Appendix A**.

Per the MS4 Permit requirements for redevelopment, this project will also incorporate low impact development (hereafter, LID) elements into the site design as well as implementation of the structural best management practices (hereafter, BMP). Stormwater for the project will be routed through the BMPs before discharging offsite.

The proposed condition peak flow drainage will mimic the existing condition to the maximum extent possible as described in **Section III.C**. Runoff originating as overland flow along the site boundary and from the proposed buildings will be conveyed into area drains placed throughout the development.

All project drainage will be routed to two proposed modular wetland systems (MWS) for water quality treatment prior to entering a proposed subsurface detention basin in the southeasterly portion of the project. The detention system is designed for hydromodification management as well as peak flow mitigation. Peak flows from the site will ultimately discharge through a proposed 18-inch pipe connection into an existing 24-inch R.C.P storm drain downstream.

The proposed peak flow drainage for the project is described in **Table III.2**:

Table III.2 Proposed Project Runoff (Unmitigated)

Subarea	Final Node	Proposed Unmitigated Condition 25-Year Storm		
		QPEAK (cfs)	TArea (AC)	CivilD file name
A-1	102	1.5	0.38	117010Prop25v2
A-2	103	1.4	0.39	117010Prop25v2
A-3	103	0.4	0.13	117010Prop25v2
A-4	105	2.1	0.58	117010Prop25v2
A-5	106	1.5	0.50	117010Prop25v2
A-6	106	1.5	0.44	117010Prop25v2
A-7	107	0.2	0.13	117010Prop25v2
A-8	107	0.5	0.15	117010Prop25v2
B-1		0.3	0.07	117010Prop25B
Total Project		**9.0**	**2.70 (2.77)**	

It is noted that the proposed condition has a reduction of tributary area by 0.07-acres. This region drains offsite in the proposed condition at the northwest corner of the site. Flow

passes through landscaping and into the gutter at Glenwood Drive and Argonaut and is deemed to be negligible.

Comparing the existing condition peak flows from **Table III.1** and the proposed unmitigated condition peak flows in **Table III.2**, the unmitigated proposed condition peak flows exceed the existing condition peak flows. Because of this condition, the project is proposing a basin to reduce the proposed 25-year storm flow rate from the project.

IV. PROPOSED ONSITE DRAINAGE FACILITIES

A. PROPOSED STORM WATER FACILITIES

As described in Section III.D, this project will implement structural BMPs that meet water quality and hydromodification management objectives as required by the MS4 Permit.

All existing storm drainage structures (i.e. curb and gutter) within the site will be demolished. Stormwater from the proposed site will be intercepted by roof downspouts, new area drains, gutters, and catch basins and conveyed to the water quality treatment system paired with a downstream detention system. The detention system serves to mitigate hydromodification (HMP), and peak storm flows. Storm water flows through the subsurface detention system were analyzed in two scenarios:

1. HMP scenario:
   This will be the scenario for the more frequent storm events (i.e. 10% of the 2-year through 10-year storms). Stormwater is routed through the paired MWS units and enters the subsurface detention vault. Stormwater then flows through a riser, exits through a 2-inch low-flow orifice at the bottom of the riser as well as a 0.65 foot wide by 0.8 foot height notch (Section A detail **Figure 2)**, and to the 24-inch R.C.P. storm drain to the south along Argonaut. Placement and sizing of the orifice is designed to meet hydromodification objectives detailed in the project's WQMP.

2. Peak storm:
   During less frequent and more intense storm events (i.e. the 25 year storm), stormwater will flow over an internal bypass weir in the MWS units, through the detention vault, through the 2 inch orifice at the system invert and over the downstream weir plate. Stormwater then flows underground to the existing 24 inch RCP in Argonaut.

B. MITIGATED PEAK STORM FLOWS

As described in Section III.D, the proposed drainage patterns are depicted in **Figure 2** in **Appendix A.**

The proposed subsurface detention system has been sized accordingly to accommodate hydromodification management and peak flow attenuation. The proposed condition unmitigated peak flows exceed the existing condition peak flows by 1.3 cfs. Results from the existing and proposed condition studies are in Table III.1 and Table III.2 respectively.

As described in the project WQMP, the detention facility was sized for hydromodification and peak flow mitigation by routing the 25 year, 24-hour peak storm hydrograph through

the detention system. Basin routing was accomplished using Flood Hydrograph routing of the peak storm hydrograph with modified puls routing in CivilDesign software, 2018 version, developed by Civil Design Corporation and Joseph E. Bonadiman and Associates, Inc. All routing calculations are provided in **Appendix B**.

Table IV.1 Proposed Onsite Runoff (Mitigated)

Existing Condition	Proposed Unmitigated Condition	Proposed Mitigated Condition	
QPEAK (cfs)	QPEAK (cfs)	QPEAK (cfs)	CivilD file name
7.7	**9.0**	**7.13**	117010Argonautrte11

C. PROPOSED OFFSITE STORMWATER FACILITIES

As part of the improvements to 95 Argonaut, a new 18 inch RCP storm drain connection will be made on the existing 24 inch RCP storm drain. This connection is approximately 110 feet south of the project along Argonaut. A hydraulic study was performed on the existing 24 inch storm drain serving Argonaut (**Appendix C**). This was to demonstrate the project flow would not negatively impact the present capacity of the storm drain. The proposed attenuated peak flow of 7.1 cubic feet per second (cfs) was shown to not have an adverse effect on the existing storm drain.

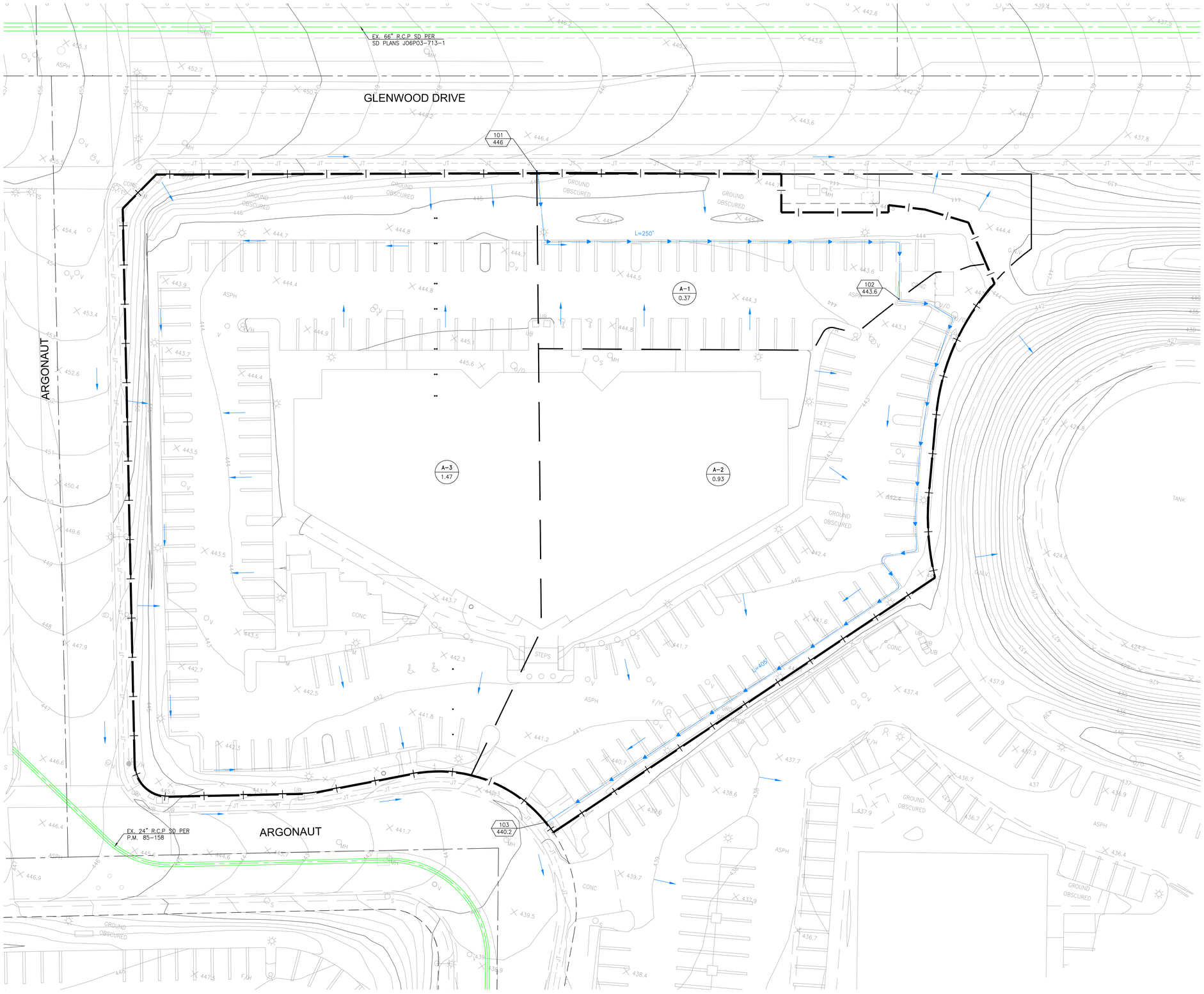
V. CONCLUSION

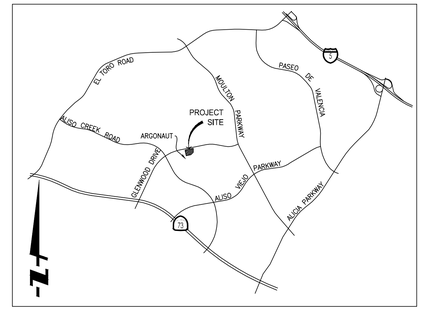
Based upon the analyses completed in this preliminary study, the proposed condition project has been adequately designed to convey the 25-year storm flow to ensure flood protection for the onsite areas as well as for the surrounding neighbors, and no adverse impacts to the storm drain system.

VI. REFERENCES

1. Orange County Hydrology Manual (1986)
2. Orange County Hydrology Manual Addendum (1996)
3. Orange County Model Water Quality Management Plan
4. Orange County Technical Guidance Document, South Orange County (2017)
5. SA Geotechnical. Geotechnical Subsurface Exploration, Due Diligence Study, and Preliminary Geotechnical Recommendations, Proposed Residential Development Report, 95 Argonaut. May 2024.

APPENDIX A





VICINITY MAP
N.T.S.

LEGEND

- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- EXISTING RIGHT OF WAY
- PROPERTY BOUNDARY
- L=270' — SURFACE FLOW PATH LENGTH
- SURFACE FLOW PATH
- 101 / 781.0 / *771.0 — NODE NUMBER, FLOWLINE ELEVATION, *INDICATES INVERT ELEVATION
- A / 0.64 — SUBAREA DESIGNATION, SUBAREA ACREAGE
- DIRECTION OF SURFACE FLOW
- EXISTING STORM DRAIN

20' 0' 10' 20'
SCALE: 1" = 20'

DRAINAGE SUMMARY

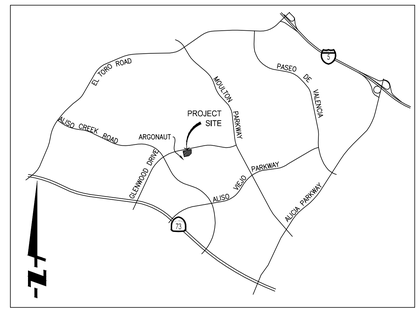
NODE DESIGNATION	SUBAREA DESIGNATION	SUBAREA ACREAGE	TOTAL ACREAGE	25-YR STORM		
				SUBAREA RUNOFF (CFS)	TOTAL RUNOFF (CFS)	T_C (MIN)
102	A-1	0.37	0.37	1.3	1.3	7.0
103	A-2	0.93	1.30	2.3	3.6	10.7
103	A-3	1.47	2.77	4.1	7.8	10.7
TOTAL			2.77		7.8	10.7

FIGURE 1: EXISTING CONDITION HYDROLOGY MAP
TTM 19340
ALISO VIEJO,CA

X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

P:\117\010\Reports\Entitlement\Hydrology - Preliminary\Exhibits\117-010 Figure 1 - Existing Condition.dwg Plotted At: September 5, 2024 5:49 PM Last Saved By: randy.nett Last Saved At: September 5, 2024 4:09 PM





VICINITY MAP
N.T.S.

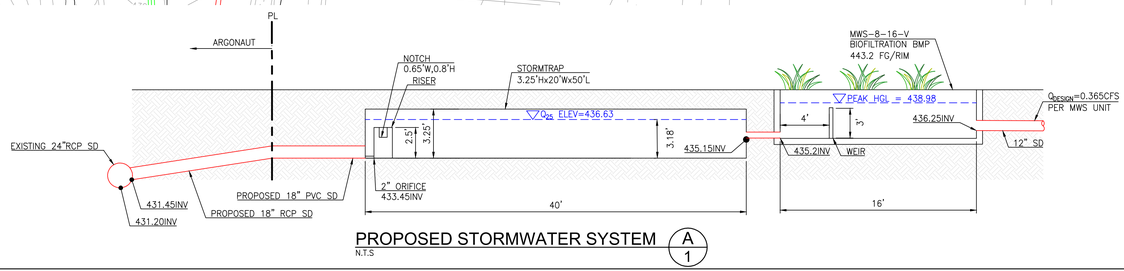
LEGEND

- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- EXISTING RIGHT OF WAY
- PROPERTY BOUNDARY
- L=270' — SURFACE FLOW PATH LENGTH
- SURFACE FLOW PATH
- 101 / 781.0 / *771.0 — NODE NUMBER / FLOWLINE ELEVATION / *INDICATES INVERT ELEVATION
- A / 0.64 — SUBAREA DESIGNATION / SUBAREA ACREAGE
- DIRECTION OF SURFACE FLOW
- SD — PROPOSED STORM DRAIN
- EXISTING STORM DRAIN

DRAINAGE SUMMARY

NODE DESIGNATION	SUBAREA DESIGNATION	SUBAREA ACREAGE	TOTAL ACREAGE	25-YR STORM		
				SUBAREA RUNOFF (CFS)	TOTAL RUNOFF (CFS)	T_C (MIN)
102	A-1	0.38	0.38	1.5	1.5	6.1
103	A-2	0.39	0.77	1.4	2.9	6.7
103	A-3	0.13	0.90	0.4	3.3	6.7
105	A-4	0.58	1.48	2.1	2.1	6.5
106	A-5	0.50	1.98	1.5	3.6	7.7
106	A-6	0.44	2.42	1.5	8.3	6.9
107	A-7	0.13	2.55	0.2	8.5	7.2
107	A-8	0.15	2.70	0.5	9.0	7.2
	*B-1	0.07	2.77	0.3	0.3	5.0
TOTAL PROJECT			2.70		9.0	7.4

*OFFSITE FLOW DRAINS TO STREET THROUGH SELF-TREATING LANDSCAPING



PROPOSED STORMWATER SYSTEM (A/1)
N.T.S.

20' 0' 10' 20'
SCALE: 1" = 20'

FIGURE 2: PROPOSED CONDITION HYDROLOGY MAP
TTM 19340
ALISO VIEJO,CA

X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

P:\117\01\Reports\Entitlement\Hydrology - Preliminary\Exhibits\117-010 Figure 2 - Proposed Condition.dwg Plotted At: September 5, 2024 5:50 PM Last Saved By: randy.ertl Last Saved At: September 5, 2024 4:09 PM

APPENDIX B

Orange County Rational Hydrology Program

(Hydrology Manual Date(s) October 1986 & November 1996)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2018 Version 9.0
Rational Hydrology Study, Date: 08/08/24 File Name:
117010ArgonautEx25v2.roc

117-010 95 Argonaut
Aliso Viejo, CA
Existing Condition Hydrology, 25-year storm

Program License Serial Number 6440

********* Hydrology Study Control Information **********

Rational hydrology study storm event year is 25.0

Decimal fraction of study above 2000 ft., 600M = 0.0000
English Units Used for input data

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

COMMERCIAL subarea type
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2) = 75.00
Pervious ratio(Ap) = 0.1000 Max loss rate(Fp)= 0.200(In/Hr)
Max Catchment Loss (Fm) = 0.020(In/Hr)
Initial subarea data:
Initial area flow distance = 250.000(Ft.)
Top (of initial area) elevation = 446.000(Ft.)
Bottom (of initial area) elevation = 443.600(Ft.)
Difference in elevation = 2.400(Ft.)
Slope = 0.00960 s(%)= 0.96
TC = k(0.304)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.008 min.

```
Rainfall intensity =      3.985(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.895
Subarea runoff =      1.320(CFS)
Total initial stream area =        0.370(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =   443.600(Ft.)
End of street segment elevation =   440.200(Ft.)
Length of street segment  =   405.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  12.000(Ft.)
Distance from crown to crossfall grade break  =   0.500(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [2] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.025
Gutter width =   2.500(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      2.549(CFS)
Depth of flow =   0.265(Ft.), Average velocity =   1.830(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   7.420(Ft.)
Flow velocity =   1.83(Ft/s)
Travel time =    3.69 min.     TC =   10.70  min.
 Adding area flow to street
COMMERCIAL subarea type
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.1000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.020(In/Hr)
Rainfall intensity =      3.137(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.894
Subarea runoff =      2.326(CFS) for    0.930(Ac.)
Total runoff =      3.646(CFS)  Total area =        1.30(Ac.)
Area averaged Fm value =    0.020(In/Hr)
Street flow at end of street =      3.646(CFS)
Half street flow at end of street =      1.823(CFS)
Depth of flow =   0.293(Ft.), Average velocity =   1.973(Ft/s)
```

```
Flow width (from curb towards crown)=   8.823(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      103.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
COMMERCIAL subarea type
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.1000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.020(In/Hr)
Time of concentration =    10.70 min.
Rainfall intensity =      3.137(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.894
Subarea runoff =      4.123(CFS) for    1.470(Ac.)
Total runoff =      7.770(CFS)  Total area =        2.77(Ac.)
Area averaged Fm value =    0.020(In/Hr)
End of computations, total study area =            2.77 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged SCS curve number (AMC 2) =  75.0
```

Orange County Rational Hydrology Program

(Hydrology Manual Date(s) October 1986 & November 1996)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2018 Version 9.0
Rational Hydrology Study, Date: 09/03/24 File Name:
117010ArgonautProp25v2.roc

117-010 Argonaut
Proposed Condition Hydrology
25-year storm event
2024-09-03 RRR

Program License Serial Number 6440

********* Hydrology Study Control Information **********

Rational hydrology study storm event year is 25.0

Decimal fraction of study above 2000 ft., 600M = 0.0000
English Units Used for input data

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2) = 75.00
Pervious ratio(Ap) = 0.2000 Max loss rate(Fp)= 0.200(In/Hr)
Max Catchment Loss (Fm) = 0.040(In/Hr)
Initial subarea data:
Initial area flow distance = 150.000(Ft.)
Top (of initial area) elevation = 444.690(Ft.)
Bottom (of initial area) elevation = 443.210(Ft.)
Difference in elevation = 1.480(Ft.)
Slope = 0.00987 s(%)= 0.99
TC = k(0.324)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 6.055 min.
Rainfall intensity = 4.328(In/Hr) for a 25.0 year storm

```
Effective runoff coefficient used for area (Q=KCIA) is C = 0.892
Subarea runoff =      1.467(CFS)
Total initial stream area =        0.380(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =   437.650(Ft.)
Downstream point/station elevation =   436.980(Ft.)
Pipe length  =   135.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.467(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     1.467(CFS)
Normal flow depth in pipe =    6.59(In.)
Flow top width inside pipe =   11.94(In.)
Critical Depth =    6.16(In.)
Pipe flow velocity =      3.32(Ft/s)
Travel time through pipe =    0.68 min.
Time of concentration (TC) =     6.73 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      103.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.1000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.020(In/Hr)
Time of concentration =     6.73 min.
Rainfall intensity =      4.076(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.892
Subarea runoff =      0.388(CFS) for    0.130(Ac.)
Total runoff =      1.855(CFS)  Total area =        0.51(Ac.)
Area averaged Fm value =    0.035(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      103.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
```

```
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.2000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.040(In/Hr)
Time of concentration =     6.73 min.
Rainfall intensity =      4.076(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.892
Subarea runoff =      1.417(CFS) for    0.390(Ac.)
Total runoff =      3.271(CFS)  Total area =        0.90(Ac.)
Area averaged Fm value =    0.037(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      106.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   436.980(Ft.)
Downstream point/station elevation =   436.810(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.271(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     3.271(CFS)
Normal flow depth in pipe =    9.48(In.)
Flow top width inside pipe =   14.47(In.)
Critical Depth =    8.75(In.)
Pipe flow velocity =      4.00(Ft/s)
Travel time through pipe =    0.15 min.
Time of concentration (TC) =     6.88 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      101.000 to Point/Station      106.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      0.900(Ac.)
Runoff from this stream =      3.271(CFS)
Time of concentration =    6.88 min.
Rainfall intensity =     4.027(In/Hr)
Area averaged loss rate (Fm) =    0.0371(In/Hr)
Area averaged Pervious ratio (Ap) = 0.1856
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      105.000
```

```
**** INITIAL AREA EVALUATION ****
_____________________________________________________________________
RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.2000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.040(In/Hr)
Initial subarea data:
Initial area flow distance =   205.000(Ft.)
Top (of initial area) elevation =   444.230(Ft.)
Bottom (of initial area) elevation =   441.650(Ft.)
Difference in elevation =     2.580(Ft.)
Slope =    0.01259  s(%)=       1.26
TC = k(0.324)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.535 min.
Rainfall intensity =      4.145(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.891
Subarea runoff =      2.143(CFS)
Total initial stream area =        0.580(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      106.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
_____________________________________________________________________
Upstream point/station elevation =   437.610(Ft.)
Downstream point/station elevation =   436.810(Ft.)
Pipe length  =   230.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.143(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     2.143(CFS)
Normal flow depth in pipe =    8.05(In.)
Flow top width inside pipe =   14.96(In.)
Critical Depth =    7.01(In.)
Pipe flow velocity =      3.20(Ft/s)
Travel time through pipe =    1.20 min.
Time of concentration (TC) =     7.74 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      106.000
**** SUBAREA FLOW ADDITION ****
_____________________________________________________________________
RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
```

```
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.2000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.040(In/Hr)
Time of concentration =     7.74 min.
Rainfall intensity =      3.768(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.890
Subarea runoff =      1.481(CFS) for    0.500(Ac.)
Total runoff =      3.624(CFS)  Total area =        1.08(Ac.)
Area averaged Fm value =    0.040(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      106.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      1.080(Ac.)
Runoff from this stream =      3.624(CFS)
Time of concentration =    7.74 min.
Rainfall intensity =     3.768(In/Hr)
Area averaged loss rate (Fm) =    0.0400(In/Hr)
Area averaged Pervious ratio (Ap) = 0.2000
Summary of stream data:

Stream  Area  Flow rate      TC     Fm       Rainfall Intensity
 No.    (Ac.)   (CFS)       (min) (In/Hr)     (In/Hr)


1      0.90     3.271      6.88    0.037      4.027
2      1.08     3.624      7.74    0.040      3.768
Qmax(1) =
           1.000 *    1.000 *     3.271) +
           1.069 *    0.889 *     3.624) + =       6.718
Qmax(2) =
           0.935 *    1.000 *     3.271) +
           1.000 *    1.000 *     3.624) + =       6.683

Total of 2 main streams to confluence:
Flow rates before confluence point:
       4.271       4.624
Maximum flow rates at confluence using above data:
        6.718        6.683
Area of streams before confluence:
        0.900        1.080
Effective area values after confluence:
        1.860        1.980
```

```
Results of confluence:
Total flow rate =      6.718(CFS)
Time of concentration =     6.879 min.
Effective stream area after confluence  =      1.860(Ac.)
Study area average Pervious fraction(Ap) =  0.193
Study area average soil loss rate(Fm) =    0.039(In/Hr)
Study area total =       1.98(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      106.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.2000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.040(In/Hr)
Time of concentration =     6.88 min.
Rainfall intensity =      4.027(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.891
Subarea runoff =      1.539(CFS) for    0.440(Ac.)
Total runoff =      8.257(CFS)  Total area =        2.30(Ac.)
Area averaged Fm value =    0.039(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      107.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   436.810(Ft.)
Downstream point/station elevation =   436.330(Ft.)
Pipe length  =    95.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.257(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =     8.257(CFS)
Normal flow depth in pipe =   13.36(In.)
Flow top width inside pipe =   20.21(In.)
Critical Depth =   12.80(In.)
Pipe flow velocity =      5.12(Ft/s)
Travel time through pipe =    0.31 min.
Time of concentration (TC) =     7.19 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
Process from Point/Station      107.000 to Point/Station      107.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.2000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.040(In/Hr)
Time of concentration =     7.19 min.
Rainfall intensity =      3.928(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.891
Subarea runoff =      0.250(CFS) for    0.130(Ac.)
Total runoff =      8.506(CFS)  Total area =        2.43(Ac.)
Area averaged Fm value =    0.039(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      107.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
RESIDENTIAL(11+ dwl/acre)
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
SCS curve number for soil(AMC 2)  = 75.00
Pervious ratio(Ap) = 0.2000  Max loss rate(Fp)=     0.200(In/Hr)
Max Catchment Loss (Fm) =     0.040(In/Hr)
Time of concentration =     7.19 min.
Rainfall intensity =      3.928(In/Hr) for a    25.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.891
Subarea runoff =      0.525(CFS) for    0.150(Ac.)
Total runoff =      9.031(CFS)  Total area =        2.58(Ac.)
Area averaged Fm value =    0.039(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =   436.330(Ft.)
Downstream point/station elevation =   433.600(Ft.)
Pipe length  =    95.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.031(CFS)
Nearest computed pipe diameter  =     15.00(In.)
```

Calculated individual pipe flow =   9.031(CFS)
Normal flow depth in pipe =   10.38(In.)
Flow top width inside pipe =   13.85(In.)
Critical Depth =   13.88(In.)
Pipe flow velocity =   9.97(Ft/s)
Travel time through pipe =   0.16 min.
Time of concentration (TC) =   7.35 min.
End of computations, total study area =   2.70 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.195
Area averaged SCS curve number (AMC 2) = 75.0

Orange County Rational Hydrology Program

(Hydrology Manual Date(s) October 1986 & November 1996)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2018 Version 9.0
Rational Hydrology Study, Date: 09/03/24 File Name:
117010ArgonautProp25B.roc

117-010 Argonaut
Proposed Condition, 25-year storm
Subarea B, offsite drainage
2024-09-03 RRR

Program License Serial Number 6440

********* Hydrology Study Control Information **********

Rational hydrology study storm event year is 25.0

Decimal fraction of study above 2000 ft., 600M = 0.0000
English Units Used for input data

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

SCS curve number for soil(AMC 2) = 84.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fp)= 0.200(In/Hr)
Max Catchment Loss (Fm) = 0.200(In/Hr)
Initial subarea data:
Initial area flow distance = 15.000(Ft.)
Top (of initial area) elevation = 452.640(Ft.)
Bottom (of initial area) elevation = 451.920(Ft.)
Difference in elevation = 0.720(Ft.)
Slope = 0.04800 s(%)= 4.80
TC = k(0.706)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 3.828 min.
Rainfall intensity = 5.611(In/Hr) for a 25.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.868
Subarea runoff = 0.341(CFS)
Total initial stream area = 0.070(Ac.)
End of computations, total study area = 0.07 (Ac.)
The following figures may

be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number (AMC 2) = 84.0

APPENDIX C

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989-2018, Version 9.0

Study date 08/09/24 File Name 117010ArgonautUHv2.out

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Orange County Unit Hydrograph Hydrology Method
Manual Date(s) - October 1986, November 1996

Program License Serial Number 6440

117-010 95 Argonaut
Proposed Condition, 25-year storm
24-hour hydrograph

Storm Event Year = 25

Antecedent Moisture Condition = 2

English (in-lb) Input Units Used

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******** Area-averaged max loss rate, Fm ********

SCS curve No.(AMCII)	Area (Ac.)	Area Fraction	Soil Group	Fp (In/Hr)	Ap (dec.)	Fm (In/Hr)
75.0	2.7	1.00	D	0.200	0.240	0.048

Area-averaged adjusted loss rate Fm (In/Hr) = 0.048

********* Area-Averaged low loss rate fraction, Yb **********

Area	Area	SCS CN	SCS CN	S

```
Pervious
      (Ac.)      Fract         (AMC2)    (AMC2)           Yield
Fr
          0.65   0.240         75.0      75.0       3.33
0.455
          2.05   0.760         98.0      98.0       0.20
0.947

     Area-averaged catchment yield fraction, Y =  0.829
     Area-averaged low loss fraction, Yb =  0.171
     ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++
     User entry of time of concentration  =   0.130 (hours)
     Watershed area =       2.70(Ac.)
     Catchment Lag time =   0.104 hours
     Unit interval =   5.000 minutes
     Unit interval percentage of lag time = 80.1282
     Hydrograph baseflow =     0.00(CFS)
     Average maximum watershed loss rate(Fm) =  0.048(In/Hr)
     Average low loss rate fraction (Yb) = 0.171 (decimal)
     VALLEY DEVELOPED S-Graph Selected
     Computed peak 5-minute rainfall =  0.400(In)
     Computed peak 30-minute rainfall =  0.870(In)
     Specified peak 1-hour rainfall =  1.150(In)
     Computed peak 3-hour rainfall =  1.940(In)
     Specified peak 6-hour rainfall =  2.710(In)
     Specified peak 24-hour rainfall =  4.490(In)


     Rainfall depth area reduction factors:
     Using a total area of       2.70(Ac.) (Ref: fig. E-4)

     5-minute factor = 1.000     Adjusted rainfall =  0.400(In)
     30-minute factor = 1.000    Adjusted rainfall =  0.870(In)
     1-hour factor = 1.000       Adjusted rainfall =  1.150(In)
     3-hour factor = 1.000       Adjusted rainfall =  1.940(In)
     6-hour factor = 1.000       Adjusted rainfall =  2.710(In)
     24-hour factor = 1.000     Adjusted rainfall =  4.490(In)
     ------------------------------------------------------------
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                    U n i t  H y d r o g r a p h
     ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++
     Interval          'S' Graph          Unit Hydrograph
     Number            Mean values             ((CFS))
     ------------------------------------------------------------
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                (K =        32.65 (CFS))

       1               11.341                   3.703
       2               63.902                  17.163
```

3	94.008	9.830
4	98.848	1.581
5	100.000	0.376

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.3999	0.3999
2	0.5402	0.1402
3	0.6440	0.1038
4	0.7296	0.0856
5	0.8038	0.0741
6	0.8699	0.0661
7	0.9256	0.0557
8	0.9767	0.0511
9	1.0241	0.0474
10	1.0685	0.0444
11	1.1103	0.0418
12	1.1499	0.0396
13	1.1945	0.0447
14	1.2374	0.0429
15	1.2787	0.0413
16	1.3186	0.0399
17	1.3572	0.0386
18	1.3947	0.0374
19	1.4311	0.0364
20	1.4664	0.0354
21	1.5009	0.0345
22	1.5345	0.0336
23	1.5673	0.0328
24	1.5994	0.0321
25	1.6308	0.0314
26	1.6615	0.0307
27	1.6917	0.0301
28	1.7212	0.0295
29	1.7502	0.0290
30	1.7787	0.0285
31	1.8067	0.0280
32	1.8342	0.0275
33	1.8612	0.0271
34	1.8879	0.0266
35	1.9141	0.0262
36	1.9400	0.0258
37	1.9658	0.0258
38	1.9912	0.0254
39	2.0163	0.0251
40	2.0411	0.0248
41	2.0655	0.0245
42	2.0897	0.0241
43	2.1135	0.0238
44	2.1371	0.0236
45	2.1604	0.0233

46	2.1834	0.0230
47	2.2062	0.0228
48	2.2287	0.0225
49	2.2509	0.0223
50	2.2730	0.0220
51	2.2948	0.0218
52	2.3164	0.0216
53	2.3378	0.0214
54	2.3589	0.0212
55	2.3799	0.0210
56	2.4007	0.0208
57	2.4212	0.0206
58	2.4416	0.0204
59	2.4618	0.0202
60	2.4819	0.0200
61	2.5017	0.0199
62	2.5214	0.0197
63	2.5410	0.0195
64	2.5603	0.0194
65	2.5796	0.0192
66	2.5986	0.0191
67	2.6175	0.0189
68	2.6363	0.0188
69	2.6549	0.0186
70	2.6734	0.0185
71	2.6918	0.0184
72	2.7100	0.0182
73	2.7236	0.0136
74	2.7372	0.0135
75	2.7506	0.0134
76	2.7639	0.0133
77	2.7771	0.0132
78	2.7901	0.0131
79	2.8031	0.0130
80	2.8160	0.0129
81	2.8288	0.0128
82	2.8414	0.0127
83	2.8540	0.0126
84	2.8665	0.0125
85	2.8789	0.0124
86	2.8911	0.0123
87	2.9033	0.0122
88	2.9155	0.0121
89	2.9275	0.0120
90	2.9394	0.0119
91	2.9513	0.0119
92	2.9630	0.0118
93	2.9747	0.0117
94	2.9863	0.0116
95	2.9979	0.0115
96	3.0093	0.0115
97	3.0207	0.0114

98	3.0320	0.0113
99	3.0432	0.0112
100	3.0544	0.0112
101	3.0655	0.0111
102	3.0765	0.0110
103	3.0875	0.0110
104	3.0984	0.0109
105	3.1092	0.0108
106	3.1199	0.0108
107	3.1306	0.0107
108	3.1412	0.0106
109	3.1518	0.0106
110	3.1623	0.0105
111	3.1727	0.0104
112	3.1831	0.0104
113	3.1934	0.0103
114	3.2037	0.0103
115	3.2139	0.0102
116	3.2241	0.0102
117	3.2342	0.0101
118	3.2442	0.0100
119	3.2542	0.0100
120	3.2641	0.0099
121	3.2740	0.0099
122	3.2838	0.0098
123	3.2936	0.0098
124	3.3033	0.0097
125	3.3130	0.0097
126	3.3226	0.0096
127	3.3322	0.0096
128	3.3418	0.0095
129	3.3512	0.0095
130	3.3607	0.0094
131	3.3701	0.0094
132	3.3794	0.0093
133	3.3887	0.0093
134	3.3980	0.0093
135	3.4072	0.0092
136	3.4164	0.0092
137	3.4255	0.0091
138	3.4346	0.0091
139	3.4436	0.0090
140	3.4526	0.0090
141	3.4616	0.0090
142	3.4705	0.0089
143	3.4794	0.0089
144	3.4882	0.0088
145	3.4970	0.0088
146	3.5058	0.0088
147	3.5145	0.0087
148	3.5232	0.0087
149	3.5319	0.0087

150	3.5405	0.0086
151	3.5491	0.0086
152	3.5576	0.0085
153	3.5661	0.0085
154	3.5746	0.0085
155	3.5830	0.0084
156	3.5914	0.0084
157	3.5998	0.0084
158	3.6081	0.0083
159	3.6164	0.0083
160	3.6247	0.0083
161	3.6329	0.0082
162	3.6411	0.0082
163	3.6493	0.0082
164	3.6574	0.0081
165	3.6655	0.0081
166	3.6736	0.0081
167	3.6817	0.0080
168	3.6897	0.0080
169	3.6977	0.0080
170	3.7056	0.0080
171	3.7135	0.0079
172	3.7214	0.0079
173	3.7293	0.0079
174	3.7371	0.0078
175	3.7449	0.0078
176	3.7527	0.0078
177	3.7605	0.0078
178	3.7682	0.0077
179	3.7759	0.0077
180	3.7836	0.0077
181	3.7912	0.0076
182	3.7988	0.0076
183	3.8064	0.0076
184	3.8140	0.0076
185	3.8215	0.0075
186	3.8290	0.0075
187	3.8365	0.0075
188	3.8440	0.0075
189	3.8514	0.0074
190	3.8588	0.0074
191	3.8662	0.0074
192	3.8736	0.0074
193	3.8809	0.0073
194	3.8882	0.0073
195	3.8955	0.0073
196	3.9028	0.0073
197	3.9100	0.0072
198	3.9172	0.0072
199	3.9244	0.0072
200	3.9316	0.0072
201	3.9387	0.0071

202	3.9459	0.0071
203	3.9530	0.0071
204	3.9600	0.0071
205	3.9671	0.0071
206	3.9741	0.0070
207	3.9811	0.0070
208	3.9881	0.0070
209	3.9951	0.0070
210	4.0021	0.0070
211	4.0090	0.0069
212	4.0159	0.0069
213	4.0228	0.0069
214	4.0297	0.0069
215	4.0365	0.0068
216	4.0433	0.0068
217	4.0501	0.0068
218	4.0569	0.0068
219	4.0637	0.0068
220	4.0705	0.0067
221	4.0772	0.0067
222	4.0839	0.0067
223	4.0906	0.0067
224	4.0973	0.0067
225	4.1039	0.0067
226	4.1105	0.0066
227	4.1172	0.0066
228	4.1238	0.0066
229	4.1303	0.0066
230	4.1369	0.0066
231	4.1434	0.0065
232	4.1500	0.0065
233	4.1565	0.0065
234	4.1630	0.0065
235	4.1694	0.0065
236	4.1759	0.0065
237	4.1823	0.0064
238	4.1887	0.0064
239	4.1951	0.0064
240	4.2015	0.0064
241	4.2079	0.0064
242	4.2142	0.0064
243	4.2206	0.0063
244	4.2269	0.0063
245	4.2332	0.0063
246	4.2395	0.0063
247	4.2457	0.0063
248	4.2520	0.0063
249	4.2582	0.0062
250	4.2644	0.0062
251	4.2707	0.0062
252	4.2768	0.0062
253	4.2830	0.0062

254	4.2892	0.0062
255	4.2953	0.0061
256	4.3014	0.0061
257	4.3076	0.0061
258	4.3137	0.0061
259	4.3197	0.0061
260	4.3258	0.0061
261	4.3319	0.0061
262	4.3379	0.0060
263	4.3439	0.0060
264	4.3499	0.0060
265	4.3559	0.0060
266	4.3619	0.0060
267	4.3679	0.0060
268	4.3738	0.0060
269	4.3798	0.0059
270	4.3857	0.0059
271	4.3916	0.0059
272	4.3975	0.0059
273	4.4034	0.0059
274	4.4092	0.0059
275	4.4151	0.0059
276	4.4209	0.0058
277	4.4268	0.0058
278	4.4326	0.0058
279	4.4384	0.0058
280	4.4442	0.0058
281	4.4499	0.0058
282	4.4557	0.0058
283	4.4614	0.0057
284	4.4672	0.0057
285	4.4729	0.0057
286	4.4786	0.0057
287	4.4843	0.0057
288	4.4900	0.0057

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0057	0.0010	0.0047
2	0.0057	0.0010	0.0047
3	0.0057	0.0010	0.0047
4	0.0057	0.0010	0.0048
5	0.0058	0.0010	0.0048
6	0.0058	0.0010	0.0048
7	0.0058	0.0010	0.0048
8	0.0058	0.0010	0.0048
9	0.0058	0.0010	0.0048

10	0.0059	0.0010	0.0049
11	0.0059	0.0010	0.0049
12	0.0059	0.0010	0.0049
13	0.0059	0.0010	0.0049
14	0.0059	0.0010	0.0049
15	0.0060	0.0010	0.0049
16	0.0060	0.0010	0.0050
17	0.0060	0.0010	0.0050
18	0.0060	0.0010	0.0050
19	0.0061	0.0010	0.0050
20	0.0061	0.0010	0.0050
21	0.0061	0.0010	0.0051
22	0.0061	0.0010	0.0051
23	0.0061	0.0010	0.0051
24	0.0062	0.0011	0.0051
25	0.0062	0.0011	0.0051
26	0.0062	0.0011	0.0051
27	0.0062	0.0011	0.0052
28	0.0063	0.0011	0.0052
29	0.0063	0.0011	0.0052
30	0.0063	0.0011	0.0052
31	0.0063	0.0011	0.0053
32	0.0064	0.0011	0.0053
33	0.0064	0.0011	0.0053
34	0.0064	0.0011	0.0053
35	0.0064	0.0011	0.0053
36	0.0065	0.0011	0.0054
37	0.0065	0.0011	0.0054
38	0.0065	0.0011	0.0054
39	0.0065	0.0011	0.0054
40	0.0066	0.0011	0.0054
41	0.0066	0.0011	0.0055
42	0.0066	0.0011	0.0055
43	0.0067	0.0011	0.0055
44	0.0067	0.0011	0.0055
45	0.0067	0.0011	0.0056
46	0.0067	0.0011	0.0056
47	0.0068	0.0012	0.0056
48	0.0068	0.0012	0.0056
49	0.0068	0.0012	0.0057
50	0.0068	0.0012	0.0057
51	0.0069	0.0012	0.0057
52	0.0069	0.0012	0.0057
53	0.0070	0.0012	0.0058
54	0.0070	0.0012	0.0058
55	0.0070	0.0012	0.0058
56	0.0070	0.0012	0.0058
57	0.0071	0.0012	0.0059
58	0.0071	0.0012	0.0059
59	0.0071	0.0012	0.0059
60	0.0072	0.0012	0.0059
61	0.0072	0.0012	0.0060

62	0.0072	0.0012	0.0060
63	0.0073	0.0012	0.0060
64	0.0073	0.0012	0.0061
65	0.0074	0.0013	0.0061
66	0.0074	0.0013	0.0061
67	0.0074	0.0013	0.0062
68	0.0075	0.0013	0.0062
69	0.0075	0.0013	0.0062
70	0.0075	0.0013	0.0062
71	0.0076	0.0013	0.0063
72	0.0076	0.0013	0.0063
73	0.0077	0.0013	0.0064
74	0.0077	0.0013	0.0064
75	0.0078	0.0013	0.0064
76	0.0078	0.0013	0.0065
77	0.0078	0.0013	0.0065
78	0.0079	0.0013	0.0065
79	0.0079	0.0014	0.0066
80	0.0080	0.0014	0.0066
81	0.0080	0.0014	0.0066
82	0.0080	0.0014	0.0067
83	0.0081	0.0014	0.0067
84	0.0081	0.0014	0.0067
85	0.0082	0.0014	0.0068
86	0.0082	0.0014	0.0068
87	0.0083	0.0014	0.0069
88	0.0083	0.0014	0.0069
89	0.0084	0.0014	0.0070
90	0.0084	0.0014	0.0070
91	0.0085	0.0015	0.0071
92	0.0085	0.0015	0.0071
93	0.0086	0.0015	0.0071
94	0.0087	0.0015	0.0072
95	0.0087	0.0015	0.0072
96	0.0088	0.0015	0.0073
97	0.0088	0.0015	0.0073
98	0.0089	0.0015	0.0074
99	0.0090	0.0015	0.0074
100	0.0090	0.0015	0.0075
101	0.0091	0.0016	0.0075
102	0.0091	0.0016	0.0076
103	0.0092	0.0016	0.0076
104	0.0093	0.0016	0.0077
105	0.0093	0.0016	0.0078
106	0.0094	0.0016	0.0078
107	0.0095	0.0016	0.0079
108	0.0095	0.0016	0.0079
109	0.0096	0.0016	0.0080
110	0.0097	0.0017	0.0080
111	0.0098	0.0017	0.0081
112	0.0098	0.0017	0.0082
113	0.0099	0.0017	0.0082

114	0.0100	0.0017	0.0083
115	0.0101	0.0017	0.0084
116	0.0102	0.0017	0.0084
117	0.0103	0.0018	0.0085
118	0.0103	0.0018	0.0086
119	0.0104	0.0018	0.0087
120	0.0105	0.0018	0.0087
121	0.0106	0.0018	0.0088
122	0.0107	0.0018	0.0089
123	0.0108	0.0018	0.0090
124	0.0109	0.0019	0.0090
125	0.0110	0.0019	0.0091
126	0.0111	0.0019	0.0092
127	0.0112	0.0019	0.0093
128	0.0113	0.0019	0.0094
129	0.0115	0.0020	0.0095
130	0.0115	0.0020	0.0096
131	0.0117	0.0020	0.0097
132	0.0118	0.0020	0.0098
133	0.0119	0.0020	0.0099
134	0.0120	0.0021	0.0100
135	0.0122	0.0021	0.0101
136	0.0123	0.0021	0.0102
137	0.0125	0.0021	0.0103
138	0.0126	0.0021	0.0104
139	0.0128	0.0022	0.0106
140	0.0129	0.0022	0.0107
141	0.0131	0.0022	0.0108
142	0.0132	0.0023	0.0109
143	0.0134	0.0023	0.0111
144	0.0135	0.0023	0.0112
145	0.0182	0.0031	0.0151
146	0.0184	0.0031	0.0152
147	0.0186	0.0032	0.0154
148	0.0188	0.0032	0.0156
149	0.0191	0.0033	0.0158
150	0.0192	0.0033	0.0159
151	0.0195	0.0033	0.0162
152	0.0197	0.0034	0.0163
153	0.0200	0.0034	0.0166
154	0.0202	0.0035	0.0168
155	0.0206	0.0035	0.0171
156	0.0208	0.0035	0.0172
157	0.0212	0.0036	0.0176
158	0.0214	0.0037	0.0177
159	0.0218	0.0037	0.0181
160	0.0220	0.0038	0.0183
161	0.0225	0.0038	0.0187
162	0.0228	0.0039	0.0189
163	0.0233	0.0040	0.0193
164	0.0236	0.0040	0.0196
165	0.0241	0.0040	0.0201

166	0.0245	0.0040	0.0205
167	0.0251	0.0040	0.0211
168	0.0254	0.0040	0.0214
169	0.0258	0.0040	0.0218
170	0.0262	0.0040	0.0222
171	0.0271	0.0040	0.0231
172	0.0275	0.0040	0.0235
173	0.0285	0.0040	0.0245
174	0.0290	0.0040	0.0250
175	0.0301	0.0040	0.0261
176	0.0307	0.0040	0.0267
177	0.0321	0.0040	0.0281
178	0.0328	0.0040	0.0288
179	0.0345	0.0040	0.0305
180	0.0354	0.0040	0.0314
181	0.0374	0.0040	0.0334
182	0.0386	0.0040	0.0346
183	0.0413	0.0040	0.0373
184	0.0429	0.0040	0.0389
185	0.0396	0.0040	0.0356
186	0.0418	0.0040	0.0378
187	0.0474	0.0040	0.0434
188	0.0511	0.0040	0.0471
189	0.0661	0.0040	0.0621
190	0.0741	0.0040	0.0701
191	0.1038	0.0040	0.0998
192	0.1402	0.0040	0.1362
193	0.3999	0.0040	0.3959
194	0.0856	0.0040	0.0816
195	0.0557	0.0040	0.0517
196	0.0444	0.0040	0.0404
197	0.0447	0.0040	0.0407
198	0.0399	0.0040	0.0359
199	0.0364	0.0040	0.0324
200	0.0336	0.0040	0.0296
201	0.0314	0.0040	0.0274
202	0.0295	0.0040	0.0255
203	0.0280	0.0040	0.0240
204	0.0266	0.0040	0.0226
205	0.0258	0.0040	0.0218
206	0.0248	0.0040	0.0208
207	0.0238	0.0040	0.0198
208	0.0230	0.0039	0.0191
209	0.0223	0.0038	0.0185
210	0.0216	0.0037	0.0179
211	0.0210	0.0036	0.0174
212	0.0204	0.0035	0.0169
213	0.0199	0.0034	0.0165
214	0.0194	0.0033	0.0161
215	0.0189	0.0032	0.0157
216	0.0185	0.0032	0.0153
217	0.0136	0.0023	0.0113

218	0.0133	0.0023	0.0110
219	0.0130	0.0022	0.0108
220	0.0127	0.0022	0.0105
221	0.0124	0.0021	0.0103
222	0.0121	0.0021	0.0100
223	0.0119	0.0020	0.0098
224	0.0116	0.0020	0.0096
225	0.0114	0.0019	0.0094
226	0.0112	0.0019	0.0093
227	0.0110	0.0019	0.0091
228	0.0108	0.0018	0.0089
229	0.0106	0.0018	0.0088
230	0.0104	0.0018	0.0086
231	0.0102	0.0017	0.0085
232	0.0100	0.0017	0.0083
233	0.0099	0.0017	0.0082
234	0.0097	0.0017	0.0081
235	0.0096	0.0016	0.0079
236	0.0094	0.0016	0.0078
237	0.0093	0.0016	0.0077
238	0.0092	0.0016	0.0076
239	0.0090	0.0015	0.0075
240	0.0089	0.0015	0.0074
241	0.0088	0.0015	0.0073
242	0.0087	0.0015	0.0072
243	0.0086	0.0015	0.0071
244	0.0085	0.0014	0.0070
245	0.0084	0.0014	0.0069
246	0.0083	0.0014	0.0069
247	0.0082	0.0014	0.0068
248	0.0081	0.0014	0.0067
249	0.0080	0.0014	0.0066
250	0.0079	0.0013	0.0065
251	0.0078	0.0013	0.0065
252	0.0077	0.0013	0.0064
253	0.0076	0.0013	0.0063
254	0.0076	0.0013	0.0063
255	0.0075	0.0013	0.0062
256	0.0074	0.0013	0.0061
257	0.0073	0.0013	0.0061
258	0.0073	0.0012	0.0060
259	0.0072	0.0012	0.0060
260	0.0071	0.0012	0.0059
261	0.0071	0.0012	0.0059
262	0.0070	0.0012	0.0058
263	0.0069	0.0012	0.0057
264	0.0069	0.0012	0.0057
265	0.0068	0.0012	0.0056
266	0.0067	0.0012	0.0056
267	0.0067	0.0011	0.0055
268	0.0066	0.0011	0.0055
269	0.0066	0.0011	0.0055

```
     270              0.0065          0.0011              0.0054
     271              0.0065          0.0011              0.0054
     272              0.0064          0.0011              0.0053
     273              0.0064          0.0011              0.0053
     274              0.0063          0.0011              0.0052
     275              0.0063          0.0011              0.0052
     276              0.0062          0.0011              0.0052
     277              0.0062          0.0011              0.0051
     278              0.0061          0.0010              0.0051
     279              0.0061          0.0010              0.0050
     280              0.0060          0.0010              0.0050
     281              0.0060          0.0010              0.0050
     282              0.0060          0.0010              0.0049
     283              0.0059          0.0010              0.0049
     284              0.0059          0.0010              0.0049
     285              0.0058          0.0010              0.0048
     286              0.0058          0.0010              0.0048
     287              0.0057          0.0010              0.0048
     288              0.0057          0.0010              0.0047
     ------------------------------------------------------------
--------
     ------------------------------------------------------------
--------
     Total soil rain loss =      0.58(In)
     Total effective rainfall =      3.91(In)
     Peak flow rate in flood hydrograph =      8.62(CFS)
     ------------------------------------------------------------
---------
     ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++
                         24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
     ------------------------------------------------------------
--------
                   Hydrograph in   5   Minute intervals ((CFS))

     ------------------------------------------------------------
--------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0
7.5      10.0
  ------------------------------------------------------------
--------
    0+ 5       0.0001      0.02  Q         |         |         |
|
    0+10       0.0008      0.10  Q         |         |         |
|
    0+15       0.0018      0.14  Q         |         |         |
|
    0+20       0.0028      0.15  Q         |         |         |
|
    0+25       0.0039      0.16  Q         |         |         |
|
```

0+30	0.0050	0.16	Q	|	|	|
0+35	0.0061	0.16	Q	|	|	|
0+40	0.0071	0.16	Q	|	|	|
0+45	0.0082	0.16	Q	|	|	|
0+50	0.0093	0.16	Q	|	|	|
0+55	0.0104	0.16	Q	|	|	|
1+ 0	0.0115	0.16	Q	|	|	|
1+ 5	0.0126	0.16	Q	|	|	|
1+10	0.0137	0.16	Q	|	|	|
1+15	0.0148	0.16	Q	|	|	|
1+20	0.0159	0.16	Q	|	|	|
1+25	0.0170	0.16	Q	|	|	|
1+30	0.0182	0.16	Q	|	|	|
1+35	0.0193	0.16	Q	|	|	|
1+40	0.0204	0.16	Q	|	|	|
1+45	0.0215	0.16	Q	|	|	|
1+50	0.0227	0.16	QV	|	|	|
1+55	0.0238	0.17	QV	|	|	|
2+ 0	0.0250	0.17	QV	|	|	|
2+ 5	0.0261	0.17	QV	|	|	|
2+10	0.0273	0.17	QV	|	|	|
2+15	0.0284	0.17	QV	|	|	|
2+20	0.0296	0.17	QV	|	|	|
2+25	0.0307	0.17	QV	|	|	|
2+30	0.0319	0.17	QV	|	|	|
2+35	0.0331	0.17	QV	|	|	|

2+40	0.0343	0.17	QV			
2+45	0.0354	0.17	QV			
2+50	0.0366	0.17	QV			
2+55	0.0378	0.17	QV			
3+ 0	0.0390	0.17	QV			
3+ 5	0.0402	0.17	QV			
3+10	0.0414	0.18	QV			
3+15	0.0426	0.18	QV			
3+20	0.0439	0.18	QV			
3+25	0.0451	0.18	Q V			
3+30	0.0463	0.18	Q V			
3+35	0.0475	0.18	Q V			
3+40	0.0488	0.18	Q V			
3+45	0.0500	0.18	Q V			
3+50	0.0513	0.18	Q V			
3+55	0.0525	0.18	Q V			
4+ 0	0.0538	0.18	Q V			
4+ 5	0.0551	0.18	Q V			
4+10	0.0563	0.18	Q V			
4+15	0.0576	0.19	Q V			
4+20	0.0589	0.19	Q V			
4+25	0.0602	0.19	Q V			
4+30	0.0615	0.19	Q V			
4+35	0.0628	0.19	Q V			
4+40	0.0641	0.19	Q V			
4+45	0.0654	0.19	Q V			

4+50	0.0667	0.19	Q	V			
4+55	0.0680	0.19	Q	V			
5+ 0	0.0694	0.19	Q	V			
5+ 5	0.0707	0.19	Q	V			
5+10	0.0720	0.19	Q	V			
5+15	0.0734	0.20	Q	V			
5+20	0.0747	0.20	Q	V			
5+25	0.0761	0.20	Q	V			
5+30	0.0775	0.20	Q	V			
5+35	0.0788	0.20	Q	V			
5+40	0.0802	0.20	Q	V			
5+45	0.0816	0.20	Q	V			
5+50	0.0830	0.20	Q	V			
5+55	0.0844	0.20	Q	V			
6+ 0	0.0858	0.20	Q	V			
6+ 5	0.0872	0.21	Q	V			
6+10	0.0887	0.21	Q	V			
6+15	0.0901	0.21	Q	V			
6+20	0.0916	0.21	Q	V			
6+25	0.0930	0.21	Q	V			
6+30	0.0945	0.21	Q	V			
6+35	0.0959	0.21	Q	V			
6+40	0.0974	0.21	Q	V			
6+45	0.0989	0.22	Q	V			
6+50	0.1004	0.22	Q	V			
6+55	0.1019	0.22	Q	V			

```
    7+ 0       0.1034      0.22  Q   V     |          |          |
|
    7+ 5       0.1049      0.22  Q   V     |          |          |
|
    7+10       0.1064      0.22  Q   V     |          |          |
|
    7+15       0.1080      0.22  Q   V     |          |          |
|
    7+20       0.1095      0.22  Q   V     |          |          |
|
    7+25       0.1110      0.23  Q    V    |          |          |
|
    7+30       0.1126      0.23  Q    V    |          |          |
|
    7+35       0.1142      0.23  Q    V    |          |          |
|
    7+40       0.1158      0.23  Q    V    |          |          |
|
    7+45       0.1174      0.23  Q    V    |          |          |
|
    7+50       0.1190      0.23  Q    V    |          |          |
|
    7+55       0.1206      0.23  Q    V    |          |          |
|
    8+ 0       0.1222      0.24  Q    V    |          |          |
|
    8+ 5       0.1238      0.24  Q    V    |          |          |
|
    8+10       0.1255      0.24  Q    V    |          |          |
|
    8+15       0.1271      0.24  Q    V    |          |          |
|
    8+20       0.1288      0.24  Q    V    |          |          |
|
    8+25       0.1305      0.24  Q    V    |          |          |
|
    8+30       0.1322      0.25  Q     V   |          |          |
|
    8+35       0.1339      0.25  Q     V   |          |          |
|
    8+40       0.1356      0.25  Q     V   |          |          |
|
    8+45       0.1373      0.25  |Q    V   |          |          |
|
    8+50       0.1390      0.25  |Q    V   |          |          |
|
    8+55       0.1408      0.25  |Q    V   |          |          |
|
    9+ 0       0.1425      0.26  |Q    V   |          |          |
|
    9+ 5       0.1443      0.26  |Q    V   |          |          |
|
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9+10	0.1461	0.26	|Q V |	|	|
9+15	0.1479	0.26	|Q V |	|	|
9+20	0.1497	0.26	|Q V |	|	|
9+25	0.1516	0.27	|Q V |	|	|
9+30	0.1534	0.27	|Q V |	|	|
9+35	0.1553	0.27	|Q V |	|	|
9+40	0.1571	0.27	|Q V |	|	|
9+45	0.1590	0.27	|Q V |	|	|
9+50	0.1609	0.28	|Q V |	|	|
9+55	0.1629	0.28	|Q V |	|	|
10+ 0	0.1648	0.28	|Q V |	|	|
10+ 5	0.1668	0.28	|Q V |	|	|
10+10	0.1687	0.29	|Q V |	|	|
10+15	0.1707	0.29	|Q V |	|	|
10+20	0.1727	0.29	|Q V |	|	|
10+25	0.1748	0.29	|Q V |	|	|
10+30	0.1768	0.30	|Q V |	|	|
10+35	0.1789	0.30	|Q V |	|	|
10+40	0.1809	0.30	|Q V |	|	|
10+45	0.1831	0.31	|Q V |	|	|
10+50	0.1852	0.31	|Q V |	|	|
10+55	0.1873	0.31	|Q V |	|	|
11+ 0	0.1895	0.32	|Q V |	|	|
11+ 5	0.1917	0.32	|Q V |	|	|
11+10	0.1939	0.32	|Q V |	|	|
11+15	0.1961	0.32	|Q V |	|	|

11+20	0.1984	0.33	|Q V|			
11+25	0.2007	0.33	|Q V|			
11+30	0.2030	0.34	|Q V|			
11+35	0.2053	0.34	|Q V|			
11+40	0.2077	0.34	|Q V|			
11+45	0.2101	0.35	|Q V|			
11+50	0.2125	0.35	|Q V|			
11+55	0.2150	0.36	|Q V|			
12+ 0	0.2175	0.36	|Q V|			
12+ 5	0.2201	0.38	|Q V			
12+10	0.2232	0.45	|Q V			
12+15	0.2265	0.49	|Q V			
12+20	0.2300	0.50	| Q V			
12+25	0.2335	0.51	| Q V			
12+30	0.2370	0.51	| Q V			
12+35	0.2406	0.52	| Q V			
12+40	0.2442	0.53	| Q |V			
12+45	0.2479	0.53	| Q |V			
12+50	0.2516	0.54	| Q |V			
12+55	0.2554	0.55	| Q |V			
13+ 0	0.2592	0.55	| Q |V			
13+ 5	0.2630	0.56	| Q |V			
13+10	0.2670	0.57	| Q | V			
13+15	0.2709	0.58	| Q | V			
13+20	0.2750	0.59	| Q | V			
13+25	0.2791	0.60	| Q | V			

13+30	0.2832	0.61	Q	V		
13+35	0.2875	0.61	Q	V		
13+40	0.2918	0.63	Q	V		
13+45	0.2962	0.64	Q	V		
13+50	0.3007	0.65	Q	V		
13+55	0.3052	0.67	Q	V		
14+ 0	0.3099	0.68	Q	V		
14+ 5	0.3147	0.70	Q	V		
14+10	0.3196	0.71	Q	V		
14+15	0.3246	0.72	Q	V		
14+20	0.3297	0.74	Q	V		
14+25	0.3350	0.76	Q	V		
14+30	0.3404	0.79	Q	V		
14+35	0.3460	0.81	Q	V		
14+40	0.3518	0.84	Q	V		
14+45	0.3578	0.87	Q	V		
14+50	0.3640	0.90	Q	V		
14+55	0.3704	0.94	Q	V		
15+ 0	0.3772	0.98	Q	V		
15+ 5	0.3842	1.02	Q	V		
15+10	0.3915	1.07	Q	V		
15+15	0.3993	1.12	Q	V		
15+20	0.4075	1.19	Q	V		
15+25	0.4160	1.23	Q	V		
15+30	0.4243	1.20	Q	V		
15+35	0.4328	1.23	Q	V		

```
   15+40       0.4421      1.36  |    Q    |         V         |
|
   15+45       0.4527      1.54  |     Q   |         V         |
|
   15+50       0.4656      1.87  |      Q  |         |V        |
|
   15+55       0.4813      2.28  |        Q|         |V        |
|
   16+ 0       0.5021      3.02  |         | Q       | V       |
|
   16+ 5       0.5360      4.92  |         |        Q|   V     |
|
   16+10       0.5954      8.62  |         |         |      V  |
Q     |
   16+15       0.6349      5.74  |         |         | Q     V |
|
   16+20       0.6522      2.52  |         Q         |        V|
|
   16+25       0.6634      1.63  |     Q   |         |         V
|
   16+30       0.6727      1.34  |    Q    |         |         V
|
   16+35       0.6811      1.22  |   Q     |         |         V
|
   16+40       0.6886      1.10  |   Q     |         |         |V
|
   16+45       0.6955      1.00  |  Q      |         |         |V
|
   16+50       0.7018      0.92  |  Q      |         |         |V
|
   16+55       0.7077      0.86  |  Q      |         |         |
V       |
   17+ 0       0.7133      0.80  |  Q      |         |         |
V       |
   17+ 5       0.7185      0.76  |  Q      |         |         |
V       |
   17+10       0.7234      0.72  | Q       |         |         |
V       |
   17+15       0.7282      0.69  | Q       |         |         |
V      |
   17+20       0.7327      0.66  | Q       |         |         |
V      |
   17+25       0.7371      0.63  | Q       |         |         |
V      |
   17+30       0.7413      0.61  | Q       |         |         |
V      |
   17+35       0.7453      0.59  | Q       |         |         |
V      |
   17+40       0.7493      0.57  | Q       |         |         |
V     |
   17+45       0.7531      0.56  | Q       |         |         |
V     |
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```
   17+50       0.7569      0.54  | Q       |         |         |
V     |
   17+55       0.7605      0.53  | Q       |         |         |
V     |
   18+ 0       0.7641      0.52  | Q       |         |         |
V     |
   18+ 5       0.7674      0.49  |Q        |         |         |
V     |
   18+10       0.7703      0.42  |Q        |         |         |
V    |
   18+15       0.7729      0.37  |Q        |         |         |
V    |
   18+20       0.7753      0.36  |Q        |         |         |
V    |
   18+25       0.7777      0.35  |Q        |         |         |
V    |
   18+30       0.7800      0.34  |Q        |         |         |
V    |
   18+35       0.7823      0.33  |Q        |         |         |
V    |
   18+40       0.7845      0.32  |Q        |         |         |
V    |
   18+45       0.7867      0.32  |Q        |         |         |
V    |
   18+50       0.7888      0.31  |Q        |         |         |
V    |
   18+55       0.7909      0.30  |Q        |         |         |
V    |
   19+ 0       0.7930      0.30  |Q        |         |         |
V   |
   19+ 5       0.7950      0.29  |Q        |         |         |
V   |
   19+10       0.7970      0.29  |Q        |         |         |
V   |
   19+15       0.7989      0.28  |Q        |         |         |
V   |
   19+20       0.8008      0.28  |Q        |         |         |
V   |
   19+25       0.8027      0.27  |Q        |         |         |
V   |
   19+30       0.8046      0.27  |Q        |         |         |
V   |
   19+35       0.8064      0.26  |Q        |         |         |
V   |
   19+40       0.8082      0.26  |Q        |         |         |
V   |
   19+45       0.8100      0.26  |Q        |         |         |
V   |
   19+50       0.8117      0.25  |Q        |         |         |
V   |
   19+55       0.8134      0.25  Q        |         |         |
V   |
```

```
   20+ 0       0.8151      0.25  Q         |         |         |
V  |
   20+ 5       0.8168      0.24  Q         |         |         |
V  |
   20+10       0.8184      0.24  Q         |         |         |
V  |
   20+15       0.8201      0.24  Q         |         |         |
V  |
   20+20       0.8217      0.23  Q         |         |         |
V  |
   20+25       0.8233      0.23  Q         |         |         |
V  |
   20+30       0.8248      0.23  Q         |         |         |
V  |
   20+35       0.8264      0.22  Q         |         |         |
V  |
   20+40       0.8279      0.22  Q         |         |         |
V  |
   20+45       0.8294      0.22  Q         |         |         |
V  |
   20+50       0.8309      0.22  Q         |         |         |
V  |
   20+55       0.8324      0.21  Q         |         |         |
V  |
   21+ 0       0.8338      0.21  Q         |         |         |
V  |
   21+ 5       0.8353      0.21  Q         |         |         |
V  |
   21+10       0.8367      0.21  Q         |         |         |
V |
   21+15       0.8381      0.21  Q         |         |         |
V |
   21+20       0.8395      0.20  Q         |         |         |
V |
   21+25       0.8409      0.20  Q         |         |         |
V |
   21+30       0.8423      0.20  Q         |         |         |
V |
   21+35       0.8437      0.20  Q         |         |         |
V |
   21+40       0.8450      0.20  Q         |         |         |
V |
   21+45       0.8463      0.19  Q         |         |         |
V |
   21+50       0.8477      0.19  Q         |         |         |
V |
   21+55       0.8490      0.19  Q         |         |         |
V |
   22+ 0       0.8503      0.19  Q         |         |         |
V |
   22+ 5       0.8515      0.19  Q         |         |         |
V |
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   22+10       0.8528      0.18  Q         |         |         |
V |
   22+15       0.8541      0.18  Q         |         |         |
V |
   22+20       0.8553      0.18  Q         |         |         |
V |
   22+25       0.8566      0.18  Q         |         |         |
V |
   22+30       0.8578      0.18  Q         |         |         |
V|
   22+35       0.8590      0.18  Q         |         |         |
V|
   22+40       0.8602      0.18  Q         |         |         |
V|
   22+45       0.8614      0.17  Q         |         |         |
V|
   22+50       0.8626      0.17  Q         |         |         |
V|
   22+55       0.8638      0.17  Q         |         |         |
V|
   23+ 0       0.8650      0.17  Q         |         |         |
V|
   23+ 5       0.8661      0.17  Q         |         |         |
V|
   23+10       0.8673      0.17  Q         |         |         |
V|
   23+15       0.8684      0.17  Q         |         |         |
V|
   23+20       0.8696      0.17  Q         |         |         |
V|
   23+25       0.8707      0.16  Q         |         |         |
V|
   23+30       0.8718      0.16  Q         |         |         |
V|
   23+35       0.8729      0.16  Q         |         |         |
V|
   23+40       0.8740      0.16  Q         |         |         |
V|
   23+45       0.8751      0.16  Q         |         |         |
V|
   23+50       0.8762      0.16  Q         |         |         |
V|
   23+55       0.8773      0.16  Q         |         |         |
V|
   24+ 0       0.8784      0.16  Q         |         |         |
V|
   24+ 5       0.8793      0.14  Q         |         |         |
V|
   24+10       0.8797      0.06  Q         |         |         |
V|
   24+15       0.8798      0.01  Q         |         |         |
V|
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   24+20       0.8798      0.00  Q         |         |         |
V|
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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 08/19/24

117-010 Proposed Hydromodification and Peak Flow Detention Basin
95 Argonaut
25-year, 24-hour storm
2024-08-19 RRR

Program License Serial Number 6440

********** HYDROGRAPH INFORMATION **********

From study/file name: 117010ArgonautUH.rte
**********HYDROGRAPH DATA**********
Number of intervals = 292
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.621 (CFS)
Total volume = 0.880 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 101.000 to Point/Station 108.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 292
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.023	0.109	0.023	0.023
1.850	0.042	0.152	0.041	0.043
2.500	0.058	1.584	0.053	0.063
3.000	0.069	6.417	0.047	0.091
4.000	0.091	10.290	0.056	0.126

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.2 4.31 6.47 8.62	Depth (Ft.)
0.083	0.02	0.00	0.000	O | | | |	0.00
0.167	0.10	0.00	0.000	O | | | |	0.02
0.250	0.14	0.01	0.001	O | | | |	0.05
0.333	0.15	0.01	0.002	O | | | |	0.10
0.417	0.16	0.02	0.003	O | | | |	0.14
0.500	0.16	0.02	0.004	O | | | |	0.18
0.583	0.16	0.02	0.005	O | | | |	0.22
0.667	0.16	0.03	0.006	O | | | |	0.26
0.750	0.16	0.03	0.007	O | | | |	0.30
0.833	0.16	0.04	0.008	O | | | |	0.33
0.917	0.16	0.04	0.009	O | | | |	0.37
1.000	0.16	0.04	0.009	O | | | |	0.41
1.083	0.16	0.05	0.010	O | | | |	0.44
1.167	0.16	0.05	0.011	O | | | |	0.47
1.250	0.16	0.05	0.012	O | | | |	0.50
1.333	0.16	0.06	0.012	O | | | |	0.54
1.417	0.16	0.06	0.013	O | | | |	0.57
1.500	0.16	0.06	0.014	O | | | |	0.60
1.583	0.16	0.07	0.014	O | | | |	0.62
1.667	0.16	0.07	0.015	O | | | |	0.65
1.750	0.16	0.07	0.016	O | | | |	0.68
1.833	0.16	0.08	0.016	O | | | |	0.71
1.917	0.17	0.08	0.017	O | | | |	0.73
2.000	0.17	0.08	0.017	O | | | |	0.76
2.083	0.17	0.09	0.018	O | | | |	0.78
2.167	0.17	0.09	0.019	O | | | |	0.81
2.250	0.17	0.09	0.019	O | | | |	0.83
2.333	0.17	0.09	0.020	O | | | |	0.85
2.417	0.17	0.10	0.020	O | | | |	0.88
2.500	0.17	0.10	0.021	O | | | |	0.90

2.583	0.17	0.10	0.021	O	|	|	|	0.92
2.667	0.17	0.10	0.022	O	|	|	|	0.94
2.750	0.17	0.10	0.022	O	|	|	|	0.96
2.833	0.17	0.11	0.023	O	|	|	|	0.98
2.917	0.17	0.11	0.023	O	|	|	|	1.00
3.000	0.17	0.11	0.023	O	|	|	|	1.02
3.083	0.17	0.11	0.024	O	|	|	|	1.04
3.167	0.18	0.11	0.024	O	|	|	|	1.06
3.250	0.18	0.11	0.025	O	|	|	|	1.08
3.333	0.18	0.11	0.025	O	|	|	|	1.10
3.417	0.18	0.11	0.026	O	|	|	|	1.12
3.500	0.18	0.12	0.026	O	|	|	|	1.14
3.583	0.18	0.12	0.026	O	|	|	|	1.15
3.667	0.18	0.12	0.027	O	|	|	|	1.17
3.750	0.18	0.12	0.027	O	|	|	|	1.19
3.833	0.18	0.12	0.028	O	|	|	|	1.21
3.917	0.18	0.12	0.028	O	|	|	|	1.23
4.000	0.18	0.12	0.029	O	|	|	|	1.25
4.083	0.18	0.12	0.029	O	|	|	|	1.27
4.167	0.18	0.12	0.029	O	|	|	|	1.29
4.250	0.19	0.12	0.030	O	|	|	|	1.31
4.333	0.19	0.13	0.030	O	|	|	|	1.32
4.417	0.19	0.13	0.031	O	|	|	|	1.34
4.500	0.19	0.13	0.031	O	|	|	|	1.36
4.583	0.19	0.13	0.032	O	|	|	|	1.38
4.667	0.19	0.13	0.032	O	|	|	|	1.40
4.750	0.19	0.13	0.032	O	|	|	|	1.42
4.833	0.19	0.13	0.033	O	|	|	|	1.44
4.917	0.19	0.13	0.033	O	|	|	|	1.46
5.000	0.19	0.13	0.034	O	|	|	|	1.47
5.083	0.19	0.13	0.034	O	|	|	|	1.49
5.167	0.19	0.13	0.034	O	|	|	|	1.51
5.250	0.20	0.14	0.035	O	|	|	|	1.53
5.333	0.20	0.14	0.035	O	|	|	|	1.55
5.417	0.20	0.14	0.036	O	|	|	|	1.57
5.500	0.20	0.14	0.036	O	|	|	|	1.58
5.583	0.20	0.14	0.036	O	|	|	|	1.60
5.667	0.20	0.14	0.037	O	|	|	|	1.62
5.750	0.20	0.14	0.037	O	|	|	|	1.64
5.833	0.20	0.14	0.038	O	|	|	|	1.66
5.917	0.20	0.14	0.038	O	|	|	|	1.68
6.000	0.20	0.14	0.039	O	|	|	|	1.70
6.083	0.21	0.15	0.039	O	|	|	|	1.72
6.167	0.21	0.15	0.039	O	|	|	|	1.73
6.250	0.21	0.15	0.040	O	|	|	|	1.75
6.333	0.21	0.15	0.040	O	|	|	|	1.77
6.417	0.21	0.15	0.041	O	|	|	|	1.79
6.500	0.21	0.15	0.041	O	|	|	|	1.81
6.583	0.21	0.15	0.042	O	|	|	|	1.83
6.667	0.21	0.15	0.042	O	|	|	|	1.85

6.750	0.22	0.18	0.042	O				1.86
6.833	0.22	0.20	0.042	O				1.87
6.917	0.22	0.21	0.043	O				1.87
7.000	0.22	0.21	0.043	O				1.88
7.083	0.22	0.22	0.043	O				1.88
7.167	0.22	0.22	0.043	O				1.88
7.250	0.22	0.22	0.043	O				1.88
7.333	0.22	0.22	0.043	O				1.88
7.417	0.23	0.22	0.043	O				1.88
7.500	0.23	0.22	0.043	O				1.88
7.583	0.23	0.23	0.043	O				1.88
7.667	0.23	0.23	0.043	O				1.88
7.750	0.23	0.23	0.043	O				1.88
7.833	0.23	0.23	0.043	O				1.89
7.917	0.23	0.23	0.043	O				1.89
8.000	0.24	0.23	0.043	O				1.89
8.083	0.24	0.23	0.043	O				1.89
8.167	0.24	0.24	0.043	O				1.89
8.250	0.24	0.24	0.043	O				1.89
8.333	0.24	0.24	0.043	O				1.89
8.417	0.24	0.24	0.043	O				1.89
8.500	0.25	0.24	0.043	O				1.89
8.583	0.25	0.24	0.043	O				1.89
8.667	0.25	0.25	0.043	O				1.89
8.750	0.25	0.25	0.043	O				1.89
8.833	0.25	0.25	0.043	O				1.89
8.917	0.25	0.25	0.043	O				1.89
9.000	0.26	0.25	0.043	O				1.90
9.083	0.26	0.25	0.043	O				1.90
9.167	0.26	0.26	0.043	O				1.90
9.250	0.26	0.26	0.043	O				1.90
9.333	0.26	0.26	0.043	O				1.90
9.417	0.27	0.26	0.043	O				1.90
9.500	0.27	0.26	0.043	O				1.90
9.583	0.27	0.27	0.043	OI				1.90
9.667	0.27	0.27	0.043	OI				1.90
9.750	0.27	0.27	0.043	|O				1.90
9.833	0.28	0.27	0.043	|O				1.91
9.917	0.28	0.28	0.043	|O				1.91
10.000	0.28	0.28	0.043	|O				1.91
10.083	0.28	0.28	0.043	|O				1.91
10.167	0.29	0.28	0.043	|O				1.91
10.250	0.29	0.28	0.043	|O				1.91
10.333	0.29	0.29	0.044	|O				1.91
10.417	0.29	0.29	0.044	|O				1.91
10.500	0.30	0.29	0.044	|O				1.91
10.583	0.30	0.30	0.044	|O				1.92
10.667	0.30	0.30	0.044	|O				1.92
10.750	0.31	0.30	0.044	|O				1.92
10.833	0.31	0.30	0.044	|O				1.92

10.917	0.31	0.31	0.044	O				1.92
11.000	0.32	0.31	0.044	O				1.92
11.083	0.32	0.31	0.044	O				1.92
11.167	0.32	0.32	0.044	O				1.92
11.250	0.32	0.32	0.044	O				1.93
11.333	0.33	0.32	0.044	O				1.93
11.417	0.33	0.33	0.044	O				1.93
11.500	0.34	0.33	0.044	O				1.93
11.583	0.34	0.33	0.044	O				1.93
11.667	0.34	0.34	0.044	O				1.93
11.750	0.35	0.34	0.044	O				1.94
11.833	0.35	0.35	0.044	O				1.94
11.917	0.36	0.35	0.044	O				1.94
12.000	0.36	0.35	0.044	O				1.94
12.083	0.38	0.36	0.044	O				1.95
12.167	0.45	0.39	0.045	O				1.96
12.250	0.49	0.42	0.045	O				1.97
12.333	0.50	0.46	0.045	O				1.99
12.417	0.51	0.48	0.046	O				2.00
12.500	0.51	0.49	0.046	O				2.01
12.583	0.52	0.50	0.046	O				2.01
12.667	0.53	0.51	0.046	O				2.01
12.750	0.53	0.52	0.046	O				2.02
12.833	0.54	0.53	0.046	OI				2.02
12.917	0.55	0.53	0.046	OI				2.02
13.000	0.55	0.54	0.046	O				2.03
13.083	0.56	0.55	0.046	O				2.03
13.167	0.57	0.56	0.047	O				2.03
13.250	0.58	0.56	0.047	O				2.04
13.333	0.59	0.57	0.047	O				2.04
13.417	0.60	0.58	0.047	O				2.04
13.500	0.61	0.59	0.047	O				2.05
13.583	0.61	0.60	0.047	O				2.05
13.667	0.63	0.61	0.047	O				2.06
13.750	0.64	0.62	0.047	O				2.06
13.833	0.65	0.63	0.047	O				2.07
13.917	0.67	0.64	0.047	O				2.07
14.000	0.68	0.66	0.048	O				2.08
14.083	0.70	0.67	0.048	O				2.09
14.167	0.71	0.69	0.048	O				2.09
14.250	0.72	0.70	0.048	O				2.10
14.333	0.74	0.72	0.048	O				2.11
14.417	0.76	0.73	0.049	O				2.11
14.500	0.79	0.75	0.049	O				2.12
14.583	0.81	0.78	0.049	OI				2.13
14.667	0.84	0.80	0.049	OI				2.14
14.750	0.87	0.83	0.050	O				2.16
14.833	0.90	0.85	0.050	O				2.17
14.917	0.94	0.88	0.050	O				2.18
15.000	0.98	0.92	0.051	O				2.20

15.083	1.02	0.96	0.051	O					2.21
15.167	1.07	1.00	0.051	O					2.23
15.250	1.12	1.04	0.052	OI					2.25
15.333	1.19	1.10	0.053	O					2.28
15.417	1.23	1.15	0.053	O					2.30
15.500	1.20	1.18	0.054	O					2.32
15.583	1.23	1.20	0.054	O					2.33
15.667	1.36	1.25	0.054	OI					2.35
15.750	1.54	1.34	0.055	OI					2.39
15.833	1.87	1.51	0.057	OI					2.47
15.917	2.28	2.08	0.059	OI					2.55
16.000	3.02	2.77	0.061	OI					2.62
16.083	4.92	4.22	0.064	O	I				2.77
16.167	8.62	6.97	0.072				O	I	3.14
16.250	5.74	7.13	0.073		I	O			3.18
16.333	2.52	3.94	0.063	I	O				2.74
16.417	1.63	1.69	0.058	O					2.51
16.500	1.34	1.53	0.057	IO					2.47
16.583	1.22	1.41	0.056	IO					2.42
16.667	1.10	1.29	0.055	O					2.37
16.750	1.00	1.18	0.053	IO					2.32
16.833	0.92	1.08	0.052	O					2.27
16.917	0.86	0.99	0.051	O					2.23
17.000	0.80	0.91	0.050	IO					2.20
17.083	0.76	0.85	0.050	IO					2.17
17.167	0.72	0.80	0.049	O					2.14
17.250	0.69	0.75	0.049	O					2.12
17.333	0.66	0.72	0.048	O					2.11
17.417	0.63	0.68	0.048	O					2.09
17.500	0.61	0.65	0.048	O					2.08
17.583	0.59	0.63	0.047	O					2.07
17.667	0.57	0.61	0.047	O					2.06
17.750	0.56	0.59	0.047	O					2.05
17.833	0.54	0.57	0.047	O					2.04
17.917	0.53	0.55	0.046	IO					2.03
18.000	0.52	0.54	0.046	IO					2.03
18.083	0.49	0.52	0.046	O					2.02
18.167	0.42	0.49	0.046	O					2.00
18.250	0.37	0.44	0.045	O					1.98
18.333	0.36	0.41	0.045	O					1.97
18.417	0.35	0.38	0.045	O					1.95
18.500	0.34	0.36	0.044	O					1.95
18.583	0.33	0.35	0.044	O					1.94
18.667	0.32	0.34	0.044	O					1.93
18.750	0.32	0.33	0.044	O					1.93
18.833	0.31	0.32	0.044	O					1.93
18.917	0.30	0.32	0.044	O					1.92
19.000	0.30	0.31	0.044	O					1.92
19.083	0.29	0.30	0.044	O					1.92
19.167	0.29	0.30	0.044	O					1.92

19.250	0.28	0.29	0.044	|O	|	|	|	1.91
19.333	0.28	0.29	0.043	|O	|	|	|	1.91
19.417	0.27	0.28	0.043	|O	|	|	|	1.91
19.500	0.27	0.28	0.043	IO	|	|	|	1.91
19.583	0.26	0.27	0.043	IO	|	|	|	1.90
19.667	0.26	0.27	0.043	O	|	|	|	1.90
19.750	0.26	0.26	0.043	O	|	|	|	1.90
19.833	0.25	0.26	0.043	O	|	|	|	1.90
19.917	0.25	0.26	0.043	O	|	|	|	1.90
20.000	0.25	0.25	0.043	O	|	|	|	1.90
20.083	0.24	0.25	0.043	O	|	|	|	1.89
20.167	0.24	0.24	0.043	O	|	|	|	1.89
20.250	0.24	0.24	0.043	O	|	|	|	1.89
20.333	0.23	0.24	0.043	O	|	|	|	1.89
20.417	0.23	0.24	0.043	O	|	|	|	1.89
20.500	0.23	0.23	0.043	O	|	|	|	1.89
20.583	0.22	0.23	0.043	O	|	|	|	1.89
20.667	0.22	0.23	0.043	O	|	|	|	1.88
20.750	0.22	0.22	0.043	O	|	|	|	1.88
20.833	0.22	0.22	0.043	O	|	|	|	1.88
20.917	0.21	0.22	0.043	O	|	|	|	1.88
21.000	0.21	0.22	0.043	O	|	|	|	1.88
21.083	0.21	0.21	0.043	O	|	|	|	1.88
21.167	0.21	0.21	0.043	O	|	|	|	1.88
21.250	0.21	0.21	0.043	O	|	|	|	1.88
21.333	0.20	0.21	0.043	O	|	|	|	1.87
21.417	0.20	0.20	0.043	O	|	|	|	1.87
21.500	0.20	0.20	0.043	O	|	|	|	1.87
21.583	0.20	0.20	0.043	O	|	|	|	1.87
21.667	0.20	0.20	0.043	O	|	|	|	1.87
21.750	0.19	0.20	0.042	O	|	|	|	1.87
21.833	0.19	0.19	0.042	O	|	|	|	1.87
21.917	0.19	0.19	0.042	O	|	|	|	1.87
22.000	0.19	0.19	0.042	O	|	|	|	1.87
22.083	0.19	0.19	0.042	O	|	|	|	1.87
22.167	0.18	0.19	0.042	O	|	|	|	1.87
22.250	0.18	0.19	0.042	O	|	|	|	1.87
22.333	0.18	0.18	0.042	O	|	|	|	1.86
22.417	0.18	0.18	0.042	O	|	|	|	1.86
22.500	0.18	0.18	0.042	O	|	|	|	1.86
22.583	0.18	0.18	0.042	O	|	|	|	1.86
22.667	0.18	0.18	0.042	O	|	|	|	1.86
22.750	0.17	0.18	0.042	O	|	|	|	1.86
22.833	0.17	0.18	0.042	O	|	|	|	1.86
22.917	0.17	0.17	0.042	O	|	|	|	1.86
23.000	0.17	0.17	0.042	O	|	|	|	1.86
23.083	0.17	0.17	0.042	O	|	|	|	1.86
23.167	0.17	0.17	0.042	O	|	|	|	1.86
23.250	0.17	0.17	0.042	O	|	|	|	1.86
23.333	0.17	0.17	0.042	O	|	|	|	1.86

23.417	0.16	0.17	0.042	O				1.86
23.500	0.16	0.16	0.042	O				1.86
23.583	0.16	0.16	0.042	O				1.86
23.667	0.16	0.16	0.042	O				1.85
23.750	0.16	0.16	0.042	O				1.85
23.833	0.16	0.16	0.042	O				1.85
23.917	0.16	0.16	0.042	O				1.85
24.000	0.16	0.16	0.042	O				1.85
24.083	0.14	0.15	0.042	O				1.85
24.167	0.06	0.15	0.042	O				1.83
24.250	0.01	0.15	0.041	O				1.80
24.333	0.00	0.15	0.040	O				1.75
24.417	0.00	0.14	0.039	O				1.71
24.500	0.00	0.14	0.038	O				1.66
24.583	0.00	0.14	0.037	O				1.62
24.667	0.00	0.14	0.036	O				1.58
24.750	0.00	0.14	0.035	O				1.54
24.833	0.00	0.13	0.034	O				1.49
24.917	0.00	0.13	0.033	O				1.45
25.000	0.00	0.13	0.032	O				1.41
25.083	0.00	0.13	0.031	O				1.37
25.167	0.00	0.13	0.030	O				1.33
25.250	0.00	0.12	0.030	O				1.30
25.333	0.00	0.12	0.029	O				1.26
25.417	0.00	0.12	0.028	O				1.22
25.500	0.00	0.12	0.027	O				1.18
25.583	0.00	0.12	0.026	O				1.15
25.667	0.00	0.11	0.025	O				1.11
25.750	0.00	0.11	0.025	O				1.08
25.833	0.00	0.11	0.024	O				1.04
25.917	0.00	0.11	0.023	O				1.01
26.000	0.00	0.11	0.022	O				0.98
26.083	0.00	0.10	0.022	O				0.94
26.167	0.00	0.10	0.021	O				0.91
26.250	0.00	0.10	0.020	O				0.88
26.333	0.00	0.09	0.020	O				0.86
26.417	0.00	0.09	0.019	O				0.83
26.500	0.00	0.09	0.018	O				0.80
26.583	0.00	0.08	0.018	O				0.78
26.667	0.00	0.08	0.017	O				0.75
26.750	0.00	0.08	0.017	O				0.73
26.833	0.00	0.08	0.016	O				0.70
26.917	0.00	0.07	0.016	O				0.68
27.000	0.00	0.07	0.015	O				0.66
27.083	0.00	0.07	0.015	O				0.64
27.167	0.00	0.07	0.014	O				0.62
27.250	0.00	0.07	0.014	O				0.60
27.333	0.00	0.06	0.013	O				0.58
27.417	0.00	0.06	0.013	O				0.56
27.500	0.00	0.06	0.012	O				0.54

27.583	0.00	0.06	0.012	O	|	|	|	0.52
27.667	0.00	0.06	0.012	O	|	|	|	0.51
27.750	0.00	0.05	0.011	O	|	|	|	0.49
27.833	0.00	0.05	0.011	O	|	|	|	0.48
27.917	0.00	0.05	0.011	O	|	|	|	0.46
28.000	0.00	0.05	0.010	O	|	|	|	0.45
28.083	0.00	0.05	0.010	O	|	|	|	0.43
28.167	0.00	0.05	0.010	O	|	|	|	0.42
28.250	0.00	0.04	0.009	O	|	|	|	0.40
28.333	0.00	0.04	0.009	O	|	|	|	0.39
28.417	0.00	0.04	0.009	O	|	|	|	0.38
28.500	0.00	0.04	0.008	O	|	|	|	0.37
28.583	0.00	0.04	0.008	O	|	|	|	0.35
28.667	0.00	0.04	0.008	O	|	|	|	0.34
28.750	0.00	0.04	0.008	O	|	|	|	0.33
28.833	0.00	0.04	0.007	O	|	|	|	0.32
28.917	0.00	0.03	0.007	O	|	|	|	0.31
29.000	0.00	0.03	0.007	O	|	|	|	0.30
29.083	0.00	0.03	0.007	O	|	|	|	0.29
29.167	0.00	0.03	0.006	O	|	|	|	0.28
29.250	0.00	0.03	0.006	O	|	|	|	0.27
29.333	0.00	0.03	0.006	O	|	|	|	0.26
29.417	0.00	0.03	0.006	O	|	|	|	0.26
29.500	0.00	0.03	0.006	O	|	|	|	0.25
29.583	0.00	0.03	0.006	O	|	|	|	0.24
29.667	0.00	0.03	0.005	O	|	|	|	0.23
29.750	0.00	0.02	0.005	O	|	|	|	0.22
29.833	0.00	0.02	0.005	O	|	|	|	0.22
29.917	0.00	0.02	0.005	O	|	|	|	0.21
30.000	0.00	0.02	0.005	O	|	|	|	0.20
30.083	0.00	0.02	0.005	O	|	|	|	0.20
30.167	0.00	0.02	0.004	O	|	|	|	0.19
30.250	0.00	0.02	0.004	O	|	|	|	0.18
30.333	0.00	0.02	0.004	O	|	|	|	0.18
30.417	0.00	0.02	0.004	O	|	|	|	0.17
30.500	0.00	0.02	0.004	O	|	|	|	0.17
30.583	0.00	0.02	0.004	O	|	|	|	0.16
30.667	0.00	0.02	0.004	O	|	|	|	0.16
30.750	0.00	0.02	0.003	O	|	|	|	0.15
30.833	0.00	0.02	0.003	O	|	|	|	0.15
30.917	0.00	0.02	0.003	O	|	|	|	0.14
31.000	0.00	0.01	0.003	O	|	|	|	0.14
31.083	0.00	0.01	0.003	O	|	|	|	0.13
31.167	0.00	0.01	0.003	O	|	|	|	0.13
31.250	0.00	0.01	0.003	O	|	|	|	0.12
31.333	0.00	0.01	0.003	O	|	|	|	0.12
31.417	0.00	0.01	0.003	O	|	|	|	0.12
31.500	0.00	0.01	0.003	O	|	|	|	0.11
31.583	0.00	0.01	0.003	O	|	|	|	0.11
31.667	0.00	0.01	0.002	O	|	|	|	0.11

31.750	0.00	0.01	0.002	O	|	|	|	0.10
31.833	0.00	0.01	0.002	O	|	|	|	0.10
31.917	0.00	0.01	0.002	O	|	|	|	0.10
32.000	0.00	0.01	0.002	O	|	|	|	0.09
32.083	0.00	0.01	0.002	O	|	|	|	0.09
32.167	0.00	0.01	0.002	O	|	|	|	0.09
32.250	0.00	0.01	0.002	O	|	|	|	0.08
32.333	0.00	0.01	0.002	O	|	|	|	0.08
32.417	0.00	0.01	0.002	O	|	|	|	0.08
32.500	0.00	0.01	0.002	O	|	|	|	0.08
32.583	0.00	0.01	0.002	O	|	|	|	0.07
32.667	0.00	0.01	0.002	O	|	|	|	0.07
32.750	0.00	0.01	0.002	O	|	|	|	0.07
32.833	0.00	0.01	0.002	O	|	|	|	0.07
32.917	0.00	0.01	0.001	O	|	|	|	0.06
33.000	0.00	0.01	0.001	O	|	|	|	0.06
33.083	0.00	0.01	0.001	O	|	|	|	0.06
33.167	0.00	0.01	0.001	O	|	|	|	0.06
33.250	0.00	0.01	0.001	O	|	|	|	0.06
33.333	0.00	0.01	0.001	O	|	|	|	0.06
33.417	0.00	0.01	0.001	O	|	|	|	0.05
33.500	0.00	0.01	0.001	O	|	|	|	0.05
33.583	0.00	0.01	0.001	O	|	|	|	0.05
33.667	0.00	0.01	0.001	O	|	|	|	0.05
33.750	0.00	0.01	0.001	O	|	|	|	0.05
33.833	0.00	0.00	0.001	O	|	|	|	0.05
33.917	0.00	0.00	0.001	O	|	|	|	0.04
34.000	0.00	0.00	0.001	O	|	|	|	0.04
34.083	0.00	0.00	0.001	O	|	|	|	0.04
34.167	0.00	0.00	0.001	O	|	|	|	0.04
34.250	0.00	0.00	0.001	O	|	|	|	0.04
34.333	0.00	0.00	0.001	O	|	|	|	0.04
34.417	0.00	0.00	0.001	O	|	|	|	0.04
34.500	0.00	0.00	0.001	O	|	|	|	0.03
34.583	0.00	0.00	0.001	O	|	|	|	0.03
34.667	0.00	0.00	0.001	O	|	|	|	0.03
34.750	0.00	0.00	0.001	O	|	|	|	0.03
34.833	0.00	0.00	0.001	O	|	|	|	0.03
34.917	0.00	0.00	0.001	O	|	|	|	0.03
35.000	0.00	0.00	0.001	O	|	|	|	0.03
35.083	0.00	0.00	0.001	O	|	|	|	0.03
35.167	0.00	0.00	0.001	O	|	|	|	0.03
35.250	0.00	0.00	0.001	O	|	|	|	0.03
35.333	0.00	0.00	0.001	O	|	|	|	0.03
35.417	0.00	0.00	0.001	O	|	|	|	0.02
35.500	0.00	0.00	0.001	O	|	|	|	0.02
35.583	0.00	0.00	0.001	O	|	|	|	0.02
35.667	0.00	0.00	0.001	O	|	|	|	0.02
35.750	0.00	0.00	0.000	O	|	|	|	0.02
35.833	0.00	0.00	0.000	O	|	|	|	0.02

35.917	0.00	0.00	0.000	O	|	|	|	|	0.02
36.000	0.00	0.00	0.000	O	|	|	|	|	0.02
36.083	0.00	0.00	0.000	O	|	|	|	|	0.02
36.167	0.00	0.00	0.000	O	|	|	|	|	0.02
36.250	0.00	0.00	0.000	O	|	|	|	|	0.02
36.333	0.00	0.00	0.000	O	|	|	|	|	0.02
36.417	0.00	0.00	0.000	O	|	|	|	|	0.02
36.500	0.00	0.00	0.000	O	|	|	|	|	0.02
36.583	0.00	0.00	0.000	O	|	|	|	|	0.02
36.667	0.00	0.00	0.000	O	|	|	|	|	0.01
36.750	0.00	0.00	0.000	O	|	|	|	|	0.01
36.833	0.00	0.00	0.000	O	|	|	|	|	0.01
36.917	0.00	0.00	0.000	O	|	|	|	|	0.01
37.000	0.00	0.00	0.000	O	|	|	|	|	0.01
37.083	0.00	0.00	0.000	O	|	|	|	|	0.01
37.167	0.00	0.00	0.000	O	|	|	|	|	0.01
37.250	0.00	0.00	0.000	O	|	|	|	|	0.01
37.333	0.00	0.00	0.000	O	|	|	|	|	0.01
37.417	0.00	0.00	0.000	O	|	|	|	|	0.01
37.500	0.00	0.00	0.000	O	|	|	|	|	0.01
37.583	0.00	0.00	0.000	O	|	|	|	|	0.01
37.667	0.00	0.00	0.000	O	|	|	|	|	0.01
37.750	0.00	0.00	0.000	O	|	|	|	|	0.01
37.833	0.00	0.00	0.000	O	|	|	|	|	0.01
37.917	0.00	0.00	0.000	O	|	|	|	|	0.01

**********HYDROGRAPH DATA**********

Number of intervals = 455
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 7.127 (CFS)
Total volume = 0.880 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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1  DOWNSTREAM          STATION     INVERT     DEPTH       Q        AREA       FORCE       DNORM       DCRIT
    SLOPE       SFRICT


 ELEMENT NO =   1 1    1991.000    424.100      .763      21.001      1.484       9.693      .000
1.436     .00000      .000000

 ELEMENT NO =   2 2    2000.000    424.190      .733      21.001      1.402      10.190     1.118
1.436     .01000      .051975
 ELEMENT NO =   2 2    1992.462    424.115      .758      21.001      1.470       9.772     1.118
1.436     .01000      .045437
 ELEMENT NO =   2 2    1991.000    424.100      .763      21.001      1.484       9.693     1.118
1.436     .01000      .044262

 ELEMENT NO =   3 7    2000.010    425.520     1.113      21.001      1.796       8.482      .000
1.642    *******      .024190
 ELEMENT NO =   3 7    2000.000    424.190      .733      21.001      1.402      10.190      .000
1.436    *******      .051975

 ELEMENT NO =   4 2    2007.510    425.640     1.096      21.001      1.762       8.601     1.273
1.642     .01600      .025453
 ELEMENT NO =   4 2    2000.010    425.520     1.113      21.001      1.796       8.482     1.273
1.642     .01600      .024190

 ELEMENT NO =   5 2    2007.520    425.640     1.095      21.001      1.761       8.605      .000
1.642     .00000      .025494
 ELEMENT NO =   5 2    2007.510    425.640     1.096      21.001      1.762       8.601      .000
1.642     .00000      .025453

 ELEMENT NO =   6 2    2042.870    426.540     1.095      21.001      1.761       8.605     1.095
1.642     .02546      .025494
 ELEMENT NO =   6 2    2007.520    425.640     1.095      21.001      1.761       8.605     1.095
1.642     .02546      .025494

 ELEMENT NO =   7 7    2148.170    429.230     1.093      21.001      1.757       8.616      .000
1.642     .02555      .025616
 ELEMENT NO =   7 7    2042.870    426.540     1.095      21.001      1.761       8.605      .000
1.642     .02555      .025494
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 ELEMENT NO =   8 3    2148.191    429.280     1.106      21.000      1.782       8.528      .000
1.642    2.38081      .024682
 ELEMENT NO =   8 3    2148.170    429.230     1.093      21.001      1.757       8.616      .000
1.642    2.38081      .025616

 ELEMENT NO =   9 2    2150.200    429.290     1.096      21.000      1.762       8.600     2.000
1.642     .00498      .025447
 ELEMENT NO =   9 2    2148.191    429.280     1.106      21.000      1.782       8.528     2.000
1.642     .00498      .024682

 ELEMENT NO =  10 2    2172.800    429.860     1.094      21.000      1.758       8.614     1.099
1.642     .02522      .025599
 ELEMENT NO =  10 2    2150.200    429.290     1.096      21.000      1.762       8.600     1.099
1.642     .02522      .025447

 ELEMENT NO =  11 2    2172.810    429.860     1.093      21.000      1.757       8.618      .000
1.642     .00000      .025641
 ELEMENT NO =  11 2    2172.800    429.860     1.094      21.000      1.758       8.614      .000
1.642     .00000      .025599

 ELEMENT NO =  12 2    2252.980    431.910     1.093      21.000      1.757       8.618     1.094
1.642     .02557      .025641
 ELEMENT NO =  12 2    2172.810    429.860     1.093      21.000      1.757       8.618     1.094
1.642     .02557      .025641

 ELEMENT NO =  13 3    2257.490    432.030     1.094      21.000      1.759       8.609      .000
1.642     .02661      .025543
 ELEMENT NO =  13 3    2252.980    431.910     1.093      21.000      1.757       8.618      .000
1.642     .02661      .025641

 ELEMENT NO =  14 2    2364.760    434.770     1.122      21.000      1.814       8.422     1.094
1.642     .02554      .023565
 ELEMENT NO =  14 2    2259.020    432.069     1.094      21.000      1.759       8.609     1.094
1.642     .02554      .025543
 ELEMENT NO =  14 2    2257.490    432.030     1.094      21.000      1.759       8.609     1.094
1.642     .02554      .025543
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1  DOWNSTREAM          STATION     INVERT     DEPTH       Q        AREA       FORCE       DNORM       DCRIT
    SLOPE       SFRICT


 ELEMENT NO =   1 1    1991.000    424.100      .901      28.100      1.876      13.769      .000
1.673     .00000      .000000

 ELEMENT NO =   2 2    2000.000    424.190      .872      28.100      1.791      14.331     1.307
1.673     .01000      .046692
 ELEMENT NO =   2 2    1991.000    424.100      .901      28.100      1.876      13.769     1.307
1.673     .01000      .041041

 ELEMENT NO =   3 7    2000.010    425.520     1.360      28.100      2.274      12.143      .000
1.830    *******      .023803
 ELEMENT NO =   3 7    2000.000    424.190      .872      28.100      1.791      14.331      .000
1.673    *******      .046692

 ELEMENT NO =   4 2    2007.510    425.640     1.339      28.100      2.235      12.285     1.607
1.830     .01600      .024839
 ELEMENT NO =   4 2    2000.010    425.520     1.360      28.100      2.274      12.143     1.607
1.830     .01600      .023803

 ELEMENT NO =   5 2    2007.520    425.640     1.338      28.100      2.234      12.289      .000
1.830     .00000      .024865
 ELEMENT NO =   5 2    2007.510    425.640     1.339      28.100      2.235      12.285      .000
1.830     .00000      .024839

 ELEMENT NO =   6 2    2042.870    426.540     1.347      28.100      2.251      12.225     1.327
1.830     .02546      .024396
 ELEMENT NO =   6 2    2007.520    425.640     1.338      28.100      2.234      12.289     1.327
1.830     .02546      .024865

 ELEMENT NO =   7 7    2148.170    429.230     1.830      28.100      3.012      10.756      .000
1.830     .02555      .013434
 ELEMENT NO =   7 7    2042.870    426.540     1.347      28.100      2.251      12.225      .000
1.830     .02555      .024396

 ELEMENT NO =   8 3    2148.191    429.280     1.106      21.000      1.782       8.528      .000
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1.642    2.38081      .024682

 ELEMENT NO =   9 2    2150.200    429.290     1.096      21.000      1.762       8.600     2.000
1.642     .00498      .025447
 ELEMENT NO =   9 2    2148.191    429.280     1.106      21.000      1.782       8.528     2.000
1.642     .00498      .024682

 ELEMENT NO =  10 2    2172.800    429.860     1.094      21.000      1.758       8.614     1.099
1.642     .02522      .025599
 ELEMENT NO =  10 2    2150.200    429.290     1.096      21.000      1.762       8.600     1.099
1.642     .02522      .025447

 ELEMENT NO =  11 2    2172.810    429.860     1.093      21.000      1.757       8.618      .000
1.642     .00000      .025641
 ELEMENT NO =  11 2    2172.800    429.860     1.094      21.000      1.758       8.614      .000
1.642     .00000      .025599

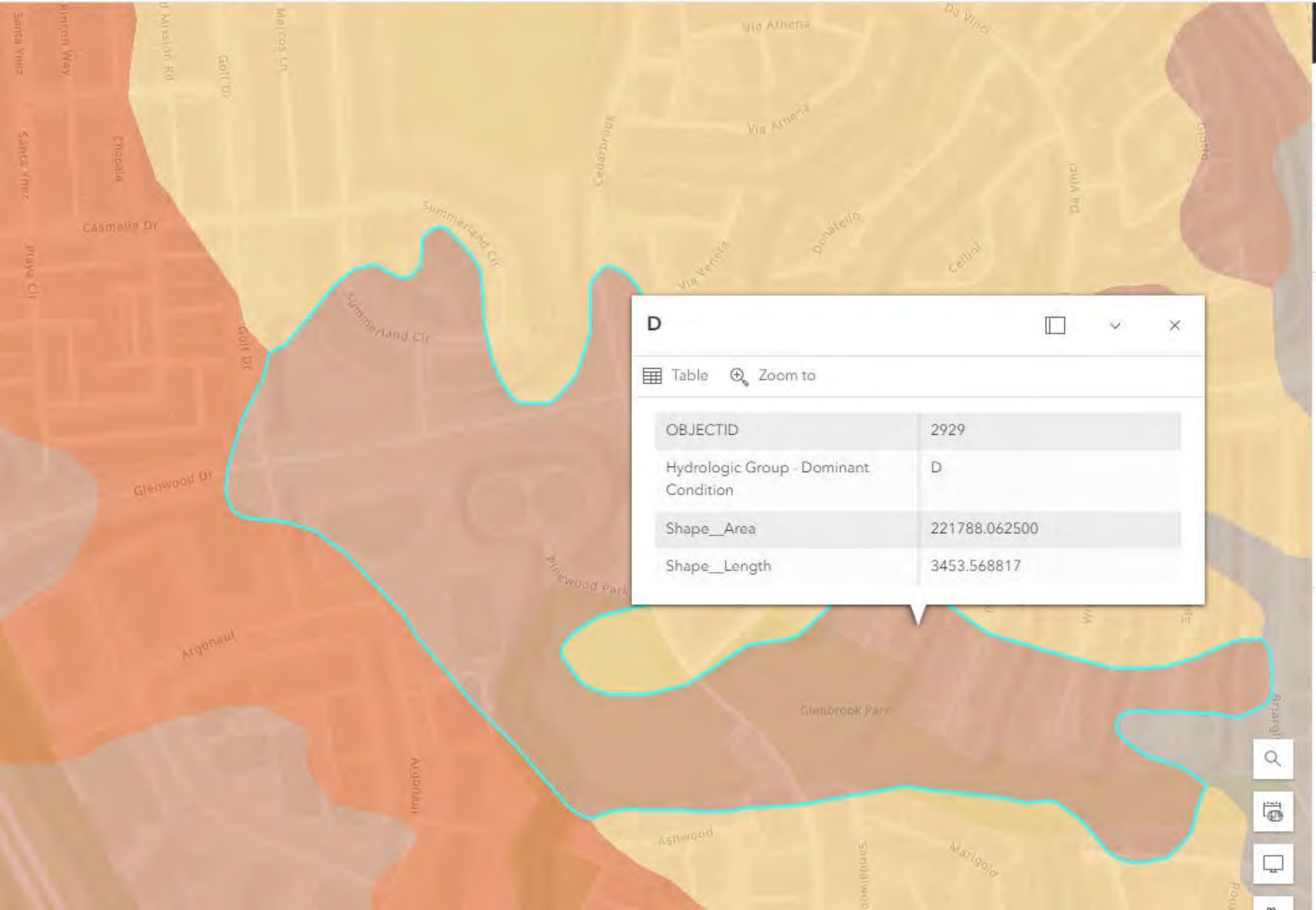
 ELEMENT NO =  12 2    2252.980    431.910     1.093      21.000      1.757       8.618     1.094
1.642     .02557      .025641
 ELEMENT NO =  12 2    2172.810    429.860     1.093      21.000      1.757       8.618     1.094
1.642     .02557      .025641

 ELEMENT NO =  13 3    2257.490    432.030     1.094      21.000      1.759       8.609      .000
1.642     .02661      .025543
 ELEMENT NO =  13 3    2252.980    431.910     1.093      21.000      1.757       8.618      .000
1.642     .02661      .025641

 ELEMENT NO =  14 2    2364.760    434.770     1.122      21.000      1.814       8.422     1.094
1.642     .02554      .023565
 ELEMENT NO =  14 2    2259.020    432.069     1.094      21.000      1.759       8.609     1.094
1.642     .02554      .025543
 ELEMENT NO =  14 2    2257.490    432.030     1.094      21.000      1.759       8.609     1.094
1.642     .02554      .025543

 ELEMENT NO =  15 2    2364.770    434.770     1.121      21.000      1.813       8.426      .000
1.642     .00000      .023600
 ELEMENT NO =  15 2    2364.760    434.770     1.122      21.000      1.814       8.422      .000
1.642     .00000      .023565
```

APPENDIX D



D

Table | Zoom to

OBJECTID	2929
Hydrologic Group - Dominant Condition	D
Shape__Area	221788.062500
Shape__Length	3453.568817

Hydro Group Soils

Properties

Use the selector above to switch between layers in the map.

Information

Symbology

Hydro Group Soils

- A
- B
- C
- D

Appearance

Blending

Normal

Transparency

37%

25% 50% 75%

N 2165945.212 E 600906.889

N 2165944.984 E 622407.126

SITE

LAGUNA WOODS

LAGUNA BEACH

ALISO VIEJO

LAGUNA HILLS

LAGUNA NIGUEL

SOME NUMBERS ON PRIVATE ROADS IN THIS AREA ARE OFF LAGUNA CANYON RD.

ALISO WOOD CANYONS REGIONAL PARK

Tract 8352

N 2150145.313 E 600906.665

N 2150145.056 E 622406.939

63

65

64

64

Scale: 1"=600'

NOTICE

This drainage map has been prepared for information purposes only. The location and ownership of facilities have been determined from available information provided by public agencies, but may not be exact. The user of this map is responsible for verifying exact location, ownership and regional versus local character of drainage facilities.
Additional information may be obtained from public plans and recorded deeds.
Character designations shown on this map are for convenience only and are not controlling. Neither the County of Orange nor The Orange County Flood Control District (OCFCD) assume any liabilities for inaccuracy of this map.

Call Alan Vu at (714) 834-5986 to notify Public Facility and Resources Department (PFRD) of additions or corrections.

ORANGE COUNTY FLOOD CONTROL DISTRICT

BASEMAP OF DRAINAGE FACILITIES IN ORANGE COUNTY

REVISION	DATE	SHEET NO.	DWG. NO.
S.GUTIERREZ	JAN.16 2007	64	MAPS-113-3

- Channel Drainage Area Boundary
- Major Sub-Area Drainage Boundary
- Minor Sub-Area Drainage Boundary
- Existing O.C.F.C.D. Facility
- Existing Local Facility
- Existing Retarding Basin or Reservoir
- Natural Watercourse
- City Limits
- G Greenbelt
- P.S. Pump Station
- Catch Basin (length in feet)
- Drop Inlet or Other Entry
- P Privately Owned
- S State
- F Federal

Existing O.C.F.C.D.	Existing LOCAL
D24x60RCB	D24x60RCB
	Earth Trapezoidal Channel (base width by height in feet)
	Reinforced Concrete Trapezoidal Channel (base width by height in feet)
	Reinforced Concrete Rectangular Channel (base width by height in feet)
	Reinforced Concrete Box (RCB) (number of barrels-span by height in feet)
	Reinforced Concrete Pipe (RCP) (diameter in inches)
	Corrugated Metal Pipe (CMP) (diameter in inches)
	Concrete Pipe (diameter in inches)
	Concrete Oval Pipe (width by height in inches)
	Steel Pipe (diameter in inches)
	Reinforced Concrete Arch (base span by height in inches)
	Corrugated Metal Arch (base span by height in inches)

APPENDIX E

SA GEOTECHNICAL
OPTIMIZED SOIL ENGINEERING

May 31, 2024

Project No. 24059-01

To: Meritage Homes
5 Peters Canyon Road, Suite 310
Irvine, California 92606

Attention: Ms. Emma Hill

Subject: Geotechnical Subsurface Exploration, Due Diligence Study, and Preliminary Geotechnical Recommendations, Proposed Residential Development, 95 Argonaut, City of Aliso Viejo, California

At your request, SA Geotechnical, Inc. (SA GEO) has conducted subsurface exploration and geotechnical due diligence study for the proposed residential development located at 95 Argonaut in the City of Aliso Viejo, California (Figure 1). The purpose of this study was to evaluate the geotechnical site conditions in light of the proposed grading and improvements in order to provide a geotechnical summary of conditions and preliminary geotechnical recommendations for project design, grading, and construction. Our evaluation included review of collected geologic and geotechnical engineering reports and maps pertinent to the subject site; a site-specific subsurface exploration; laboratory testing; geotechnical analysis; and preparation of this report.

The subject site is currently developed with a 2-story office building, retaining wall along the westerly property line, at-grade asphalt concrete paved parking lot and associated drive aisles, and hardscape/landscape improvements, all of which will be demolished as part of the proposed project. An approximately 20-foot-high descending slope is present along the easterly property boundary. Based on our review and field exploration, the primary geotechnical constraints include the presence of highly expansive silty/clayey soil that is diatomaceous and seismic shaking during a strong seismic event. The subsurface artificial fill soils at the site are primarily highly plastic silt/clay with minor interlayered clayey/silty sands. The artificial fill soils are generally diatomaceous and derived from Monterey Formation bedrock. Bedrock of the Monterey and Niguel Formations underlie the site at depth. Groundwater was encountered in one boring (H-4) during drilling, at a depth of 55 feet below ground surface. Onsite stormwater infiltration is not feasible considering that the site is underlain by relatively thick artificial fill, which are predominantly silty/clayey, overlying bedrock.

This report presents our findings, conclusions, and preliminary design recommendations for the subject residential development. Based on our review, the proposed grading and development is considered geotechnically feasible provided the recommendations in this report are implemented during design, grading, and construction. Additional evaluation and analysis may need to be performed once the project plans for grading and foundations are developed.

References pertinent to the site are included in Appendix A. Boring and laboratory test data are included in Appendix B and C, respectively. Seismic design parameters are presented in Appendix D. Slope stability analysis is presented in Appendix E. General earthwork and grading specifications are presented in Appendix F.

If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,

SA GEOTECHNICAL, INC.

Anthony Zepeda, CEG 2681
Project Geologist

Reza Saberi, GE 3071
Principal Engineer

Peter Anderson, CEG 2596
Principal Engineering Geologist







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Appendix B – Boring Logs
Appendix C – Laboratory Test Data
Appendix D – Seismicity Data
Appendix E – Slope Stability Analysis
Appendix F – General Earthwork and Grading Specifications

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EXECUTIVE SUMMARY

The subject site is underlain by relatively thick artificial fill material as a result of mass grading and development that occurred in the 1980s. Approximately 25 to 75 feet of fill was encountered in all borings which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard/medium dense to dense. The fine-grained fill materials are derived from the Monterey Formation and were found to be diatomaceous. Bedrock of the Monterey and Niguel Formations were encountered during drilling, underlying the artificial fill at depth.

The primary geotechnical constraints at the site include the following:

- Presence of highly expansive silty/clayey soils that are diatomaceous; and
- The potential for seismic shaking during an earthquake event.

Remedial grading for the site should consist of the removal and re-compaction of all weathered/disturbed fill materials. Remedial removals are anticipated to be on the order of 3 to 4 feet below existing grades within the proposed building pads. Remedial grading within the proposed drive areas may be limited to removal and re-compaction of the soils in the upper 1 to 2 feet. Deeper removals may be required where existing trees, utility lines, structures, and foundations are to be abandoned/removed. Considering that the onsite soils predominately consist of silty/clayey soils that are diatomaceous, achieving adequate compaction at acceptable moisture contents during fill placement may require additional mixing and compaction effort.

Groundwater was encountered in one boring (H-4) during our exploration, at a depth of 55 feet bgs (within Niguel Formation). Historic high groundwater is mapped 20 feet below original grades; however, this does not account for the mass grading and fill placement that occurred onsite. In general, we anticipate groundwater to remain at least 20 feet below existing grades upon the completion of grading. However, seepage/groundwater may be present at shallower depth locally and can fluctuate on an annual and seasonal basis.

Considering the relatively minor grading anticipated to achieve design grades, the laboratory test data, building foundations and slabs should be designed to tolerate a total settlement of 2 inches and a differential settlement of 1-inch over a span of 40 feet. Onsite soils are anticipated to have "High" expansion potential at the completion of grading and are considered corrosive to concrete ("S2").

Based on our findings, we conclude that the proposed residential development is feasible from a geotechnical viewpoint, provided it is designed and constructed in accordance with the recommendations presented in this report and the future design/plan review report(s). The site is not considered suitable for infiltration of storm water.

1.0 INTRODUCTION

1.1 Introduction and Scope of Services

At your request, SA Geotechnical, Inc. (SA GEO) has conducted subsurface exploration and geotechnical due diligence study for the proposed residential development located at 95 Argonaut in the City of Aliso Viejo, California (Figure 1). The purpose of our study was to assess the onsite geologic and geotechnical conditions and provide preliminary recommendations for design, grading, and construction of the proposed residential development. A Topographic Survey by X Engineering & Consulting, received on May 15, 2024, has been utilized as the base for our Geotechnical Map (Plate 1).

Our scope of services for this due diligence study included the following tasks:

- Review of available published geologic and geotechnical maps, reports, and data for the subject site and surrounding area, including an archive search of City of Aliso Viejo records. A list of references is included in Appendix A.
- Historic aerial photograph review, dating back to 1931.
- Notification and coordination with DigAlert to identify and clear boring locations of underground utilities.
- Subsurface exploration consisting of excavation, sampling and logging of four hollow-stem auger borings (H-1 through H-4) to depths ranging from 41.5 to 81.5 feet below ground surface (bgs). Boring logs are included in Appendix B.
- Laboratory testing of selected samples to determine engineering properties of onsite soils, including in-situ moisture and density, grain size distribution, Atterberg limits, maximum density and optimum moisture content, consolidation/collapse, shear strength, expansion potential, and soluble sulfate content. Laboratory test results are included in Appendix C.
- Geotechnical evaluation and analysis of the compiled data regarding the proposed grading and development.
- Evaluation of faulting, seismicity, and seismic and static settlement in accordance with the 2022 California Building Code (CBC).
- Preparation of this report including our findings, conclusions, preliminary recommendations, and accompanying illustrations.

SA GEO's expertise and scope of services do not include assessment of potential subsurface environmental contaminants or environmental health hazards.

1.2 Site Condition and History

The subject site is located at 95 Argonaut, Aliso Viejo, California (see Figure 1), and is legally described as Parcel 1 of Parcel Map No. 85-158, Assessor's Parcel Number (APN) 141-521-48. The approximately 2.85-acre site is bound by Glenwood Lane to the north, Argonaut Street to the west and south, a Moulton Niguel Water District reservoir/tank to the east, and other commercial properties to the southeast. The site is currently developed with an approximately 24,879 square-foot two-story commercial building with at-grade asphalt-paved parking lot, drive aisles, and

associated landscaping/hardscaping. The site is primarily flat, with elevations ranging from 440 to 448 feet above mean sea level. A retaining wall is present along the western property line, approximately 3 to 6 feet in height, with an ascending 3- to 4-foot-high 2H:1V slope above. There is an approximately 20-foot-high descending 2H:1V slope along the easterly property line extending offsite to the adjacent water reservoir/tank.

Based on our review of available historic aerial photographs dating back to 1931, the earliest land use at the subject site and surrounding areas were for agricultural purposes (ranching). Development of the surrounding area for commercial use began in the early 1980s, although the subject site remained an undeveloped natural drainage/swale. The site was mass graded between 1985 and 1987, concurrent with the construction of the water tank to the east. This mass grading appears to have occurred concurrent with the adjacent geotechnically-observed mass grading (Jack G. Raub Company, 1987), although no documents pertaining to the grading of the subject site were recovered during our archive search of City/County records. The geotechnical maps/report associated with the adjacent graded commercial lots overlap with the western portion of the subject site and detail a historical (pre-grading) topography ranging from 390 to 412 feet above sea level (Jack G. Raub Company, 1987); however, topography for the eastern and southern portion of the subject site were not included. This suggests a minimum of 30 to 60 feet of design fill associated with mass grading, although this does not account for any remedial grading/removal of alluvium during grading. The streets in the industrial complex were constructed by 1988, along with some of the other commercial buildings in the area. The existing two-story commercial building at the subject site was constructed by 1990. No significant changes were observed on the subject site since initial development and construction of the existing commercial building.

1.3 Proposed Grading and Improvements

Prior to any site development or grading, the existing structures, pavements, utilities, and hardscape will be demolished. Considering the site is relatively flat, we anticipate design grading to consist of cuts and fills on the order of 1 to 3 feet to reach pad grades and provide proper site drainage. Locally, deeper cuts/fills may be required were retaining structures are proposed.

The proposed project is anticipated to include grading/construction for residential development. Based on our review of the Site Plan provided by you, dated March 2024, we understand that the proposed project will consist of 8 multifamily buildings totaling 62 residential units. We anticipate the proposed structures will be 3- to 4-story and consist of wood-framed construction. The development will also include infrastructure improvements, parking/drive aisles, stormwater filtration devices and landscape/hardscape improvements.

1.4 Subsurface Exploration

Our field exploration was performed on April 22, 2024, and included excavation of four hollow stem auger borings (H-1 through H-4) to depths ranging from 41.5 to 81.5 feet bgs.

The borings were geologically logged, and samples were obtained at selected intervals. After completion of drilling, the excavations were backfilled with soil cuttings and tamped. Pavement at the boring locations was repaired with cold patch asphalt. The approximate boring locations are shown on Plate 1 (Geotechnical Map). Boring logs are included in Appendix B.

Soil sampling was performed using a Modified California ring sampler. Relatively undisturbed ring samples were obtained from the borings at various depths with a 2.5-inch inside-diameter, split-barrel sampler. The sampler was driven with a 140-pound, automatic trip hammer, free falling 30 inches. The sampling was used to assess the soil beneath the site as well as to obtain a measure of resistance of the soil to penetration (recorded as blows-per-foot on the geotechnical boring logs). Representative bulk samples of onsite soils were also collected from soil cuttings and used for additional soil identification purposes and laboratory testing.

1.5 Laboratory Testing

Representative samples of onsite soils collected during our field exploration were tested to characterize the engineering properties. Laboratory tests performed on selected relatively undisturbed and bulk soil samples included:

- Moisture content and dry density;
- Grain size analysis;
- Atterberg limits;
- Direct shear;
- Consolidation;
- Maximum density and optimum moisture content;
- Expansion potential; and
- Soluble sulfate.

Laboratory tests were conducted in general conformance with applicable ASTM International standards. The laboratory test results are provided in Appendix C.

2.0 GEOTECHNICAL FINDINGS

2.1 Geologic Setting and Earth Units

The subject site is located in the eastern foothills of the San Joaquin Hills, within the Peninsular Ranges geomorphic province of Southern California. The site is mapped by the U.S. Geological Survey (USGS, 2006) as underlain by sedimentary bedrock of the Monterey and Niguel Formations that is successively overlain by unconsolidated alluvium. Based on our subsurface exploration and understanding of the site history, the subject site was mass graded in the 1980's resulting in thick artificial fill materials placed over bedrock. No alluvium was encountered in any of our borings and is assumed to have been removed during mass grading. The earth unit distribution and our interpretation of the subsurface conditions are shown on the Geotechnical Map (Plate 1) and Geotechnical Cross-Sections A-A' and B-B' (Plates 2 and 3).

Our subsurface exploration encountered compacted **Artificial Fill (Af)** underlying the site as a result of original mass grading. Approximately 25 to 75 feet of artificial fill was encountered in all borings which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard. The fine-grained fill materials appear to be derived from the Monterey Formation and were found to be diatomaceous.

We encountered sedimentary bedrock of the **Monterey Formation (Tm)** and **Niguel Formation (Tn)** underlying the fill materials in all borings. Based on our review of the regional geologic mapping, the earth units are in fault contact below the site (see Figure 2). The fault is inactive/pre-Quaternary. The **Monterey Formation** bedrock generally consisted of olive gray, olive brown, brown, pale yellow, and white siltstone that was very moist to wet, very stiff to hard, and highly diatomaceous. Bedding was observed to be massive to well bedded with thin to laminated bedding.

The **Niguel Formation** was encountered in one boring (H-4) and the bedrock generally consisted of yellowish brown to yellowish gray sandstone that was saturated and very dense. The sandstone was observed to be massive, weakly indurated, and slightly friable.

2.2 Geotechnical Conditions

Based on our geotechnical exploration and laboratory testing, the site geotechnical conditions are generally as follows:

Soil Moisture Content and Dry Density: Onsite artificial fill materials had in-situ moisture contents and dry densities ranging from 10.9 to 84.2 percent and 50.6 to 117.9 pounds per cubic foot (pcf), respectively. Bedrock of the Monterey Formation had in-situ moisture contents ranging from 26.7 to 86.7 percent and dry densities ranging from 51.1 to 96.9 pcf. Please note that the high moisture contents and low densities in the artificial fill and Monterey Formation are typical of diatomaceous materials. Niguel Formation bedrock had in-situ moisture contents ranging from 15.4 to 23.8 percent and dry densities ranging from 96.6 to 115.2 pcf.

Blow counts (blows-per-foot of penetration) in the artificial fill generally ranged from 11 to 66 blows per foot. Blow counts in bedrock ranged from 22 blows per foot to 50 blows for 3.5 inches.

Soil Properties: Grain-size distribution tests were conducted on three bulk samples collected from the uppermost 5 feet. The samples were classified in accordance with the Unified Soil Classification System (USCS) as highly plastic silt (MH) with fines contents (passing No. 200 sieve) ranging from 64 to 73 percent.

Soil plasticity testing was performed on three bulk samples collected from the uppermost 5 feet. The samples were classified as highly plastic silt (MH) with Plasticity Indices ranging from 31 to 37 and Liquid Limits ranging from 70 to 83 percent.

Maximum dry density testing of one near surface sample (collected from the uppermost 5 feet) indicates that the silty soil (MH) has a maximum dry density of 94.1 pcf at optimum moisture content of 20.5 percent.

Shear Strength: Two direct shear tests (relatively undisturbed samples) were performed on samples collected at depths of 2.5 and 5 feet, representative of existing fill materials. The undisturbed direct shear test results indicate that the samples had ultimate internal friction angles of 24 and 26 degrees at cohesions of 400 and 450 pounds per square foot (psf), respectively. The peak internal friction angles were 28 and 29 degrees with cohesions of 450 and 775 psf, respectively.

Consolidation: Tests were performed on four samples collected at depths ranging from 2.5 to 15 feet, representative of existing fil materials. The testing showed that the diatomaceous fill materials are moderately compressible. However, the pre-consolidation pressures are relatively high (higher than 5 ksf). The samples generally had negligible collapse and swell upon the addition of water at a load of 3.2 ksf.

Expansion Potential: Expansion index testing was performed on two samples collected in the upper 5 feet. The results indicate a "High" expansion potential (EI = 91 and 104).

Soluble Sulfate: Soluble sulfate testing was performed on two bulk samples collected from the uppermost 5 feet. The results indicate negligible soluble sulfate content; however, per our experience with the Monterey Formation and review of the laboratory testing from the adjacent development (Jack G. Raub Company, 1987), we anticipate the soluble sulfate content of the onsite soils to be classified as "S2" per Table 19.3.1.1 of ACI-318-14.

2.3 Groundwater

Groundwater was encountered during our subsurface exploration in one boring (H-4) at a depth of 55 feet below ground surface (bgs) within the Niguel Formation. Groundwater was not encountered in boring drilled within the Monterey Formation to a depth of 81.5 feet bgs. The presence of the fault contact between Monterey and Niguel formations may act as a barrier for groundwater migration.

Historic high groundwater mapping indicates high groundwater is greater than 20 feet bgs (CDMG, 2001a). Please note that this is below original grades prior to mass grading and significantly raising grade across the site. Groundwater is anticipated to fluctuate both seasonally and annually, but it is expected to remain deep below the site.

2.4 Regional Faulting and Seismicity

Regional Faults: The site is not located within a fault-rupture hazard zone as defined by the Alquist-Priolo Special Studies Zones Act (CGS, 2018). Also, based on mapping by the State (Jennings and Bryant, 2010), there are no active faults mapped at the site. As discussed previously, the Monterey and Niguel Formations are in fault contact deep below the site; however, the fault is considered inactive (Pre-Quaternary). Regional Faults are presented on Figure 3.

Seismicity: Properties in southern California are subject to seismic hazards of varying degrees depending upon the proximity, degree of activity, and capability of nearby faults. These hazards can be primary (i.e., directly related to the energy release of an earthquake) or secondary (i.e., related to the effect of earthquake energy on the physical world). Since there are no active faults at the site, the potential for primary ground rupture is considered very low. The primary seismic hazard for this site is ground shaking during a future earthquake.

Using the USGS deaggregation computer program (USGS, 2024) and the site coordinates of 33.5946 north latitude and –117.7243 west longitude, the closest major active faults include the Newport-Inglewood and San Joaquin Hills Faults. The maximum moment magnitude for the controlling fault is 7.1 M_W, which would be generated from the San Joaquin Hills Fault; however, numerous other regionally active faults could also produce ground shaking at the site during an earthquake.

The site is not located within a mapped potential liquefaction hazard zone, as defined by the State's Seismic Hazard Mapping (CDMG, 2001b). Other secondary seismic hazards, such as tsunami and seiche are considered nil due to site elevation and distance from the ocean or other confined body of water (CGS, 2021).

2.5 Slope Stability

The site geologic/geotechnical conditions are generally favorable for overall stability of the existing slope along the eastern perimeter. The existing fill slope is approximately 20 feet in total height at an inclination of 2H:1V (horizontal:vertical). We prepared cross-section B-B' (Plate 3) depicting the existing descending slope at the site. Slope stability analysis was performed for a 2H:1V slope with a maximum height of 25 feet, using artificial fill soil strength parameters that were developed during this study and based on the direct shear test results. For our analysis, we used an internal friction angle of 24 degrees and a cohesion of 400 psf. For pseudo-static analysis, we applied a seismic horizontal coefficient (k_h) of 0.29 in accordance with Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California (CGS, 2008).

The results of the slope stability analysis are presented in Appendix E. The existing fill slope at the site was found to be grossly stable with a factor of safety of well over 1.5 under static conditions and a factor of safety of over 1.1 for pseudo-static conditions.

2.6 Settlement and Foundation Considerations

In general, the anticipated settlements depend upon the building loads, type of foundations, and the geotechnical properties of the supporting subgrade. Considering the subsurface soil conditions and laboratory test data, and relatively lightly loaded residential structures, we estimate the total static settlement to be on the order of 2 inches and the differential static settlement to be on the order of 1-inch over a 40-foot span. This assumes remedial grading measures recommended in Section 3.2 of this report are implemented during site grading.

2.7 Stormwater Infiltration Feasibility

The site is underlain by thick (25 to 75 feet) silty/clayey artificial fill materials overlying bedrock. In accordance with County of Orange WQMP guidelines, stormwater infiltration should not be performed in compacted artificial fill and bedrock (OCPW, 2013). Furthermore, the fine-grained soils will not be conducive to infiltration. Also, considering the presence of slopes along the property boundaries and deep canyon fill, infiltration of stormwater can result in seepage or springs in locations where previously none existed, potentially impacting offsite properties and slopes. Stormwater infiltration is not considered feasible from a geotechnical viewpoint.

2.8 Shrinkage and Bulking

The shrinkage and bulking (reduction or increase in volume of excavated materials on recompaction as fill) varies by soil type and location. The volume change primarily depends on in-situ density and the maximum dry density of the soil type. Considering the site is underlain by compacted fill materials, we anticipated that shrinkage of site soils will be relatively low and less than 5 percent. Ground subsidence at the site is estimated to be on the order of 0.1 foot. These values exclude losses due to removal of pavement, vegetation and debris and are dependent on the accuracy of the site topographic survey and type of equipment and compaction method used by the contractor.

2.9 Existing Utilities and Pavement Section

Existing onsite utilities consisting of sewer, water, and gas/electric lines are present onsite supporting the existing office building and associated improvements. We anticipate that the existing utilities will be demolished as part of the proposed improvements and that new utilities and service connections will be established.

The existing pavement section was measured in Borings H-1 through H-4 excavated during this study. The pavement section consisted of 4 inches of asphalt concrete (AC) over 6 to 8 inches of aggregate base (AB).

3.0 CONCLUSION AND PRELIMINARY RECOMMENDATIONS

3.1 General Conclusion and Recommendation

Based on our review, construction of the proposed residential development, as described herein, is considered geotechnically feasible provided the preliminary recommendations in this report are implemented during design, grading, and construction. Grading, foundation, structural and wall plans for the project should be reviewed by the geotechnical consultant during the design phase. Updated recommendations should be provided once the project plans are finalized and as needed.

The recommendations in this report should be considered minimum and may be superseded by more restrictive requirements of others. In addition to the following recommendations, General Earthwork and Grading Specifications are provided in Appendix F.

3.2 Site Preparation and Earthwork

Site preparation and grading should be performed in accordance with the recommendations herein and the requirements of the City of Aliso Viejo/County of Orange.

3.2.1 Site Demolition and Clearing

Prior to remedial grading, the existing structures, foundations, hardscape/landscape, and utilities to be abandoned should be demolished and removed. Deleterious materials and debris should be cleared from the site and disposed of offsite. Concrete material may be mixed with onsite soils and placed as compacted fill provided it is broken into pieces that are smaller than 6 inches in the largest diameter. Asphalt concrete may also be used in compacted fill materials; however, it should not be placed under the residential pads. Placement of concrete and asphalt as compacted fill should be approved by the project environmental consultant. Excavations for the removal of existing foundations, utilities, and vegetation, including onsite trees, should be observed by the geotechnical consultant. Large roots, highly organic soils, and existing utilities should be removed and should not be incorporated into new fills.

Soil that is disturbed as part of excavations or removal of trees or underground utilities should be evaluated by the geotechnical consultant. Excavations that require backfill should be properly documented and compacted under the observation and testing of the geotechnical consultant in accordance with the recommendations provided in Section 3.2.4.

3.2.2 Protection of Existing Improvements and Utilities

Existing improvements, and utilities on or adjacent to the site that are to be protected in place should be located and visually marked prior to grading operations. Excavations adjacent to improvements to be protected in-place or any utility easement should be performed with care, so as not to undermine existing foundations or destabilize the adjacent ground.

Stockpiling of soils more than 5 feet in height at or near existing structures and over utility lines should not be allowed. If deeper removals are required, shoring or other special measures (i.e., setback or laybacks) to provide safety and mitigate the potential for lateral/vertical movements may be required.

3.2.3 Remedial Grading Measures

Remedial grading at the site should consist of removal of weathered/unsuitable fill materials. In general, we recommend that remedial grading for the proposed building pads consist of removal and recompaction of soils in the upper 3 to 4 feet (from existing grade) to remove any unsuitable/disturbed artificial fill material. The removals for building pads should extend a minimum of 4 feet laterally, beyond the building footprint. Removals within the proposed drive areas may be limited to removal and re-compaction of the upper 1 to 2 feet, below existing grades. Where deeper unsuitable material is encountered, the removals should be extended to the bottom of unsuitable materials to competent, unweathered/undisturbed artificial fill.

The geotechnical consultant should review and approve the removal bottoms prior to fill placement and should provide additional specific recommendations based on actual conditions, if necessary.

Excavations deeper than 4 feet will need to be laid back at a minimum inclination of 1:1 or provided with shoring. Shallow, unconfined excavations (4 feet or less) may consist of near-vertical excavation, locally, and upon review by the geotechnical consultant. Trench excavations should be performed in accordance with Cal/OSHA requirements for Soil Type "B". The contractor's qualified person should verify compliance with Cal/OSHA requirements. Excavations near existing structures (within a 1:1 projection) should be provided with shoring that is designed to support the surcharge load of the existing structure. Otherwise, excavations may need to be performed in sections (A/B/C slot cuts). Slot cuts should not exceed more than 20 feet in length. The conditions should be reviewed in the field by the project geotechnical consultant. Additional recommendations should be provided based on the actual conditions encountered during excavation and grading, as needed.

3.2.4 Fill Placement

Upon the completion of remedial grading measures, the approved removal bottoms should be scarified a minimum of 6 inches. The removal bottoms and fill materials should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM Test Method D1557. Fill materials should be placed in loose lifts no thicker than 8 inches.

Fill materials should be relatively free of deleterious material. The existing fill materials are considered suitable for re-use as compacted fill provided any deleterious material is removed. Considering that the onsite soils predominately consist of silty/clayey soils that are diatomaceous, achieving adequate compaction at acceptable moisture contents during fill placement may require additional effort. The moisture content of the fill materials should be above the optimum moisture content but within the compactable levels.

Concrete material may be mixed with onsite soils and placed as compacted fill if it is broken into pieces that are smaller than 6 inches in the largest diameter. Asphalt concrete may also be used in compacted fill materials; however, it should not be placed under the residential pads. Placement of concrete and asphalt as compacted fill should be approved by the project environmental consultant.

3.2.5 Import

The geotechnical consultant should evaluate and accept any import soils prior to transportation to the subject site. We recommend that import soils have similar or better engineering properties to onsite soils. At minimum, the import materials should have an Expansion Index of less than 90 and a Plasticity Index of less than 25.

3.3 Settlement Potential

The amount of settlement will depend upon the type of foundation(s) selected and future loading by additional fill and structures. Based on our review of the subsurface data, considering the remedial grading recommendations provided in this report are implemented during grading, and structural loads typically associated with the anticipated 3- to 4-story residential units, we estimate that total and differential post-construction settlement will be on the order of 2 inches and 1-inch over a span of 40 feet, respectively.

SA GEO should be provided with the foundation plans and structural loads, once available, in order to further evaluate the potential for post-construction settlement of the proposed buildings and associated improvements. The parameters provided herein will then be confirmed/updated based on the planned foundations and loads and additional testing and/or analysis.

3.4 Foundation Design

The slab and foundations should be designed by the project structural engineer based on the proposed structure type and the anticipated loading conditions. The foundation soils are anticipated to have expansive soil conditions ("High" expansion potential) and will be subject to climatic and landscape moisture fluctuations. Post-tensioned slab should be anticipated for the proposed residential buildings. The following foundation recommendations are provided with the assumption that the recommendations included in Section 3.2 of this report are implemented during site grading. Caisson design parameters are provided in Section 3.5 of this report.

The recommended net allowable bearing capacity for continuous and isolated footings may be calculated based on the following equation:

$q_{all} = 500\ D + 150\ B + 1{,}500$ (but not to exceed 3,500 psf, see below for post-tensioned/mat slabs)

where:
D = embedment depth of footing, in feet
B = width of footing, in feet

Also, the following parameters may be used for design of foundation and slabs:

- Soil unit weight = 110 pcf
- Soil internal friction angle = 25 degrees
- Coefficient of Friction = 0.30
- Subgrade modulus (k) of 50 pci (corrected for large slabs)
- Soil elastic modulus (Es) of 1,000 psi
- Effective Plasticity Index (upper 15 feet) = 35

The allowable bearing capacity of 1,000 psf may be used for design of post-tensioned/mat foundation.

The dead load of concrete below adjacent grades (buried concrete foundations) may be neglected. The allowable bearing pressure and friction coefficient may be increased by one-third for wind and seismic loading.

We recommend that strip and isolated footings for the buildings have a minimum embedment depth of 18 inches below the lowest adjacent grade. Continuous footings should be at least 12 inches wide and isolated column footings should be at least 24 inches wide. The footings of freestanding and isolated structures, such as walls and pilasters, should have a minimum embedment depth of 18 inches into approved soils.

The following table provides our general guidelines and preliminary recommendations for design of post-tensioned foundations and slabs on expansive soil in accordance with the 2022 California Building Code (CBC) and Post-Tension Institute (PTI) DC 10.5 Edition provisions.

GEOTECHNICAL GUIDELINES
FOR DESIGN OF POST-TENSIONED SLABS

Parameter	Recommendation
Center Lift	
Edge Moisture Variation Distance, e_m	7.50 feet
Center Lift, y_m	0.90 inches
Edge Lift	
Edge Moisture Variation Distance, e_m	4.00 feet
Edge Lift, y_m	1.25 inch
Presaturation, as needed, to obtain the minimum moisture down to the minimum depth	1.3 x optimum down to 18 inches

We recommend that post-tensioned slabs have a thickened edge such that the slab is embedded a minimum of 18 inches below the lowest adjacent grade.

In addition, as indicated in the DC 10.5 Edition of PTI, shape factor calculations should be performed by the project structural engineer in order to determine if strengthening/modification of foundations are necessary. Per PTI guidelines, modifications to the foundations design should be considered if the shape factor (ratio of square of foundation perimeter over foundation area) exceeds 24.

If non-post-tensioned slabs-on-grade and foundations are considered at the site, an effective Plasticity Index of 35 is considered appropriate for the upper 15 feet of soil materials, in accordance with Wire Reinforcement Institute (WRI) method (per the 2022 California Building Code). For non-post-tensioned slabs, we recommend a minimum embedment of 18 inches below the lowest adjacent grade for the perimeter footings. Also, the upper 18 inches of subgrade soil should be pre-saturated to 130 percent of optimum moisture content prior to placement of moisture barrier and concrete.

The foundations and slabs should also be designed to tolerate the total and differential settlements discussed in Section 3.3 of this report.

For the design of pole-type foundations (i.e., light poles, shade structures, etc.), an allowable soil-bearing pressure ($_{S1}$) of 290 psf/ft may be used for Equation 18-1 (the "pole" equation) of the 2022 California Building Code (CBC) Section 1807.3.2.1 to determine the depth of embedment for the footings, considering level ground conditions. The equation is applicable for designed embedment depths of less than 12 feet for the purpose of computing lateral pressure. Also, for vertical loads on pole-type foundations, an allowable skin friction of 250 pounds per square foot may be used. Pole foundations should have a minimum embedment of 30 inches below adjacent grades. For cast-in-place pole-type foundations, the vertical end bearing pressure should be neglected.

3.5 Caisson Design

All caissons, if any, should have a minimum of 5 feet embedment into competent fill materials. An average skin friction value of 250 pounds per square foot may be utilized to calculate the axial capacity of caissons. The lateral capacity of caissons may be computed using a value of 290 psf/ft but should not exceed 4,400 psf/ft for level conditions. For caissons near the existing descending slope with passive envelope impacted by the slope, the passive pressure should be limited to 170 psf/ft. Passive resistance may be doubled for isolated piles/caissons spaced a minimum of 3 diameters apart center-to-center. The allowable bearing pressure (both axial and lateral) may be increased by one-third for wind or seismic loading. Other minimum footing dimensions should be provided by the Structural Engineer and should comply with Table 1809.7 of the 2022 CBC.

Caissons should be designed in accordance with ACI recommendations and applicable building code requirements. The accepted criteria for caisson installation are detailed below:

- Caissons should be constructed as pre-drilled cast-in-place elements. A representative of the geotechnical consultant should be present during drilling of all caisson excavations in order to verify proper embedment and to geotechnically review appropriate drilling methods.
- Caisson excavations should be cleaned of loose soil, cuttings and groundwater and should be reviewed by the project geologist prior to placement of steel or concrete.
- No caisson boring shall be excavated within 6 feet from the nearest edge of a completed caisson unless the completed caisson has been filled with concrete for more than 24 hours.

3.6 Retaining Walls Design and Lateral Earth Pressures

Recommendations for lateral earth pressures for permanent retaining walls and structures with approved onsite drained soils and above the groundwater table are as follows:

Conditions	*Level (pcf)*	*2:1 Sloping*
Active	40	60
At-Rest	65	85
Passive	290	170 (sloping down)

These parameters are based on a soil internal friction angle of 25 degrees, a cohesion of 100 pounds per square foot (psf) and soil unit weight of 110 pcf.

To design an unrestrained retaining wall, such as a cantilever wall, the active earth pressure may be used. For a restrained retaining wall, the at-rest pressure should be used. Passive pressure is used to compute lateral soils resistance developed against lateral structural movement. The passive pressures provided above may be increased by one-third for wind and seismic loads. The passive resistance is taken into account only if it is ensured that the soil against embedded structure will remain intact with time. Future landscaping/planting and improvements adjacent to the retaining walls should also be taken into account in the design of the retaining walls. Excessive soil disturbance, trenches (excavation and backfill), future landscaping adjacent to footings and over-saturation can adversely impact retaining structures and result in reduced lateral resistance.

For sliding resistance, the friction coefficient of 0.30 may be used at the concrete and soil interface. The coefficient of friction may be increased by one-third for wind and seismic loading. The retaining walls may also need to be designed for additional lateral loads if other structures or walls are planned within a 1H:1V projection.

If slopes above the retaining walls are relatively minor (in height), the additional load associated with the soil above the retaining wall and within the active wedge may be calculated as a **surcharge load** and applied to the retaining wall using a coefficient of active pressure (k_a) of 0.48.

The seismic lateral earth pressure for walls retaining more than 6 feet of soil may be estimated to be an additional 16 pcf for active and at-rest conditions. The earthquake soil pressure has a triangular distribution and is added to the static pressures. For the active and at-rest conditions, the additional earthquake loading is zero at the top and maximum at the base. The seismic lateral earth pressure does not apply to walls retaining less than, or equal to, 6 feet of soil (2022 CBC Section 1803.5.12).

Drainage behind walls retaining more than 30 inches of soil should also be provided in accordance with the attached Figure 4. Specific drainage connections, outlets and avoiding open joints should be considered for the retaining wall design.

3.7 Seismic Design Parameters

The following table summarizes the seismic design criteria for the subject site. The seismic design parameters are developed in accordance with ASCE 7-16 and 2022 CBC. Please note that, considering the proposed structures and anticipated structural periods, site-specific ground-motion hazard analysis was not performed for the site. Per Supplement 3 of ASCE 7-16, the value of S_{M1}, and therefore S_{D1}, have been increased by 50 percent. The seismic response coefficient, Cs, should be determined per the parameters provided below and using equation 12.8-2 of ASCE 7-16.

Selected Seismic Design Parameters from 2022 CBC/ASCE 7-16	*Seismic Design Values*	*Reference*
Latitude	33.5946 North	
Longitude	-117.7243 West	
Controlling Seismic Source	San Joaquin Hills	USGS, 2024
Site Class per Table 20.3-1 of ASCE 7-16	D	
Spectral Acceleration for Short Periods (Ss)	1.218 g	SEA/OSHPD, 2024
Spectral Accelerations for 1-Second Periods (S_1)	0.438 g	SEA/OSHPD, 2024
Site Coefficient F_a, Table 11.4-1 of ASCE 7-16	1.013	SEA/OSHPD, 2024
Site Coefficient F_v, Table 11.4-2 of ASCE 7-16	1.862	
Design Spectral Response Acceleration at Short Periods (S_{DS}) from Equation 11.4-4 of ASCE 7-16	0.822 g	SEA/OSHPD, 2024
Design Spectral Response Acceleration at 1-Second Period (S_{D1}) from Equation 11.4-4 of ASCE 7-16 (Includes 50% increase per Supplement 3)	0.816 g	
T_S, S_{D1} /S_{DS} 11.4.6 of ASCE 7-16	0.992 sec	
T_L, Long-Period Transition Period	8 sec	SEA/OSHPD, 2024
Peak Ground Acceleration Corrected for Site Class Effects (PGA_M) from Equation 11.8-1 of ASCE 7-16	0.566 g	SEA/OSHPD, 2024
Seismic Design Category, Section 11.6 of ASCE 7-16	D	SEA/OSHPD, 2024

3.8 Slope Stability and Slope Setback

No significant modifications to the existing fill slope along the eastern property line are planned as part of this project. The existing slope is composed of compacted artificial fill materials and the proposed improvements are not anticipated to adversely impact the slope. Based on our slope stability analysis (Appendix E), the existing slope was found to be grossly stable. In general, slopes are considered susceptible to surficial instability in the form of erosion, raveling, and slumping. Special care should be taken to ensure that onsite runoff is controlled and directed offsite in a non-erosive manner and that site drainage, and slopes are maintained over the life of the project.

Footings for structures located above descending slopes should be set back from the slope face in accordance with the minimum requirements of the City of Aliso Viejo and section 1808.7.1 of the 2022 CBC, whichever is greater. The setback distance is measured from the outside edge of the footing bottom along a horizontal line to the face of the slope.

The tables below summarize the minimum setback criteria for structures above descending slopes:

Case A – Building and Retaining Wall Footings Above Descending Slopes	
Slope Height [H] (feet)	*Minimum Setback from Slope face (feet)*
Less than 10	5
10 to 20	½ * H
20 to 30	10
Greater than 30	⅓ * H (maximum of 40')

Case B – Freestanding Wall Footings Above Descending Slopes	
Slope Height [H] (feet)	*Minimum Setback from Slope face (feet)*
Less than 10	5
10 to 20	½ * H
Greater than 20	Maximum of 10

For freestanding walls and other structures that are sensitive to lateral movement (e.g., smooth stucco finish, glass screens, etc.), SA GEO recommends that the structural setback requirements in accordance with Case A above be followed or that additional design measures be used to help control the potential for cracking and displacements. Otherwise, typical freestanding walls may have a setback in accordance with Case B.

3.9 Corrosivity

Soluble sulfates exposure in the onsite soils should be classified as "S2" per Table 19.3.1.1 of ACI-318-14. Structural concrete elements in contact with soil include footings and building slabs-on-grade. The flatwork and sidewalk concrete are typically not considered structural elements. Concrete mix for structural elements should be based on the "S2" soluble sulfate exposure class of Table 19.3.2.1 in ACI-318-14. Other ACI guidelines for structural concrete are recommended. Also, onsite soils are anticipated to be corrosive to metals.

3.10 Expansion Potential

At the completion of grading, we anticipate that onsite soils will have "High" expansion potential. The geotechnical recommendations provided in this report including the design parameters for foundations, slab-on-grade and flatwork improvement should be implemented during design and construction. Updated recommendations will be provided upon additional testing at the completion of grading at the site and as needed.

Homeowners and their design/construction team should be familiar with the recommendations in this report as well as principles described in a useful reference published by the California Geotechnical Engineers Association (CalGeo), titled, "Coexisting with Expansive Soil: An Informational Guide for Homeowners." This free booklet can be downloaded at www.calgeo.org.

3.11 Interior Slab Moisture Mitigation

In addition to geotechnical and structural considerations, the project owner should also consider interior moisture mitigation when designing and constructing slabs-on-grade.

The intended use of the interior space, type of flooring, and the type of goods in contact with the floor may dictate the need for, and design of, measures to mitigate potential effects of moisture emission from and/or moisture vapor transmission through the slab. Typically, for human occupied structures, a vapor retarder or barrier is recommended under the slab to help mitigate moisture transmission through slabs. The most recent guidelines by the American Concrete Institute (ACI 302.1R-04) suggest that the vapor retarder be placed directly under the slab (no sand layer). However, the location of the vapor retarder may also be subject to the builder's past successful practice. Placement of 1 or 2 inches of sand over the moisture retardant has been common practice by builders in southern California. Specifying the strength of the retarder to resist puncture and its permeance rating is important. These qualities are not necessarily a function of the retarder thickness. A minimum of 10-mil is typical but some materials, such as 10-mil polyethylene ("Visqueen"), may not meet the desired standards for toughness and permeance.

Vapor retarders, when used, should be installed in accordance with standards such as ASTM E 1643 and/or those specified by the manufacturer.

Concrete mix design and curing are also significant factors in mitigating slab moisture problems. Concrete with lower water/cement ratios results in denser, less permeable slabs that also "dry" faster with regard to when flooring can be installed (reduced moisture emissions quantities and rates). Rewetting of the slab following curing should be avoided since it can result in additional drying time required prior to flooring installation. Proper concrete slab testing prior to flooring installation is also important.

Concrete mix design, the type and location of the vapor retarder should be determined in coordination with all parties involved in the finished product, including the project owner, architect, structural engineer, geotechnical consultant, concrete subcontractors, and flooring subcontractors.

3.12 Exterior Concrete

The sidewalk, patio slabs, driveways and other flatwork elements should be at least 4 inches thick. Driveway approaches should be a minimum of 6 inches thick. We recommend that the concrete flatwork be reinforced with No. 3 bars be placed at 24 inches on center both ways. Concrete slabs should be provided with construction or weakened plane control joints at a maximum spacing of 6 feet. The control joints should have a thickness that is ¼ of the total concrete thickness. Upon the placement and compaction of subgrade soils (per Section 3.2 of these recommendations), the upper 18 inches of the subgrade soils should be pre-saturated to 130 percent of optimum moisture content prior to placement of concrete and reinforcement. We also recommend that 2 to 4 inches of granular materials/aggregate base be placed over the compacted subgrade prior to placement of reinforcement and concrete.

For exterior slabs, the use of a granular sublayer is primarily intended to facilitate presaturation and subsequent construction by providing a better working surface over the saturated soil. It also helps retain the added moisture in the native soil in the event that the slab is not placed immediately.

Exterior concrete elements such as curb and gutter, driveways, sidewalks, and patios are susceptible to lifting and cracking when constructed over expansive soils. With expansive soils, the impacts to flatwork/hardscape can be significant, generally requiring removal and replacement of the affected improvements. Please also note that reducing concrete problems is often a function of proper slab design, concrete mix design, placement, and curing/finishing practices. Adherence to guidelines of the American Concrete Institute (ACI) is recommended. Also, the amount of post-construction watering, or lack thereof, can have a very significant impact on the adjacent concrete flatwork.

On projects with expansive soils, additional measures such as thickened concrete edges/footings, subdrains and/or moisture barriers should be considered where planter or natural areas with irrigation are located adjacent to the concrete improvements. Design and maintenance of proper surface drainage is also very important. If the concrete will be subject to heavy loading from cars/trucks or other heavy objects, thicker pavement section will be required the design of which should be performed by the geotechnical consultant, as needed.

The above recommendations typically are not applied to curb and gutter but should be considered in areas with highly expansive soils.

3.13 Preliminary Asphalt Concrete Pavement Design

Final structural pavement sections should be based on R-value testing after the completion of grading and in accordance with city of Aliso Viejo requirements. Based on an R-value of 5 and estimated traffic indices (TIs), we recommend the following preliminary pavement sections:

Street Location	***Estimated TIs***	***Pavement Section***
Parking Stalls	TI – 4.0	3 inches of AC / 6 inches of AB
General Drives	TI – 5.5	4 inches of AC / 10 inches of AB
AC = Asphalt Concrete, AB = Aggregate Base		

Please note that for two-stage paving operations, we recommend that the final AC cap be a minimum of 0.10 foot thick and the base AC course have a minimum thickness of 0.25 foot.

If pavement repair is needed within the adjacent streets, the section should match the existing section and follow standard City/County guidelines for trench/pavement repair. The new pavement section should at minimum consist of 4 inches of AC over 10 inches of AB.

Asphalt concrete pavement should be placed in accordance with the requirements of Sections 301 and 302 of the Standard Specifications of Public Works Construction (the Greenbook). Prior to construction of pavement sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in-place to a minimum of 90 percent relative compaction (per ASTM D1557). Subgrade should be firm prior to AB placement.

AB materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of any deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557). Asphalt concrete should also be compacted to a minimum relative compaction of 95 percent.

Unpaved median and parkway areas should be provided with vertical moisture barriers.

3.14 Vehicular PCC Pavements

For trash enclosures, we recommend 6 inches of PCC reinforced with No. 4 rebar at 18 inches on-center, both ways, over 4 inches of aggregate base placed over compacted subgrade. For parking stalls, the section may consist of 4 inches of PCC reinforced with No. 4 rebar at 18 inches on-center, both ways, over 4 inches of aggregate base over compacted subgrade.

The subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction (per ASTM D1557).

Aggregate base materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of any deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557).

3.15 Concrete Paver Section

For concrete pavers within **pedestrian** walkways, we recommend 60-millimeter-thick concrete pavers over approximately 1 inch of sand, over a minimum of 6 inches of AB, over compacted subgrade. This should also accommodate the rare maintenance cart or light truck that might drive up on these areas.

For concrete pavers within **vehicular** drive areas, if any, we recommend 80-millimeter-thick concrete pavers over 6 inches of concrete reinforced with No. 3 rebar at 24 inches on-center, over 4 inches of AB. Alternatively, the concrete low pour slab may be replaced with a minimum of 15 inches of AB over compacted subgrade; or 12 inches of AB over a layer of geotextile (e.g., Mirafi 600X or equivalent), over compacted subgrade.

A concrete band along the perimeter of the pavers should be provided for lateral restraint. The concrete band should, at minimum, be 12 inches deep and deepened to below the depth of disturbed soil, if adjacent to landscape/planter areas.

Also, a drainage system consisting of a 2-inch PVC drainage pipe should be installed at the low end of the concrete low pour at 10-foot intervals through the slab and filled with pea gravel. The PVC drainage pipe should drain to a minimum of 6-inch-diameter by 12-inch-deep drain pit filled with pea gravel below the pipe. The paver surfaces should slope away from structures a minimum of 2 percent. The concrete underlayment for the drive areas should be provided with weakened plane joints at maximum 6-foot intervals. If the pavers are to be set in mortar or are underlain with AB, this drainage system is not required.

Prior to construction of the paver sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction (per ASTM D1557). The upper 18 inches of subgrade for pedestrian walkway and patio areas should then be presaturated to 130 percent of optimum moisture content. Subgrade for vehicular pavers need not be pre-saturated.

Aggregate base materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557).

3.16 Trench Excavation and Backfill

Excavations should be performed in accordance with the requirements set forth by Cal/OSHA Excavation Safety Regulations (Construction Safety Orders, Section 1504, 1539 through 1547, Title 8, California Code of Regulations). In general, onsite soils may be classified as Type "B". Cal/OSHA regulations indicate that, for workmen in confined conditions, the steepest allowable slopes in Type "B" soils are 1:1. Locally, Type "C" soils may be encountered (saturated soils, seepage) and require slope layback of 1.5H:1V (horizontal:vertical). These laybacks apply to excavations 20 feet deep or less. Where there is no room for these layback slopes, we anticipate that shoring will be necessary. Adequate shoring (i.e., shields) should be provided, as deemed necessary. The soils within the adjacent streets are anticipated to be similar to onsite soils. Excavations should be reviewed periodically by the contractor's qualified person to confirm compliance with Cal/OSHA requirements.

Onsite soils should be suitable for use as trench backfill with the exception of wet/saturated materials, if encountered. Utility trench backfill should be in accordance with City of Aliso Viejo, County of Orange and/or the governing jurisdiction's specifications. Backfill materials should be compacted to a minimum of 90 percent relative compaction (per ASTM D1557). Rocks greater than 3 inches in largest diameter should generally not be used as trench backfill unless approved by the agency and geotechnical consultant of record. Excavation and backfilling of HDPE pipes (if any) should be in accordance with the manufacturer’s requirement and the Greenbook. Select granular backfill (i.e., clean sand with SE 30 or better) may be used in lieu of native soils but should also be compacted or densified with water jetting and flooding.

Trenches excavated next to structures and foundations should also be properly backfilled and compacted to provide full lateral support and reduce settlement potential.

3.17 Groundwater

Groundwater was encountered during our subsurface exploration at a depth of 55 feet in Boring H-4 (within Niguel Formation). While some saturated soil may be encountered during grading and/or utility trench excavation, we do not anticipate significant seepage or that mitigation measures will be necessary. In general, groundwater is anticipated to remain more than 20 feet below the proposed building foundations. However, shallow, perched water/seepage may occur on an annual and seasonal basis as a result of rainfall, irrigation and/or seepage from adjacent properties.

3.18 Stormwater Infiltration

As discussed previously (Section 2.7), considering the artificial fill thickness, and bedrock directly below the fill materials, and presence of fine-grained expansive soils, stormwater infiltration at the site is not feasible from a geotechnical viewpoint. Other methods of filtration/treatment should be evaluated by the project civil engineer.

3.19 Surface Drainage and Irrigation

Maintaining adequate surface drainage, proper disposal of run-off water, and control of irrigation will help reduce the potential for future moisture-related problems and differential movements from soil heave/settlement.

Surface drainage should be carefully taken into consideration during grading, landscaping, and building construction. Positive surface drainage should be provided to direct surface water away from structures and slopes and toward the street or suitable drainage devices. Ponding of water adjacent to the structures should not be allowed. Buildings should have roof gutter systems and the run-off should be directed to parking lot/street gutters by area drainpipes or by sheet flow over paved areas. Paved areas should be provided with adequate drainage devices, gradients, and curbing to prevent run-off flowing from paved areas onto adjacent unpaved areas.

Considering the climatic conditions in southern California and provided that the recommendations included in this report are implemented during grading and construction, a minimum two-percent slope away from structures is considered acceptable and in substantial compliance with the 2022 CBC. Also, swales with one-percent slopes are acceptable from a geotechnical standpoint and are common practice in this locale.

Construction of planter areas immediately adjacent to structures should be avoided if possible. If planter boxes are constructed adjacent to or near buildings, the planters should be provided with controls to prevent excessive penetration of the irrigation water into the foundation and flatwork subgrades. Provisions should be made to drain excess irrigation water from the planters without saturating the subgrade below or adjacent to the planters. Raised planter boxes may be drained with weepholes. Deep planters (such as palm tree planters) should be drained with below-ground, water-tight drainage lines connected to a suitable outlet. Moisture barriers should also be considered.

It is also important to maintain a consistent level of soil moisture, not allowing the subgrade soils to become overly dry or overly wet. Properly designed landscaping and irrigation systems can help in that regard.

3.20 Slope Maintenance, Lot Drainage, and Erosion Control

Maintenance of proper pad drainage, the design and construction of property improvements in accordance with sound engineering practices, and proper maintenance of landscaping, including regular pad and slope irrigation, should be performed. Irrigation should not be excessive or sporadic; maintaining a relatively constant level of soil moisture around structures and improvements is important. Oversteepening of slopes should be avoided.

Planters and landscape areas adjacent to structures should be avoided or provided with measures to mitigate the potential for water getting under the foundations and slabs. Water should not be allowed to pond and drainage should be maintained away from structures and tops of slopes.

Establishing and maintaining a rodent-control program is also recommended to reduce surficial slope deterioration often associated with rodent burrowing. The improvements at or near the tops of slopes may be subject to varying degrees of slope-creep related movements and should be designed with that in mind, meeting the setback criteria discussed in this report.

3.21 Additional Subsurface Exploration and Laboratory Testing

Additional subsurface exploration during the design phase of the project is not considered necessary unless significant plan changes occur. Additional laboratory testing should be performed during and upon completion of the grading to confirm/update the design parameters provided herein.

3.22 Review of Future Plans

The project grading, foundation, street improvement, wall, and landscape plans should be reviewed and accepted by the geotechnical consultant prior to grading and construction. Additional recommendations should be provided upon the review of the project plans and as needed.

3.23 Observation and Testing during Grading and Construction

Geotechnical observation and testing should be performed by SA GEO during the following phases of grading and construction:

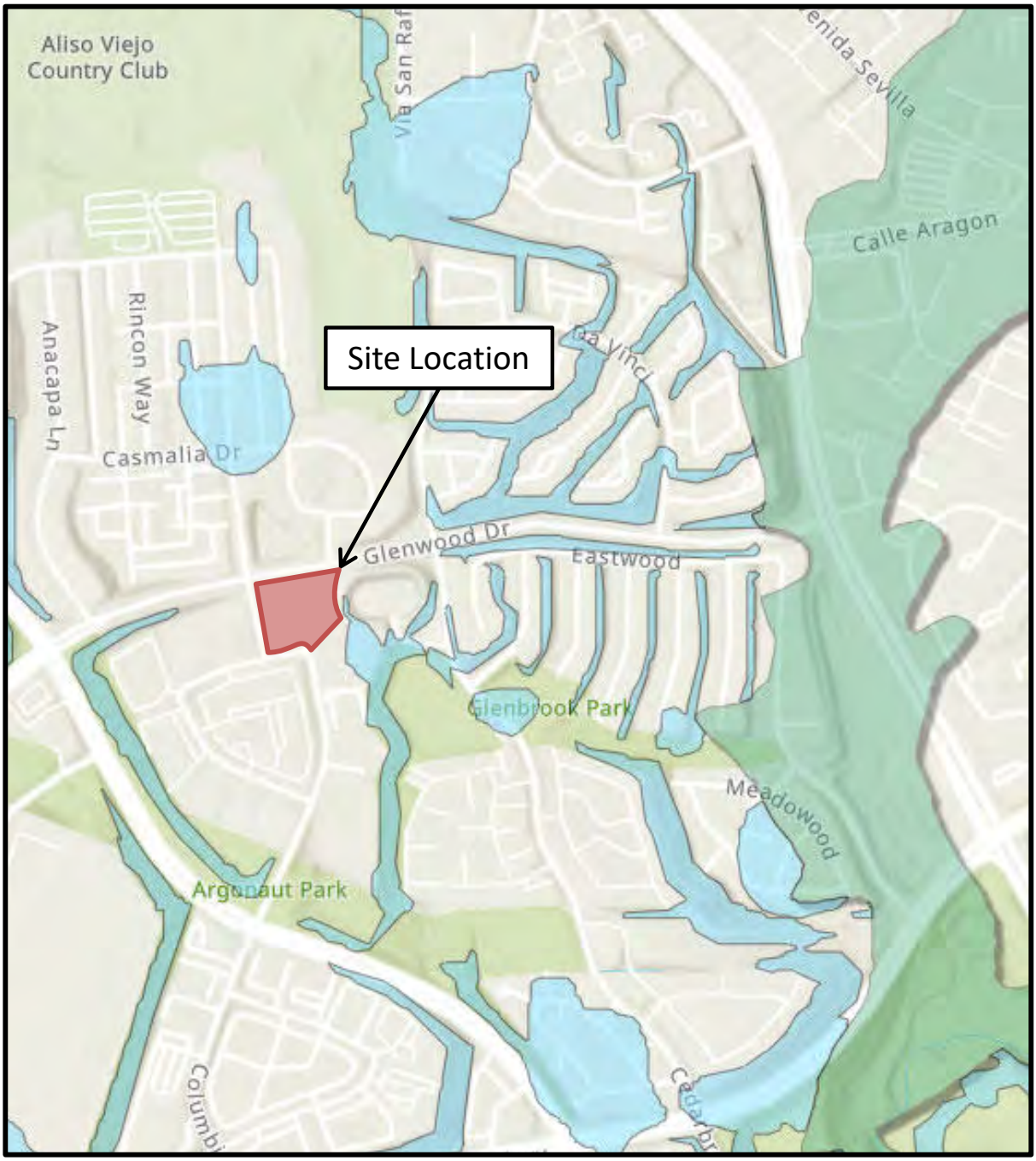
- During site demolition, preparation and clearing;
- During excavations performed for the remedial grading and to relocate or remove existing underground improvements;
- During earthwork, including observation and acceptance of remedial removal bottoms and fill placement, including import material (if any);
- Following the completion of grading, in order to verify soil properties for foundations, slab-on-grade and pavements;
- Upon completion of any foundation or structural excavation, prior to pouring concrete;

- During slab and flatwork subgrade preparation prior to pouring of concrete;
- During placement of backfill for utility trenches;
- During construction of stormwater filtration devices;
- During placement of backfill for retaining structures;
- During installation and backfill of subdrainage systems; and
- When any unusual soil conditions are encountered.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of our client, Meritage Homes, within the scope of services requested for the subject property described herein. This report or its contents should not be used or relied upon for other projects or purposes, or by other parties without the acknowledgement of SA GEO and the consultation of a geotechnical professional. The means and methods used by SA GEO for this study are based on local geotechnical standards of practice, care, and requirements of governing agencies. No warranty or guarantee, expressed or implied, is given.

Our findings, conclusions, and recommendations are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can vary from point to point, can be very different in-between exploration points, and can also change over time. Our conclusions and recommendations are, by nature, preliminary and subject to verification and/or modification during grading and construction when more subsurface data is exposed.

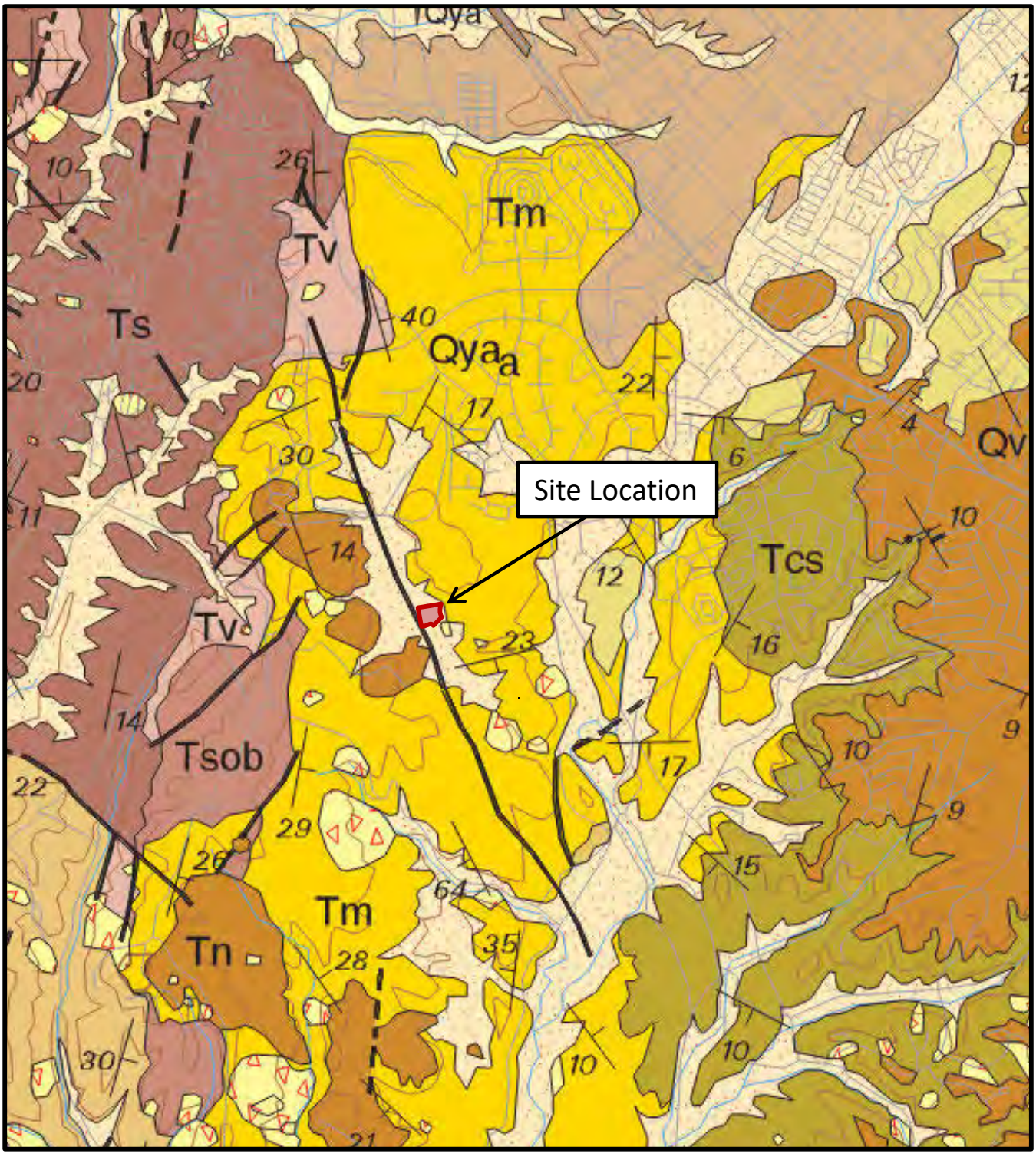


Source: Seismic Hazard Zones, San Juan Capistrano Quadrangle (CDMG, 2001b)

Liquefaction
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resource Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resource Code Section 2693(c) would be required.

Site Location and Seismic Hazard Map		
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 1	S/A



Source: Geologic Map of the San Bernardino and Santa Ana 30' X 60' Quadrangles (USGS, 2006)

Regional Geologic Map		
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 2	S/A



Source: Fault Activity Map of California (Jennings and Bryant, 2010)

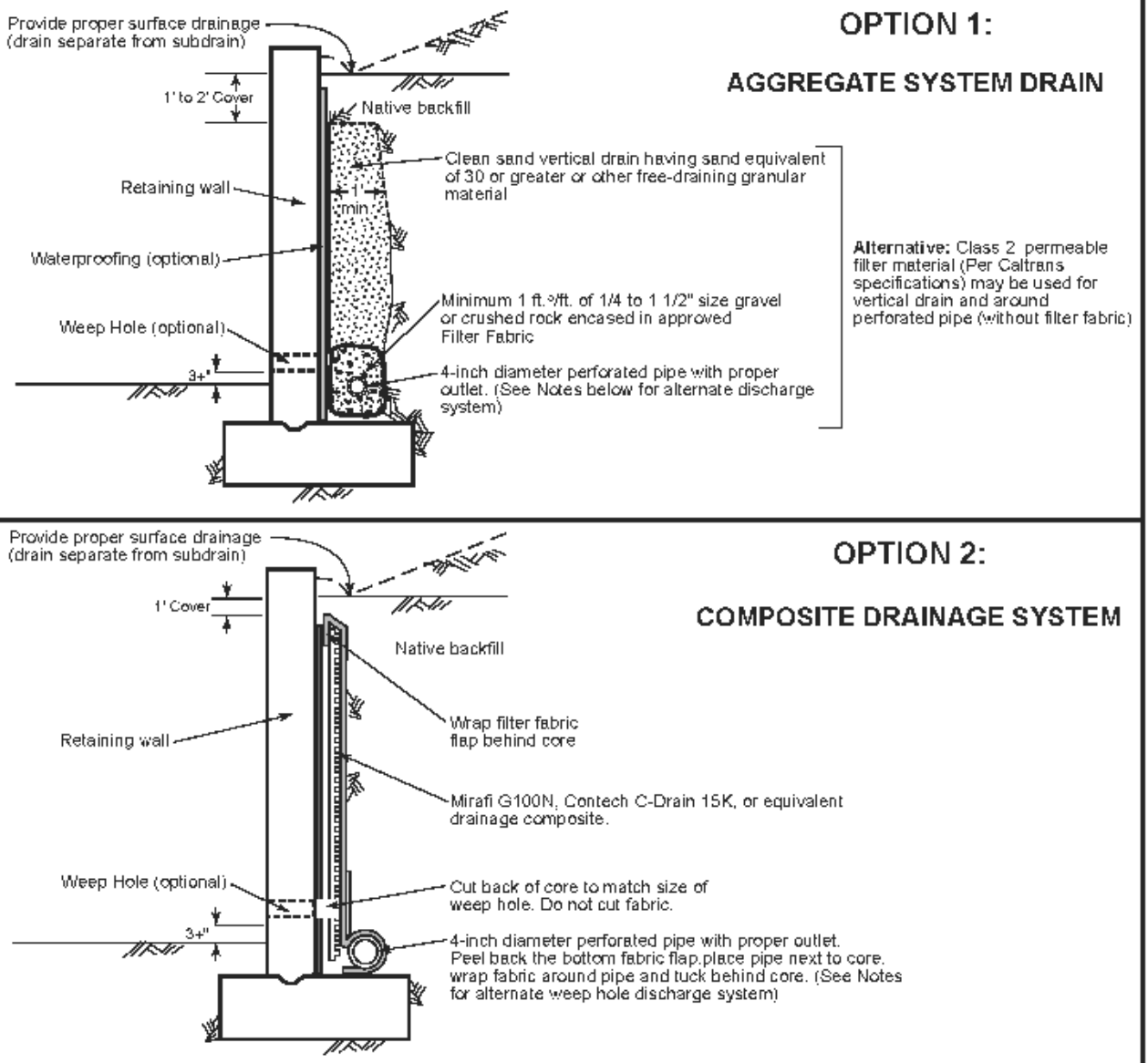
Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissnce nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

Regional Fault Map	
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 3



NOTES:

1. PIPE TYPE SHOULD BE PVC OR ABS, SCHEDULE 40 OR SDR35 SATISFYING THE REQUIREMENTS OF ASTM TEST STANDARD D1527, D1785, D2751 , OR D3034.
2. FILTER FABRIC SHALL BE APPROVED PERMEABLE NON-WOVEN POLYESTER, NYLON, OR POLYPROPYLENE MATERIAL.
3. DRAIN PIPE SHOULD HAVE A GRADIENT OF 1 PERCENT MINIMUM.
4. WATERPROOFING MEMBRANE MAY BE REQUIRED FOR A SPECIFIC RETAINING WALL (SUCH AS A STUCCO OR BASEMENT WALL).
5. WEEP HOLES MAY BE PROVIDED FOR LOW RETAINING WALLS (LESS THAN 3 FEET IN HEIGHT) IN LIEU OF A VERTICAL DRAIN AND PIPE AND WHERE POTENTIAL WATER FROM BEHIND THE RETAINING WALL WILL NOT CREATE A NUISANCE WATER CONDITION. IF EXPOSURE IS NOT PERMITTED, A PROPER SUBDRAIN OUTLET SYSTEM SHOULD BE PROVIDED.
6. IF EXPOSURE IS PERMITTED, WEEP HOLES SHOULD BE 2-INCH MINIMUM DIAMETER AND PROVIDED AT 25-FOOT MAXIMUM SPACING ALONG WALL. WEEP HOLES SHOULD BE LOCATED 3+ INCHES ABOVE FINISHED GRADE.
7. SCREENING SUCH AS WITH A FILTER FABRIC SHOULD BE PROVIDED FOR WEEP HOLES/OPEN JOINTS TO PREVENT EARTH MATERIALS FROM ENTERING THE HOLES/JOINTS.
8. OPEN VERTICAL MASONRY JOINTS (I.E., OMIT MORTAR FROM JOINTS OF FIRST COURSE ABOVE FINISHED GRADE) AT 32-INCH MAXIMUM INTERVALS MAY BE SUBSTITUTED FOR WEEP HOLES.
9. THE GEOTECHNICAL CONSULTANT MAY PROVIDE ADDITIONAL RECOMMENDATIONS FOR RETAINING WALLS DESIGNED FOR SELECT SAND BACKFILL.

Retaining Wall Drainage Detail

S/A 2178

Figure 4

Appendix A

APPENDIX A

REFERENCES

California Division of Mines and Geology (CDMG), 2001a, Seismic Hazard Zone Report for the San Juan Capistrano 7.5-Minute Quadrangle, Orange County, California, Seismic Hazard Zone Report 053.

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Structural Engineers Association/Office of Statewide Health Planning and Development (SEA/OSHPD), 2024, U.S. Seismic Design Maps, web site address: https://seismicmaps.org/; Date Accessed: April 26, 2024.

U.S. Geological Survey, 2006, Geologic Map of the San Bernardino and Santa Ana 30' X 60' Quadrangles, California, dated 2006, Open File Report 2006-1217.

APPENDIX A (Cont'd)

REFERENCES

U.S. Geological Survey, 2024, Unified Hazard Tool, NSHM 2014 Dynamic Deaggregation Program; web site address: https://earthquake.usgs.gov/hazards/interactive/; Date Accessed: April 26, 2024.

Appendix B

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	*GRAVEL AND GRAVELLY SOILS* MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	*CLEAN GRAVELS* (LITTLE OR NO FINES)	**GW**	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	**GM**	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	*CLEAN SANDS* (LITTLE OR NO FINES)	**SW**	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	**SM**	SILTY SANDS, SAND - SILT MIXTURES
			SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	*SILTS AND CLAYS*	LIQUID LIMIT LESS THAN 50	**ML**	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			**PT**	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Dual symbols are used to indicate gravels or sand with 5-12% fines and soils with fines classifying as CL-ML. Symbols separated by a slash indicate borderline soil classifications.

Sampler and Symbol Descriptions

- Modified California sample (D-#)
- Standard Penetration Test (S-#)
- Shelby tube sample (T-#)
- Large bulk sample (B-#)
- Small bulk sample (SB-#)
- Approximate depth of groundwater during drilling
- Approximate depth of static groundwater

Note: Number of blows required to advance driven sample 12 inches (or length noted).

Laboratory and Field Test Abbreviations

AL	Atterberg limits (plasticity)
CC	Chemical Testing incl. Soluble Sulfate
CN	Consolidation
DS	Direct Shear
EI	Expansion Index
GS	Grain Size Analysis (Sieve, Hydro. and/or -No. 200)
MD	Maximum Density and Optimum Moisture
RV	Resistance Value (R-Value)
SE	Sand Equivalent
UU	Unconsolidated Undrained Shear Strength

Notes:

1. Soil classifications are based on the Unified Soil Classification System and include color, moisture, and relative density or consistency. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate. Bedrock descriptions are based on visual classification and include rock type, moisture, color, grain size, strength, and weathering.
2. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were drilled. They are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO LOG OF BORING

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: Groundwater Not Encountered.	
Comments:	

H-1

Total Depth Drilled (ft)	60.5
Approximate Ground Surface Elevation (ft)	445

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB			
0				**Artificial Fill (Af)**			B-1 @ 1-5' GS, AL, MD, EI, CC
	B-1						
	D-1	11	MH	@ 2.5': Mottled olive gray and olive brown clayey SILT, moist, medium stiff, iron staining, trace gravel, diatomaceous.	52.3	68.6	CN
5	D-2	18	MH	@ 5': Mottled olive gray to olive brown clayey SILT, moist, stiff, iron staining, trace caliche, trace gravel, diatomaceous.	47.1	74.1	DS
	D-3	21	MH	@ 7.5': Mottled olive gray and bluish gray clayey SILT, moist, stiff, iron staining, trace gravel and debris, diatomaceous.	47.6	72.9	
10	D-4	14	MH	@ 10': Mottled pale olive gray and pale olive brown clayey SILT, moist, stiff, iron staining, trace caliche, trace gravel, debris, diatomaceous.	72.1	54.3	
15	D-5	17	MH	@ 15': Mottled pale olive gray and pale olive brown clayey SILT, very moist, very stiff, iron staining, trace caliche, diatomaceous.	71.3	57.4	CN
20	D-6	38	CL	@ 20': Mottled black and olive gray silty and fine sandy CLAY, very moist, very stiff to hard, trace organics.	10.9	116.2	
25	D-7	51	CL	@ 25': Mottled black and bluish gray silty/fine sandy CLAY, very moist, hard, trace organics.	13.5	108.3	
30							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	56	SC	@ 30': Mottled bluish gray and brownish gray clayey silty fine to medium SAND, very moist, dense, trace caliche nodules.	14.4	117.2	
35	D-9	28	CL	@ 35': Bluish gray to black silty/sandy CLAY, very moist to wet, very stiff, trace coarse gravel, diatomaceous.	47.7	72.1	
40	D-10	21	SC	@ 40': Gray clayey SAND, very moist, medium dense.	18.3	108.6	
45	D-11	27	SC	@ 45': Mottled gray and bluish gray clayey SAND, very moist, medium dense.	18.3	107.8	
50	D-12	24	MH	**Monterey Formation (Tm)** @ 50': Mottled olive gray and olive brown clayey/sandy SILTSTONE, very moist, very stiff, diatomaceous, minor interbeds of fine sandstone, well bedded, thinly bedded to laminated.	57.7	70.5	
55	D-13	22	MH	@ 55': Mottled olive gray and olive brown clayey/sandy SILTSTONE, wet, very stiff, diatomaceous, minor interbeds of fine sandstone, well bedded, thinly bedded to laminated, free water/seepage along bedding planes.	50.0	69.3	
60							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10”	Page 3 of 3
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30”)	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	50/ 5.5”	MH	@ 60’: Olive brown sandy SILTSTONE, wet, hard, moderately well bedded, thinly laminated, diatomaceous	66.7	59.2	
				Notes: Total Depth: 60.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
65							
70							
75							
80							
85							
90							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-2**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 1 of 2
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 41.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 442
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB			
0	B-1			**Artificial Fill (Af)**			B-1 @ 1-5' GS, AL
	D-1	18	MH	@ 2.5': Mottled olive gray and light gray clayey SILT, very moist, stiff, bedrock fragments, iron staining, diatomaceous.	59.3	63.7	
5	D-2	18	MH	@ 5': Mottled olive gray and light gray clayey SILT, very moist, stiff, bedrock fragments, iron staining, diatomaceous.	50.5	70.5	
	D-3	20	MH	@ 7.5': Mottled dark brown and olive gray clayey SILT, moist, stiff, bedrock fragments, diatomaceous.	58.6	65.8	
10	D-4	33	MH	@ 10': UPPER: Olive gray clayey SILT, moist, very stiff, bedrock fragments, diatomaceous.	46.4	74.2	
			SM	@ 10': LOWER: Pale yellowish brown silty fine to medium SAND, moist, medium dense.			
15	D-5	33	MH	@ 15': Light gray clayey SILT, very moist, very stiff, diatomaceous.	77.5	60.3	
20	D-6	35	MH	@ 20': Pale yellow clayey SILT, very moist, very stiff, diatomaceous.	67.6	55.5	
25	D-7	57	ML	**Monterey Formation (Tm)** @ 25': Pale yellow to white clayey SILTSTONE, very moist, hard, fractured.	26.7	96.9	
30							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-2**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 2 of 2
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 41.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 442
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	27	MH	@ 30': Pale yellow to yellowish brown clayey SILTSTONE, wet, very stiff, diatomaceous.	76.7	53.7	
35	D-9	24	MH	@ 35': Pale yellow to yellowish brown clayey SILTSTONE, wet, very stiff, diatomaceous.	77.7	52.4	
40	D-10	23	MH	@ 40': Reddish brown to olive gray clayey SILTSTONE, wet, very stiff, iron staining, diatomaceous.	86.7	51.1	
45				Notes: Total Depth: 41.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
50							
55							
60							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: Groundwater Not Encountered.	
Comments:	

H-3

Total Depth Drilled (ft)	81.5
Approximate Ground Surface Elevation (ft)	441

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
0				Surface: 4" AC, 8" AB			
				Artificial Fill (Af)			
	B-1						B-1 @ 1-5' GS
	D-1	24	MH	@ 2.5': Pale olive gray to gray clayey SILT, moist, very stiff, trace coarse sand and fine gravel, diatomaceous.	51.4	71.4	
5	D-2	16	MH	@ 5': Pale olive gray to white clayey SILT, very moist, stiff to very stiff, trace iron staining, diatomaceous.	80.3	51.9	CN
	D-3	15	MH	@ 7.5': Mottled olive gray and black clayey SILT with fine sand, very moist, stiff, diatomaceous.	67.3	66.0	
10	D-4	26	CL	@ 10': Mottled pale olive gray and black silty CLAY with fine sand, very moist to wet, very stiff to hard, diatomaceous.	37.7	86.0	
15	D-5	23	CL	@ 15': Mottled olive gray and black silty CLAY with fine sand, very moist to wet, very stiff, diatomaceous.	37.8	70.9	
20	D-6	22	MH	@ 20': Pale olive gray clayey SILT, very moist to wet, stiff, trace fine gravel, diatomaceous, bedrock fragments up to 3 inches in diameter.	75.8	54.0	
25	D-7	29	CL	@ 25': Mottled olive gray and black silty CLAY, very moist, very stiff, diatomaceous.	38.8	85.0	
30							

Log Of Boring

Meritage Homes
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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-3**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 81.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 441
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	39	CL	@ 30': UPPER: Mottled pale olive gray and white silty CLAY, very moist, very stiff, diatomaceous.	18.2	108.7	
			SM	@ 30': LOWER: Yellowish brown silty fine SAND, very moist, medium dense, bedrock fragments.			
35	D-9	35	CL	@ 35': UPPER: Mottled pale bluish gray and black silty CLAY, very moist, hard, slightly diatomaceous, trace gravel.	14.9	117.0	
			SM	@ 35': LOWER: Dark brown silty SAND, very moist, medium dense.			
40	D-10	32	MH	@ 40': Mottled bluish gray and dark gray clayey SILT with fine sand, very moist to wet, very stiff, diatomaceous.	58.2	65.1	
45	D-11	38	CL	@ 45': Mottled bluish gray and black fine sandy CLAY, very moist, very stiff.	15.1	110.8	
50	D-12	29	CL	@ 50': Mottled bluish gray and black fine sandy CLAY, wet, very stiff.	28.5	96.5	
55	D-13	45	CL	@ 55': Mottled bluish gray, yellowish brown, and black fine sandy CLAY, wet, hard, bedrock fragments.	24.9	103.6	
60							

Log Of Boring

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Proposed Residential Development
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Aliso Viejo, California

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-3**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 81.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 441
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	27	MH	@ 60': Mottled olive gray and gray clayey SILT, very moist, very stiff, diatomaceous.	54.0	66.2	
65	D-15	25	MH	@ 65': Mottled olive gray and gray clayey SILT, very moist to wet, very stiff, diatomaceous.	51.2	66.1	
70	D-16	13	MH	@ 70': UPPER: Mottled olive gray and gray clayey SILT, wet to saturated, stiff, diatomaceous.	65.7	66.5	
			ML	@ 70': LOWER: Dark brown to black SILT, very moist, stiff.			
75	D-17	88/ 11"	MH	**Monterey Formation (Tm)** @ 75': Dark olive brown to dark gray clayey SILTSTONE, wet, hard, laminated, diatomaceous.	68.0	55.8	
80	D-18	94/ 11"	MH	@ 80': Dark olive brown to dark gray clayey SILTSTONE, wet, hard, laminated, trace fine sand, diatomaceous.	63.6	58.8	
85				Notes: Total Depth: 81.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
90							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-4**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 1 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 76
Approximate Groundwater Depth: 55 feet.		**Approximate Ground Surface Elevation (ft)** 443
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB.			
0				**Artificial Fill (Af)**			
	B-1						B-1 @ 1-4' AL, EI, CC
	D-1	18	MH	@ 2.5': Mottled olive gray and pale gray clayey SILT, moist, stiff, trace caliche, diatomaceous.	61.4	62.3	DS
5	D-2	17	MH	@ 5': Mottled pale olive gray and white clayey SILT, moist, stiff, trace caliche, diatomaceous.	84.2	50.6	
	D-3	13	MH	@ 7.5': Mottled pale olive gray and white clayey SILT, very moist, stiff, trace caliche, diatomaceous.	77.1	51.4	
10	D-4	10	MH	@ 10': Mottled olive gray and white clayey SILT, very moist to wet, medium stiff, diatomaceous.	63.1	56.1	CN
15	D-5	40	CL	@ 15': Mottled dark brown and olive gray silty/fine sandy CLAY, very moist, very stiff.	14.5	110.7	
20	D-6	66	SC	@ 20': Olive gray clayey fine SAND, very moist, dense, trace fine gravel.	14.9	114.1	
25	D-7	31	SC	@ 25': Dark olive gray clayey fine to medium SAND, very moist, medium dense, trace fine gravel.	17.1	109.5	
30							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-4**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 76
Approximate Groundwater Depth: 55 feet.		**Approximate Ground Surface Elevation (ft)** 443
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	33	SC	@ 30': Mottled dark olive gray and black clayey fine SAND, very moist, medium dense.	13.8	115.3	
35	D-9	42	SC	@ 35': Mottled dark olive gray and black clayey fine SAND, very moist, dense.	13.4	117.9	
40	D-10	24	SC	@ 40': Mottled dark olive gray and black clayey fine SAND, very moist, medium dense, trace claystone fragments.	17.1	113.1	
45	D-11	32	SC	@ 45': Bluish gray clayey fine to medium SAND, very moist, medium dense, minor clean sand interbeds up to 0.25-inch thick.	16.1	108.3	
50	D-12	20	CL	@ 50': Black fine sandy CLAY, very moist to wet, stiff, minor clean sand interbeds up to 0.5-inch thick, grass/vegetation fragments.	21.5	103.1	
55	D-13	50/6"	SP	**Niguel Formation (Tn)** @ 55': Yellowish brown fine to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated. @ 55': Groundwater	19.8	101.9	
60							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-4**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 76
Approximate Groundwater Depth: 55 feet.		**Approximate Ground Surface Elevation (ft)** 443
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	90/ 9"	SP	@ 60': Yellowish brown fine to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated.	18.3	109.8	
65	D-15	50/ 6"	SP	@ 65': Yellowish brown medium to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated.	15.4	115.2	
70							
75	D-16	50/ 3.5"	SP-SM	@ 75': Yellowish brown to yellowish gray fine to coarse SANDSTONE with silt, saturated, very dense, micaceous, shell fragments, weakly indurated.	23.8	96.6	
80				Notes: Total Depth: 76.0 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
85							
90							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Appendix C

MATERIALS FINER THAN 75-µm (No. 200) SIEVE by WASHING
ASTM D1140

Client: SA Geotechnical, Inc
Project: 95 Argonaut
Project No.: 24059-01

HAI Project No.: SAG-24-018-2
Performed by: GA
Checked by: KL
Date: 5/6/2024

Boring No.	Sample No.	Depth (ft)	Sample Description (USCS)	Dry Soil before Wash + $W_{Container}$	Dry Soil after #200 Wash + $W_{Container}$	$W_{Container}$	Wt of soil retained on # 200 sieve	Initial wt of dry soil	**Soil % passing 200 sieve**
				g	g	g	g	g	**%**
H-1	B-1	0-5	Olive, Sandy Elastic Silt (MH)	520.19	329.13	221.19	107.94	299.00	**63.90**
H-2	B-1	0-5	Olive Gray, Elastic Silt with Sand (MH)	533.02	305.89	220.07	85.82	312.95	**72.58**
H-3	B-1	0-5	Olive Gray, Elastic Silt with Sand (MH)	466.67	288.21	222.20	66.01	244.47	**73.00**

Liquid Limit, Plastic Limit, and Plasticity Index of Soils

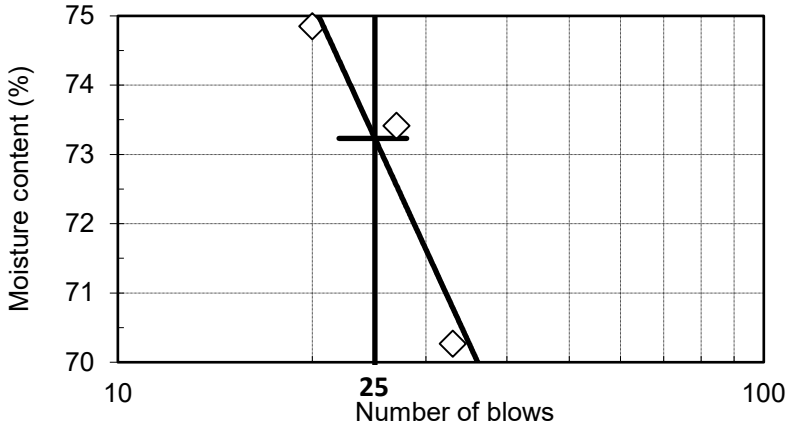
ASTM D4318

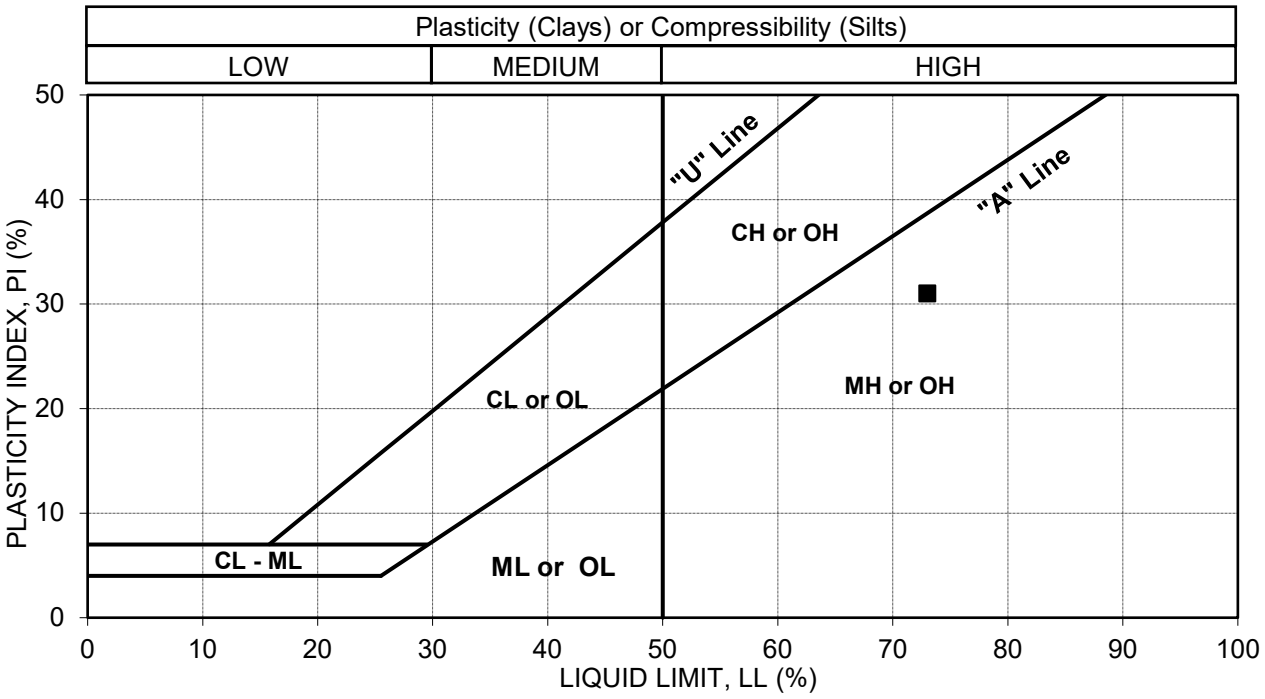
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**33**	**27**	**20**	-	-
Wt. of Wet Soil + Container	(g)	25.83	25.43	25.6	12.89	12.84
Wt. of Dry soil + Container	(g)	19.78	19.41	19.23	10.37	10.32
Wt. of Container	(g)	11.17	11.21	10.72	4.28	4.31
Water content	**(%)**	**70.3**	**73.4**	**74.9**	**41.4**	**41.9**

Liquid Limit (LL)	**73**
Plastic Limit (PL)	**42**
Plasticity Index (PI)	**31**
USCS	**MH**

Remarks:





Liquid Limit, Plastic Limit, and Plasticity Index of Soils

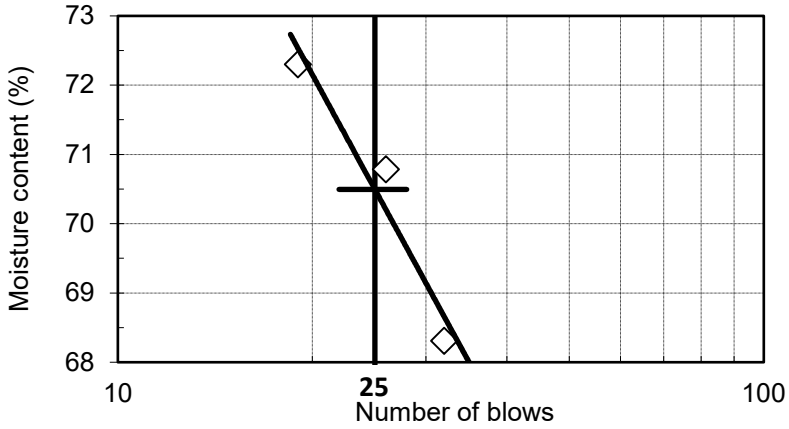
ASTM D4318

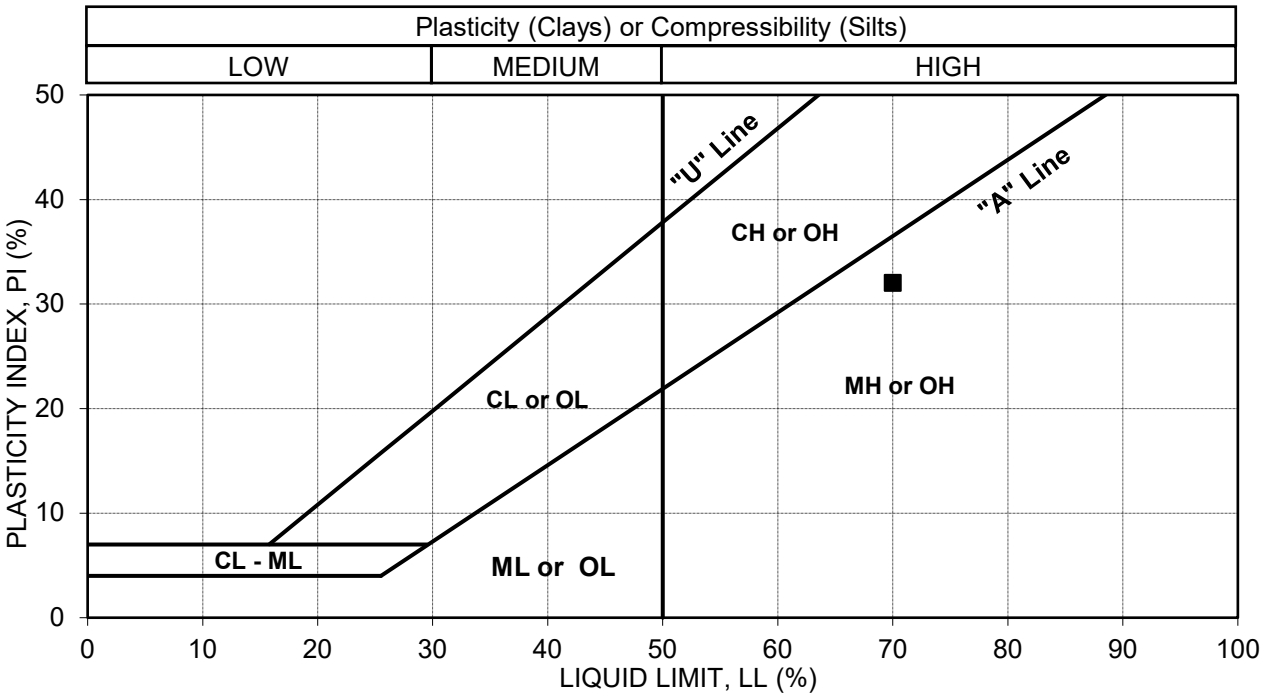
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-2	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**32**	**26**	**19**	-	-
Wt. of Wet Soil + Container	(g)	26.3	26.4	26.47	12.6	12.96
Wt. of Dry soil + Container	(g)	20.2	20.1	19.97	10.29	10.57
Wt. of Container	(g)	11.27	11.2	10.98	4.25	4.18
Water content	**(%)**	**68.3**	**70.8**	**72.3**	**38.2**	**37.4**

Liquid Limit (LL)	**70**
Plastic Limit (PL)	**38**
Plasticity Index (PI)	**32**
USCS	**MH**

Remarks:





Liquid Limit, Plastic Limit, and Plasticity Index of Soils

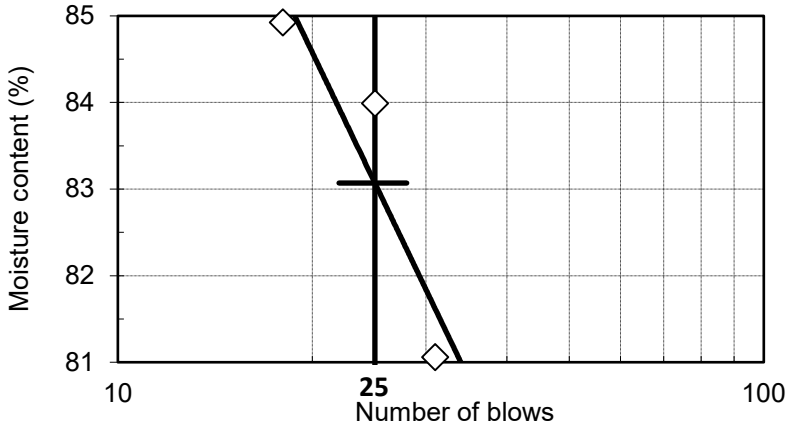
ASTM D4318

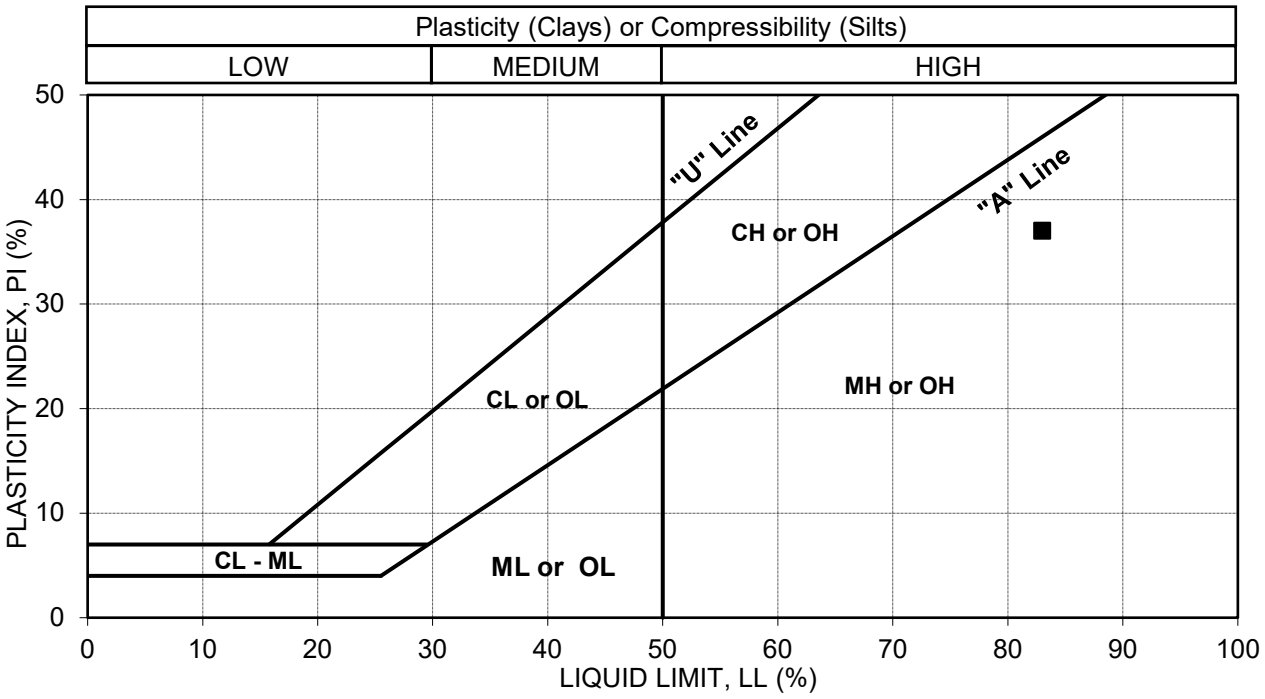
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**31**	**25**	**18**	-	-
Wt. of Wet Soil + Container	(g)	26.92	26.3	26.43	12.92	12.79
Wt. of Dry soil + Container	(g)	20.03	19.27	19.5	10.18	10.12
Wt. of Container	(g)	11.53	10.9	11.34	4.22	4.33
Water content	**(%)**	**81.1**	**84.0**	**84.9**	**46.0**	**46.1**

Liquid Limit (LL)	**83**
Plastic Limit (PL)	**46**
Plasticity Index (PI)	**37**
USCS	**MH**

Remarks:





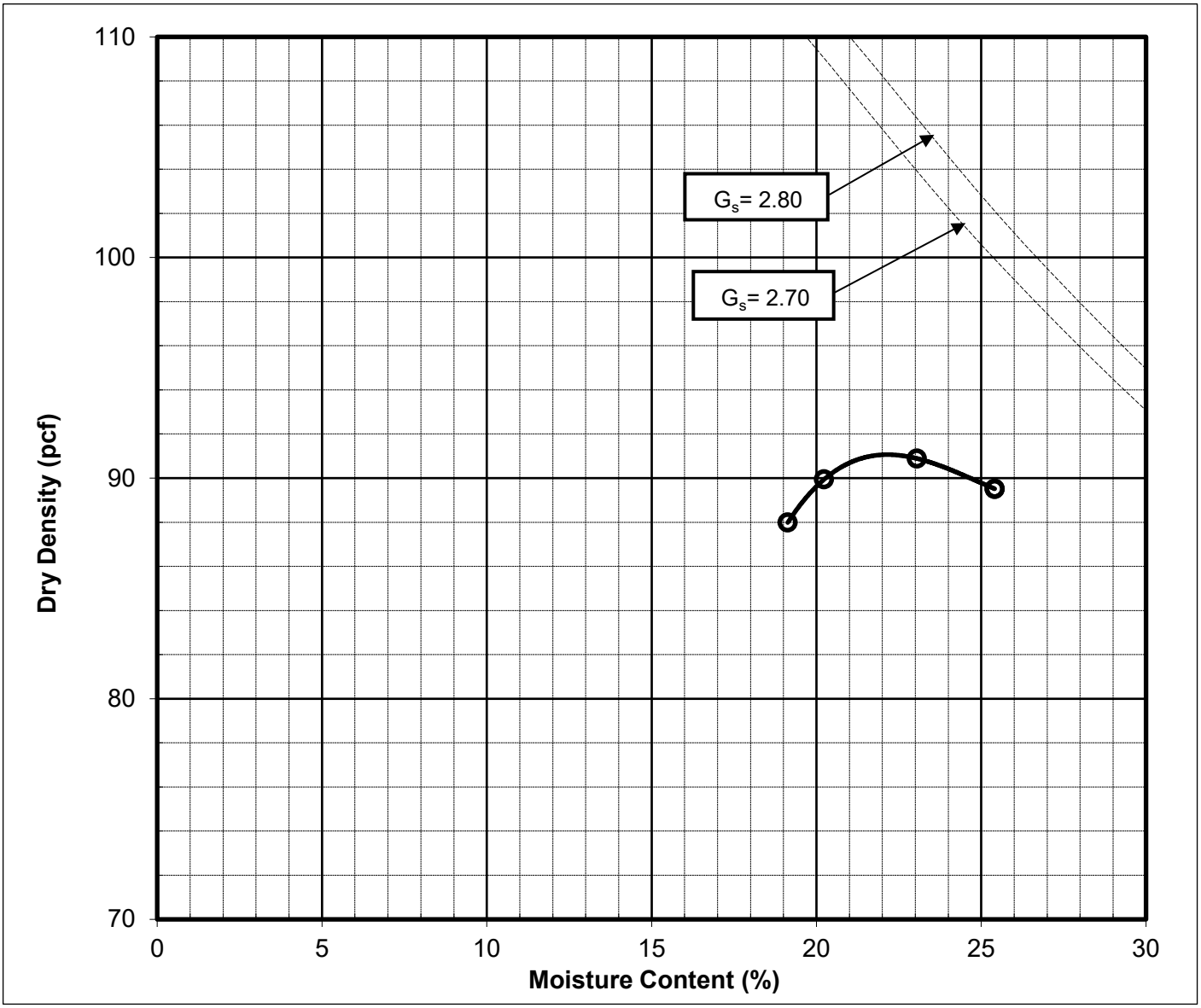
Compaction Characteristics of Soils Using Modified Effort

ASTM D1557

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring Number:	H-1	*Date:*	05/06/24
Sample Number:	B-1		
Depth (ft) :	0-5		
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Mold size (in)	4"
Procedure	B
Weight Retained on:	7.7
Remarks:	

Maximum Dry Density (pcf)	**91.1**
Optimum Moisture Content (%)	**11.7**
Corrected Maximum Dry Density (pcf)	**94.1**
Corrected Optimum Moisture Content (%)	**10.8**



EXPANSION INDEX

ASTM D4829

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-1	*Date:*	5/6/2024
Sample No.:	B-1		
Depth (ft):	0-5	*Apparatus No.:*	1
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Initial Specimen Info		
Wt. of wet soil + cont.	184.51	g
Wt. of dry soil + cont.	156.08	g
Wt. of container	11.29	g
Wt. of water	28.43	g
Wt. of dry soil	144.79	g
Moisture Content	**19.6**	**%**

Final Specimen Info		
Wt. of wet soil + cont.	594.84	g
Wt. of dry soil + cont.	472.51	g
Wt. of container	206.54	g
Wt. of water	122.33	g
Wt. of dry soil	265.97	g
Moisture Content	**46.0**	**%**

Wt. of wet soil + ring	528.85	g
Wt. of ring	206.54	g
Wt. of wet soil	322.31	g
Wet density of soil	98.8	pcf
Dry density of soil	82.6	pcf
Specific gravity of soil	2.68	-
Saturation	**51.4**	**%**

Date & Time	**Elapsed Time (min)**	**Dial Reading**	**Δh, Expansion**
5/17/2024 10:25	0	0	0
5/17/2024 10:35	10	0.0000	0
Add Distilled Water to Sample			
5/18/2024 10:25	1440	0.0909	0.0909

Expansion Index = **91** **High**

EXPANSION INDEX

ASTM D4829

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-4	*Date:*	5/6/2024
Sample No.:	B-1		
Depth (ft):	0-5	*Apparatus No.:*	2
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Initial Specimen Info		
Wt. of wet soil + cont.	163.33	g
Wt. of dry soil + cont.	138.46	g
Wt. of container	23.29	g
Wt. of water	24.87	g
Wt. of dry soil	115.17	g
Moisture Content	**21.6**	**%**

Final Specimen Info		
Wt. of wet soil + cont.	582.98	g
Wt. of dry soil + cont.	45395.00	g
Wt. of container	206.33	g
Wt. of water	-44812.02	g
Wt. of dry soil	45188.67	g
Moisture Content	**-99.2**	**%**

Wt. of wet soil + ring	511.95	g
Wt. of ring	206.33	g
Wt. of wet soil	305.62	g
Wet density of soil	95.2	pcf
Dry density of soil	78.3	pcf
Specific gravity of soil	2.68	-
Saturation	**50.9**	**%**

Date & Time	**Elapsed Time (min)**	**Dial Reading**	**Δh, Expansion**
5/17/2024 11:00	0	0	0
5/17/2024 11:10	10	0.0000	0
Add Distilled Water to Sample			
5/18/2024 11:00	1440	0.1036	0.1036

Expansion Index = **104** **High**

DIRECT SHEAR TEST

ASTM D3080

HUSHMAND ASSOCIATES, INC.
Geotechnical and Earthquake Engineers

HAI Project No.: SAG-24-018-2

Client: SA Geotechnical, Inc
Project Name: 95 Argonaut
Project Number: 24059-01
Boring No.: H-1
Sample No.: D-2
Sample Type: Undisturbed Ring
Depth (ft): 5
Soil Description: Olive Gray, Elastic Silt with Sand (MH)

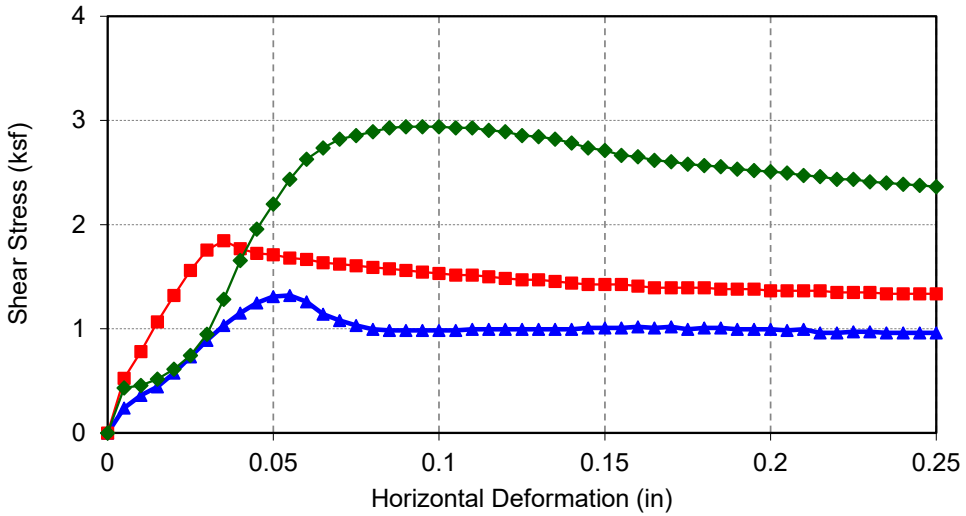
Tested by: GA
Checked by: KL
Date: 5/6/2024

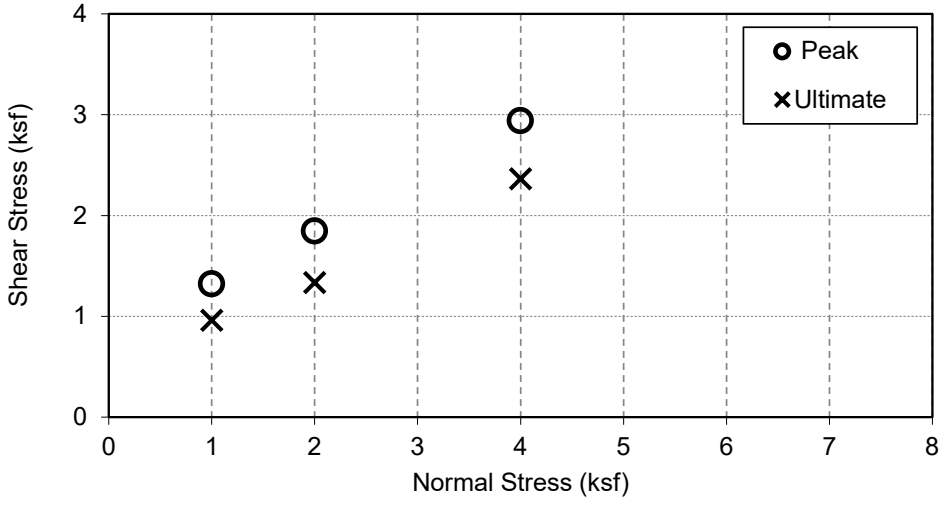
Type of test: **Consolidated, Drained**

Test No.	1	2	3
Symbol	▲	■	◆
Normal Stress (ksf)	**1**	**2**	**4**
Deformation Rate (in/min)	**0.002**	**0.002**	**0.002**

Peak Shear Stress (ksf)	**O**	**1.32**	**1.85**	**2.94**
Shear Stress @ End of Test (ksf)	**X**	**0.96**	**1.34**	**2.36**

Initial Height of Sample (in)	1.000	1.000	1.000
Height of Sample before Shear (in)	0.9998	0.9936	0.9883
Diameter of Sample (in)	2.416	2.416	2.416
Initial Moisture Content (%)	**43.8**	**43.8**	**43.8**
Final Moisture Content (%)	**54.3**	**52.5**	**50.4**
Dry Density (pcf)	**71.1**	**71.4**	**72.3**





HUSHMAND ASSOCIATES, INC.
Geotechnical and Earthquake Engineers

DIRECT SHEAR TEST

ASTM D3080

HAI Project No.: SAG-24-018-2

Tested by: GA

Checked by: KL

Date: 5/6/2024

Client: SA Geotechnical, Inc

Project Name: 95 Argonaut

Project Number: 24059-01

Boring No.: H-4

Sample No.: D-1

Sample Type: Undisturbed Ring

Depth (ft): 2.5

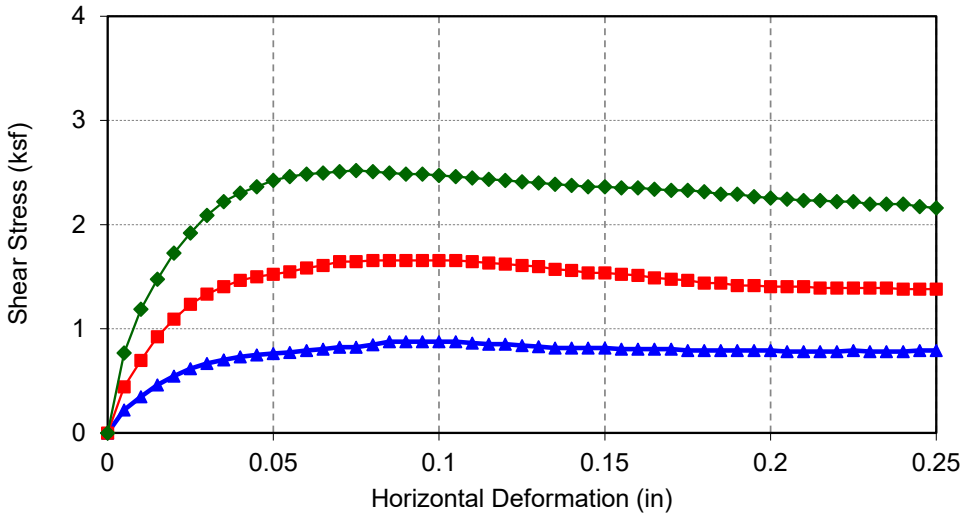
Soil Description: Olive Gray, Elastic Silt with Sand (MH)

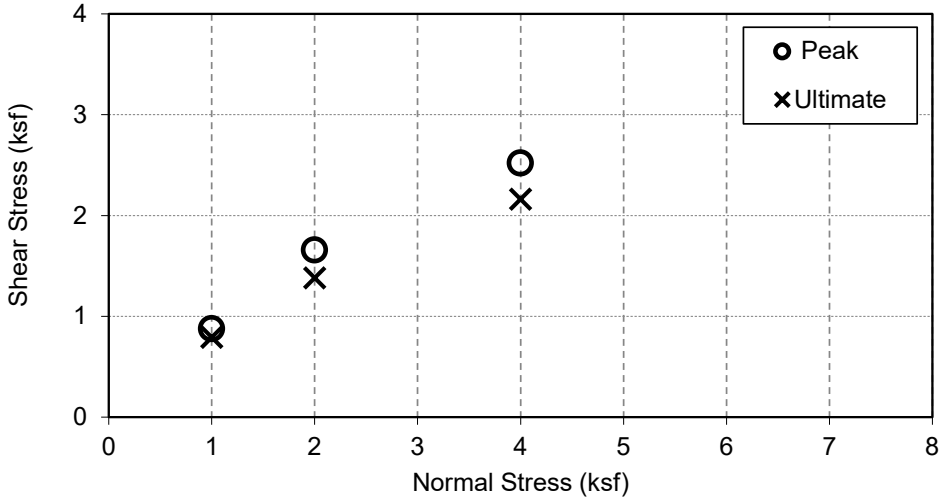
Type of test: **Consolidated, Drained**

Test No.	1	2	3
Symbol	▲	■	◆
Normal Stress (ksf)	**1**	**2**	**4**
Deformation Rate (in/min)	**0.002**	**0.002**	**0.002**

Peak Shear Stress (ksf)	**O**	**0.88**	**1.66**	**2.52**
Shear Stress @ End of Test (ksf)	**X**	**0.79**	**1.38**	**2.16**

Initial Height of Sample (in)	1.000	1.000	1.000
Height of Sample before Shear (in)	1.0004	0.9954	0.9909
Diameter of Sample (in)	2.416	2.416	2.416
Initial Moisture Content (%)	**56.4**	**56.4**	**56.4**
Final Moisture Content (%)	**68.8**	**61.8**	**52.6**
Dry Density (pcf)	**61.0**	**62.8**	**65.8**





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-1		
Type of Sample:	Undisturbed ring		
Depth (ft):	2.5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
112.80	108.29	66.73

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.900
Height of Solids	H_s	(in)	0.324	0.324
Height of Water	H_w	(in)	0.613	0.553
Height of Air	H_a	(in)	0.063	0.023
Dry Density		**(pcf)**	**55.4**	**68.4**
Water Content		**(%)**	**69.0**	**62.3**
Saturation		**(%)**	**90.7**	**96.1**

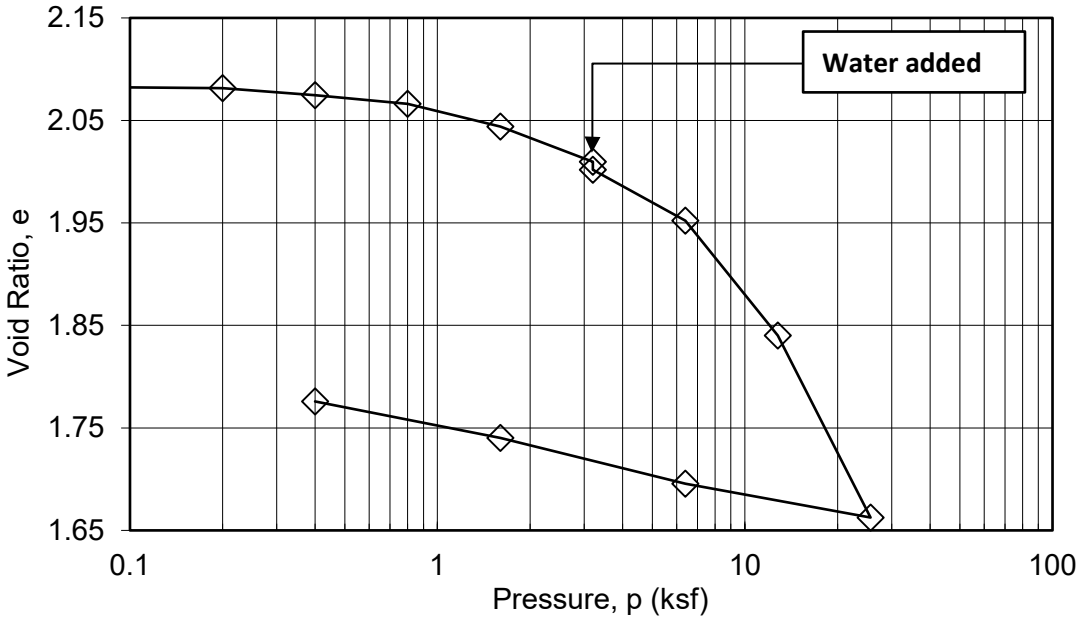
* Saturation is calculated based on Gs= 2.74

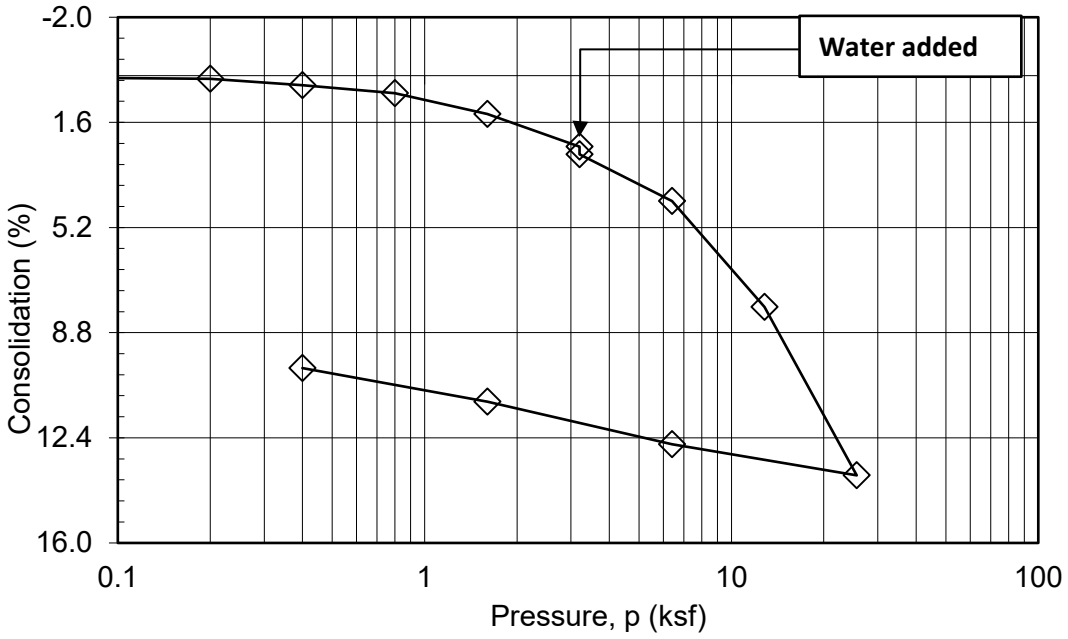
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.676	2.085	0			
0.2	0.0011	0.9990	0.675	2.081	0.1	1.7E-02	5.5E-03	
0.4	0.0033	0.9967	0.673	2.075	0.3	3.5E-02	1.1E-02	
0.8	0.0060	0.9940	0.670	2.066	0.6	2.1E-02	6.8E-03	
1.6	0.0132	0.9869	0.663	2.044	1.3	2.8E-02	9.1E-03	
3.2	0.0244	0.9757	0.651	2.010	2.4	2.2E-02	7.2E-03	
3.2	0.0269	0.9731	0.649	2.002	2.7	Water Added		
6.4	0.0430	0.9571	0.633	1.952	4.3	1.5E-02	5.2E-03	
12.8	0.0793	0.9208	0.597	1.840	7.9	1.7E-02	6.2E-03	
25.6	0.1369	0.8632	0.539	1.663	13.7	1.4E-02	5.2E-03	
6.4	0.1262	0.8739	0.550	1.696	12.6	Unloaded		
1.6	0.1117	0.8884	0.564	1.740	11.2			
0.4	0.1001	0.8999	0.576	1.776	10.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-1		
Type of Sample:	Undisturbed ring		
Depth (ft):	2.5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-5		
Type of Sample:	Undisturbed ring		
Depth (ft):	15		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
117.41	112.21	70.29

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.915
Height of Solids	H_s	(in)	0.341	0.341
Height of Water	H_w	(in)	0.627	0.558
Height of Air	H_a	(in)	0.031	0.015
Dry Density		**(pcf)**	**58.4**	**69.8**
Water Content		**(%)**	**67.0**	**59.6**
Saturation		**(%)**	**95.2**	**97.3**

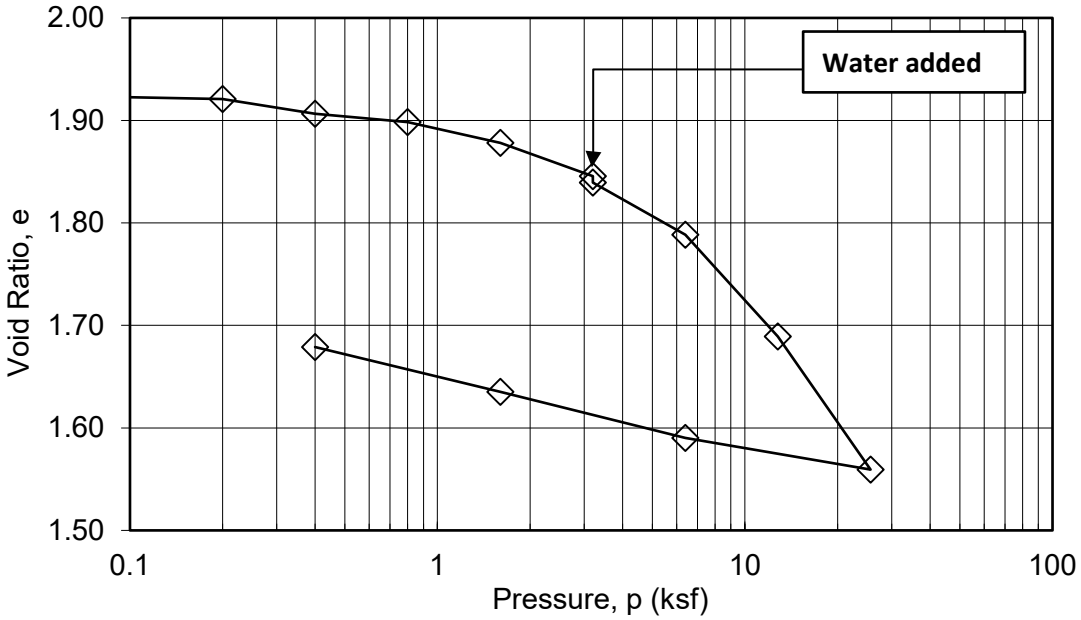
* Saturation is calculated based on Gs= 2.74

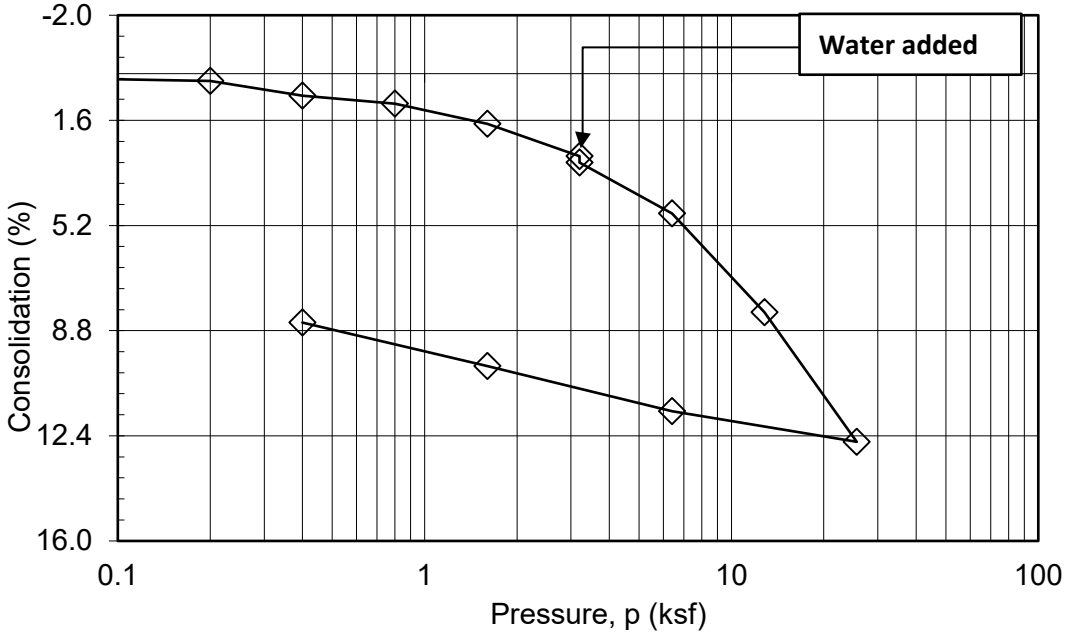
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.659	1.928	0			
0.2	0.0025	0.9975	0.656	1.921	0.3	3.9E-02	1.3E-02	
0.4	0.0075	0.9925	0.651	1.907	0.8	7.2E-02	2.5E-02	
0.8	0.0103	0.9897	0.648	1.898	1.0	2.0E-02	7.1E-03	
1.6	0.0172	0.9828	0.641	1.878	1.7	2.5E-02	8.8E-03	
3.2	0.0283	0.9717	0.630	1.846	2.8	2.0E-02	7.1E-03	
3.2	0.0304	0.9696	0.628	1.839	3.0	Water Added		
6.4	0.0479	0.9522	0.611	1.788	4.8	1.6E-02	5.7E-03	
12.8	0.0818	0.9183	0.577	1.689	8.2	1.6E-02	5.8E-03	
25.6	0.1261	0.8740	0.532	1.559	12.6	1.0E-02	4.0E-03	
6.4	0.1156	0.8845	0.543	1.590	11.6	Unloaded		
1.6	0.1001	0.8999	0.558	1.635	10.0			
0.4	0.0852	0.9148	0.573	1.679	8.5			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-5		
Type of Sample:	Undisturbed ring		
Depth (ft):	15		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-3	*Date:*	05/06/24
Sample No.:	D-2		
Type of Sample:	Undisturbed ring		
Depth (ft):	5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
108.17	103.32	58.52

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.900
Height of Solids	H_s	(in)	0.284	0.284
Height of Water	H_w	(in)	0.661	0.596
Height of Air	H_a	(in)	0.055	0.020
Dry Density		**(pcf)**	**48.6**	**60.0**
Water Content		**(%)**	**84.8**	**76.6**
Saturation		**(%)**	**92.3**	**96.8**

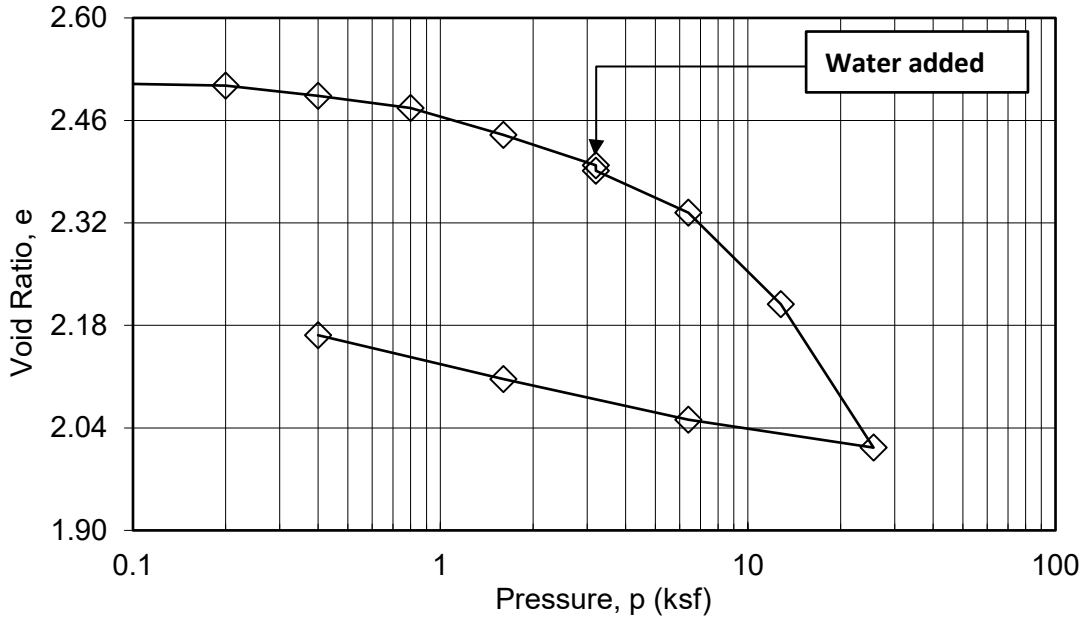
* Saturation is calculated based on Gs= 2.74

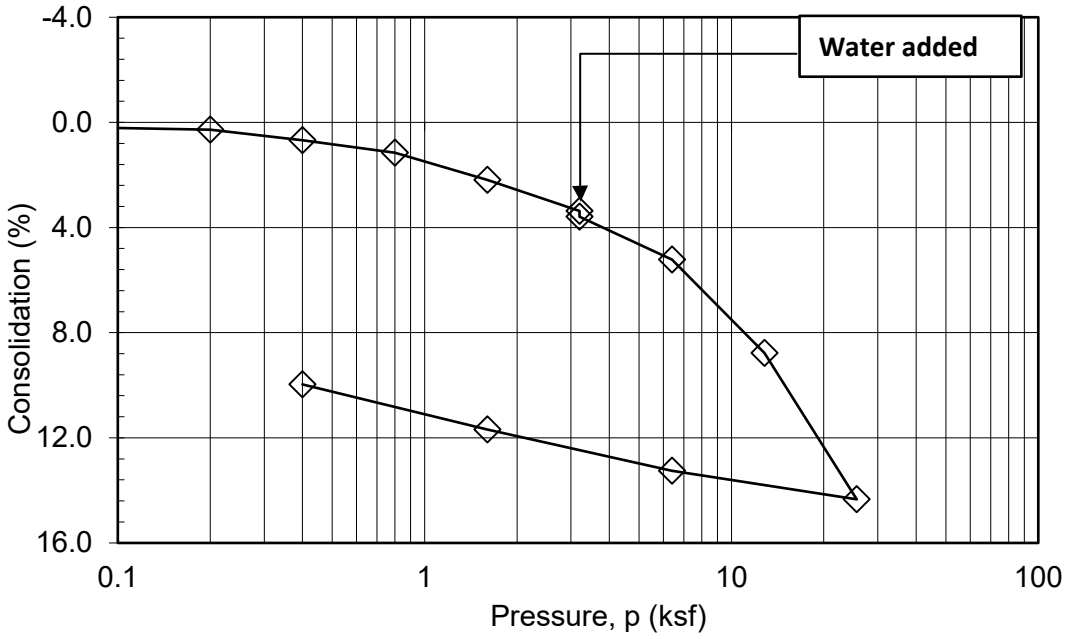
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.716	2.517	0			
0.2	0.0028	0.9972	0.713	2.508	0.3	5.2E-02	1.5E-02	
0.4	0.0068	0.9932	0.709	2.494	0.7	7.0E-02	2.0E-02	
0.8	0.0115	0.9885	0.704	2.477	1.1	4.1E-02	1.2E-02	
1.6	0.0219	0.9781	0.694	2.440	2.2	4.6E-02	1.3E-02	
3.2	0.0338	0.9663	0.682	2.399	3.4	2.6E-02	7.7E-03	
3.2	0.0359	0.9641	0.680	2.391	3.6	Water Added		
6.4	0.0522	0.9479	0.664	2.334	5.2	1.8E-02	5.4E-03	
12.8	0.0878	0.9123	0.628	2.209	8.8	2.0E-02	6.1E-03	
25.6	0.1434	0.8566	0.572	2.013	14.3	1.5E-02	5.1E-03	
6.4	0.1326	0.8675	0.583	2.051	13.3	Unloaded		
1.6	0.1168	0.8832	0.599	2.107	11.7			
0.4	0.0997	0.9003	0.616	2.167	10.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-3	*Date:*	05/06/24
Sample No.:	D-2		
Type of Sample:	Undisturbed ring		
Depth (ft):	5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	D-4		
Type of Sample:	Undisturbed ring		
Depth (ft):	10		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
111.40	103.94	59.64

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.880
Height of Solids	H_s	(in)	0.290	0.290
Height of Water	H_w	(in)	0.689	0.590
Height of Air	H_a	(in)	0.021	0.000
Dry Density		**(pcf)**	**49.5**	**64.0**
Water Content		**(%)**	**86.8**	**74.3**
Saturation		**(%)**	**97.0**	**99.9**

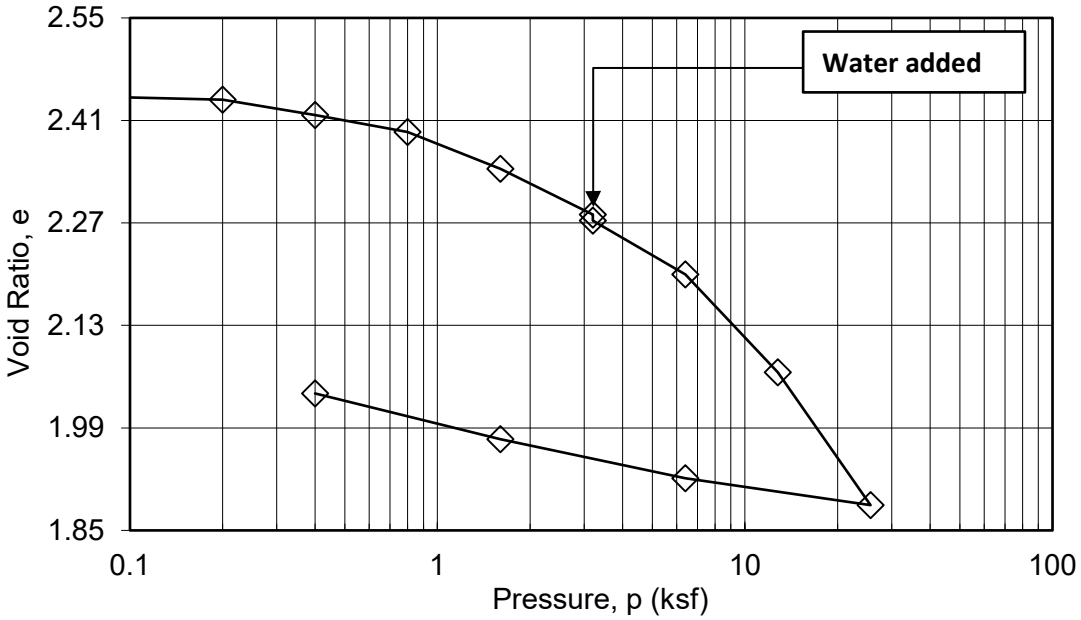
* Saturation is calculated based on Gs= 2.74

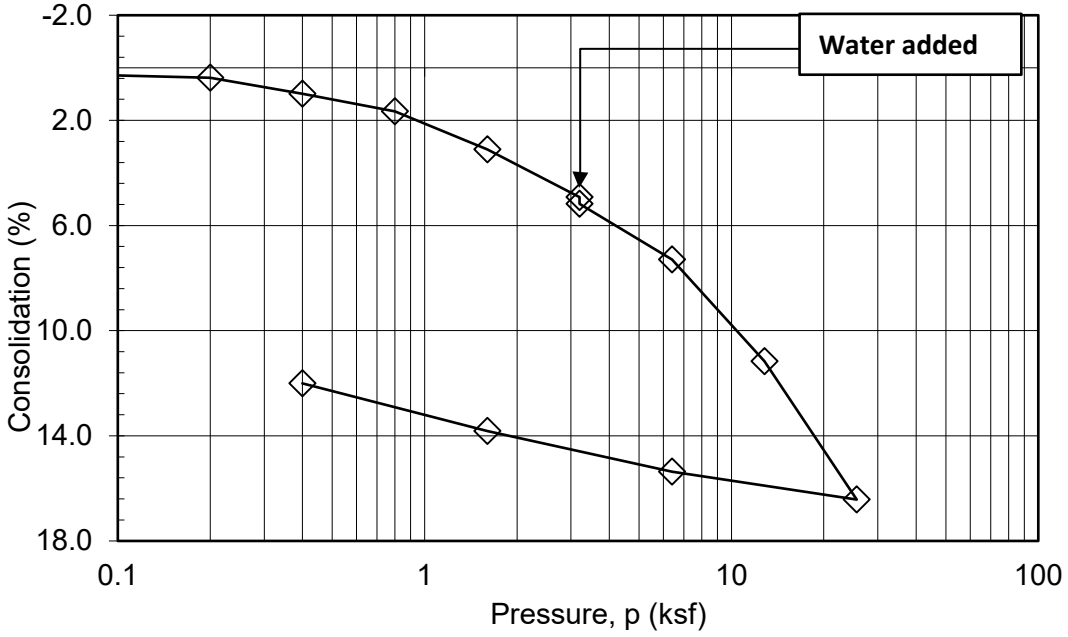
Load (ksf)	δH (in)	H (in)	Voids (in)	e	Consol. (%)	a_v (ksf^{-1})	M_v (ksf^{-1})	Comment
0.01	-------	1.0000	0.710	2.451	0			
0.2	0.0038	0.9963	0.707	2.438	0.4	6.8E-02	2.0E-02	
0.4	0.0099	0.9901	0.700	2.417	1.0	1.1E-01	3.1E-02	
0.8	0.0166	0.9834	0.694	2.394	1.7	5.8E-02	1.7E-02	
1.6	0.0311	0.9689	0.679	2.344	3.1	6.3E-02	1.9E-02	
3.2	0.0492	0.9508	0.661	2.282	4.9	3.9E-02	1.2E-02	
3.2	0.0517	0.9483	0.659	2.273	5.2	Water Added		
6.4	0.0729	0.9271	0.637	2.200	7.3	2.3E-02	7.1E-03	
12.8	0.1117	0.8883	0.599	2.066	11.2	2.1E-02	6.8E-03	
25.6	0.1643	0.8358	0.546	1.885	16.4	1.4E-02	4.9E-03	
6.4	0.1536	0.8464	0.557	1.921	15.4	Unloaded		
1.6	0.1382	0.8618	0.572	1.974	13.8			
0.4	0.1201	0.8799	0.590	2.037	12.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	D-4		
Type of Sample:	Undisturbed ring		
Depth (ft):	10		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





Soil Analysis Lab Results

Client: HAI
Job Name: 95 Argonaut
Client Job Number: SAG-24-018-2 / 24059-01
Project X Job Number: S240515F
May 17, 2024

	Method	ASTM D4327		ASTM D4327	
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-	
	(ft)	**(mg/kg)**	**(wt%)**	**(mg/kg)**	**(wt%)**
H-1 B-1	0-5	768.4	0.0768	156.2	0.0156
H-4 B-1	0-5	713.1	0.0713	82.9	0.0083

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

Note: Sometimes a bad sulfate hit is a contaminated spot. Typical fertilizers are Potassium chloride, ammonium sulfate or ammonium sulfate nitrate (ASN). So this is another reason why testing full corrosion series is good because we then have the data to see if those other ingredients are present meaning the soil sample is just fertilizer-contaminated soil. This can happen often when the soil samples collected are simply surface scoops. This is why it's best to dig in a foot, throw away the top and test the deeper stuff. Dairy farms are also notorious for these items.

If one sample pops up much more corrosive than all others, we would recommend collecting more samples surrounding the problem sample location to determine if the peak is isolated to it. This allows us to conclude it was a contaminated sample and able to declare it an outlier.

Try out our new online forms: SOIL CORROSIVITY & THERMAL RESISTIVITY LAB REQUEST FORM & IN-SITU WENNER 4 PIN QUOTE REQUEST FORM

Appendix D

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

95 Argonaut, Aliso Viejo, CA 92656, USA

Latitude, Longitude: 33.5945973, -117.7242937



Date	4/26/2024, 3:23:29 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.218	MCE_R ground motion. (for 0.2 second period)
S_1	0.438	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.233	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.822	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.013	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.515	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.566	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.218	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.304	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.489	Factored deterministic acceleration value. (0.2 second)
S1RT	0.438	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.468	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.82	Factored deterministic acceleration value. (1.0 second)
PGAd	1.017	Factored deterministic acceleration value. (Peak Ground Acceleration)

Type	Value	Description
PGA_{UH}	0.515	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.934	Mapped value of the risk coefficient at short periods
C_{R1}	0.934	Mapped value of the risk coefficient at a period of 1 s
C_V	1.344	Vertical coefficient

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new USGS Earthquake Hazard Toolbox for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

Input

Edition

Dynamic: Conterminous U.S. 2014 (u…

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

33.5945973

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-117.7242937

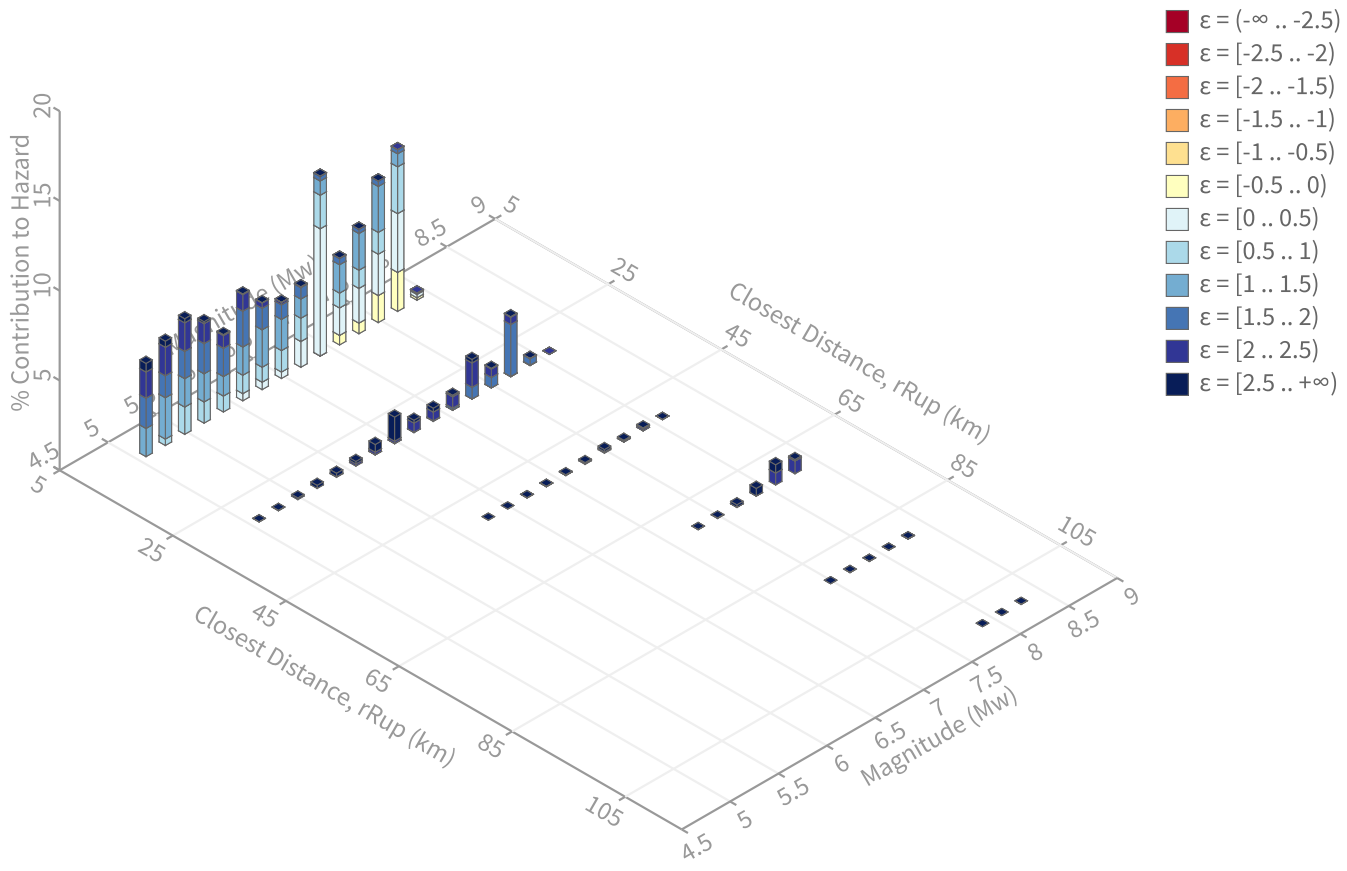
Site Class

259 m/s (Site class D)

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.61392295 g

Recovered targets

Return period: 2880.4914 yrs
Exceedance rate: 0.00034716298 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.07 %

Mean (over all sources)

m: 6.63
r: 12.23 km
ε_0: 1.22 σ

Mode (largest m-r bin)

m: 6.89
r: 4.51 km
ε_0: 0.41 σ
Contribution: 10.02 %

Mode (largest m-r-ε_0 bin)

m: 6.89
r: 3.48 km
ε_0: 0.2 σ
Contribution: 7.08 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM32	System							29.04
San Joaquin Hills [2]		3.26	7.11	0.23	117.713°W	33.600°N	60.23	14.88
Newport-Inglewood (Offshore) [2]		11.85	7.31	1.21	117.806°W	33.513°N	219.82	4.79
Elsinore (Glen Ivy) rev [1]		28.83	7.28	2.11	117.509°W	33.782°N	43.62	2.57
UC33brAvg_FM31	System							25.52
San Joaquin Hills [2]		3.26	7.52	0.18	117.713°W	33.600°N	60.23	9.28
Newport-Inglewood (Offshore) [2]		11.85	7.31	1.21	117.806°W	33.513°N	219.82	5.04
Oceanside alt1 [6]		8.12	7.00	0.62	117.802°W	33.514°N	218.97	3.06
Elsinore (Glen Ivy) rev [1]		28.83	7.26	2.12	117.509°W	33.782°N	43.62	2.52
UC33brAvg_FM31 (opt)	Grid							22.81
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.14
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.14
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.79
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.79
UC33brAvg_FM32 (opt)	Grid							22.63
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.11
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.11
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.76
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.76

Appendix E

Summary of Slope Stability Analysis

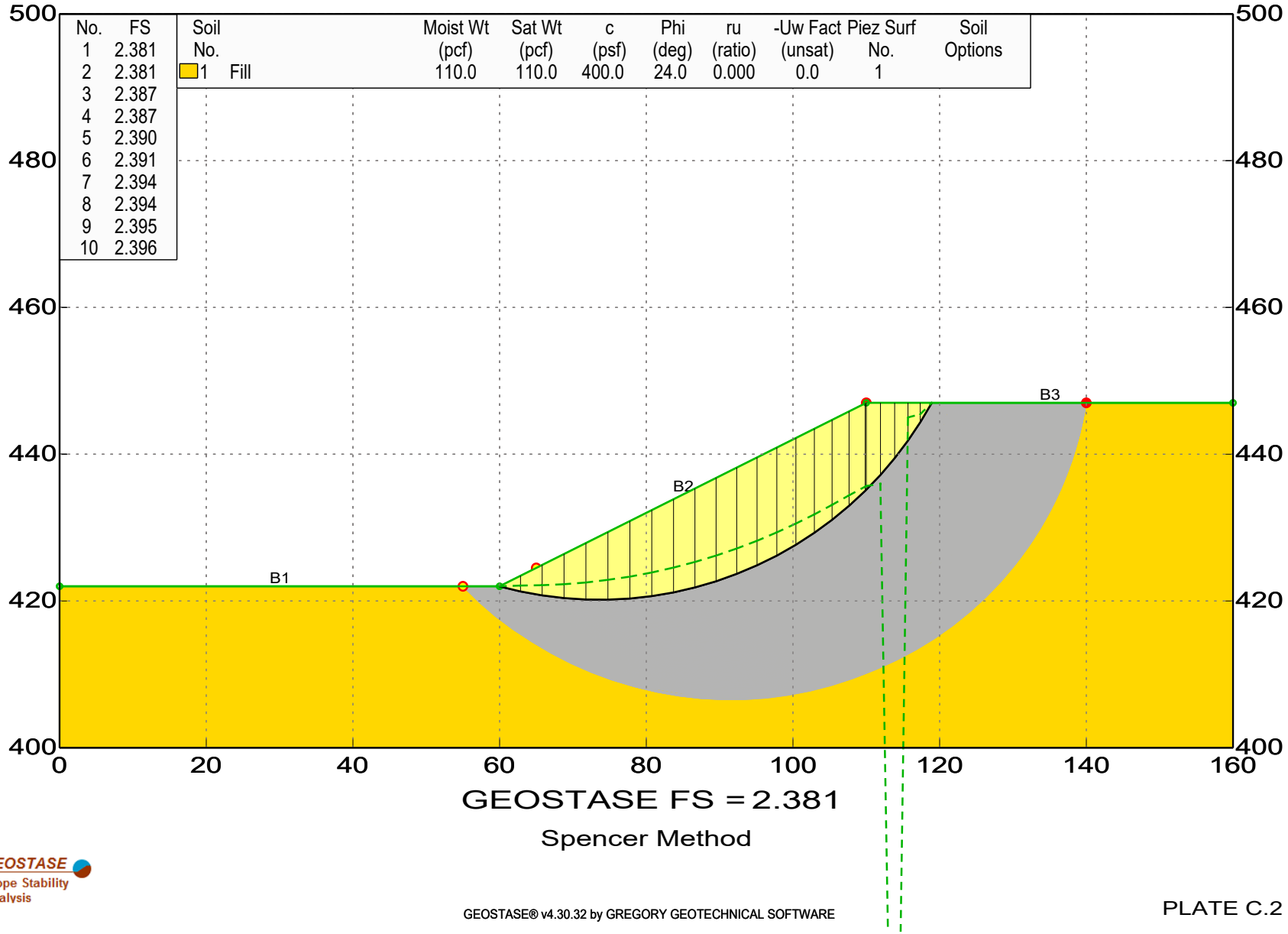
Filename	Description	Factor of Safety (FS)	
		Static	*Pseudostatic*
01, 01p	Global Stability of 25-foot High Fill Slope	2.38	1.46

Project No.: 24059-01

Project Name: Meritage/ 95 Argonaut, Aliso Viejo

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes

SA Geotechnical, Inc\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd



GEOSTASE FS = 2.381

Spencer Method

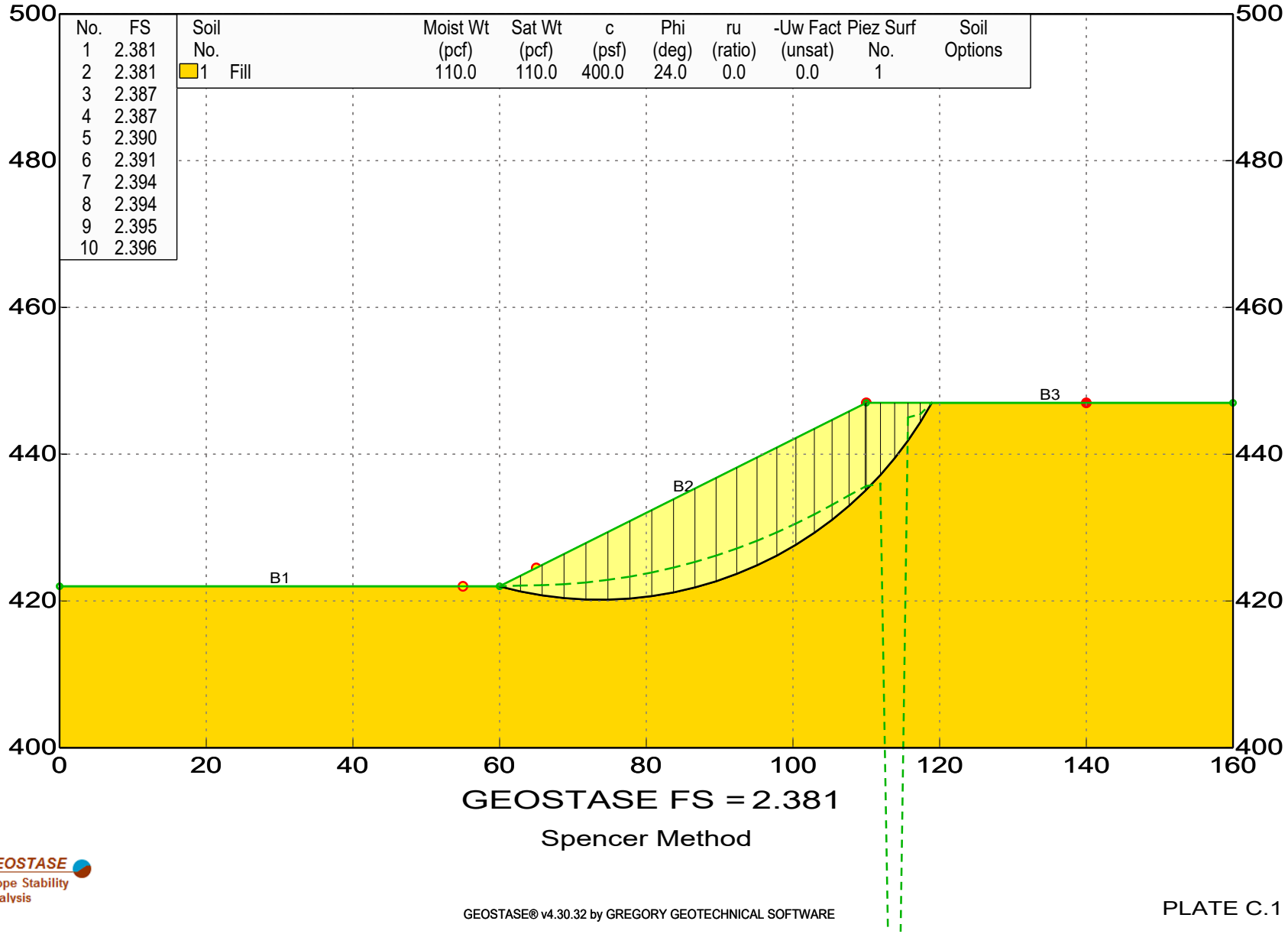
GEOSTASE
Slope Stability Analysis

GEOSTASE® v4.30.32 by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.2

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes

SA Geotechnical, Inc\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd



GEOSTASE FS = 2.381

Spencer Method

GEOSTASE
Slope Stability Analysis

GEOSTASE® v4.30.32 by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D.,P.E.,S.E.,BC.GE **

** Current Version 4.30.32-Double Precision, Sept 2023 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE (2D & 3D)
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 5/ 28/ 2024
Analysis Time:
Analysis By: SA Geotechnical, Inc.

Input File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd

Output File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.OUT

Unit System: English

PROJECT: 95 Argonaut. Aliso Viejo

DESCRIPTION: Global Stability of 25' High Slopes

PROFILE BOUNDARY DATA

3 Surface Boundaries
3 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	422.000	60.000	422.000	1
2	60.000	422.000	110.000	447.000	1
3	110.000	447.000	160.000	447.000	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 400.000(ft)

SURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD
1	0.000	422.000
2	60.000	422.000
3	110.000	447.000
4	160.000	447.000

SUBSURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD

PROFILE BOUNDARY SLOPES AND ANGLES

BND No.	Slope	Angle(Deg.)
1	0.000	0.000
2	0.500	26.565
3	0.000	0.000

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	(-Uw) Fact.	Water Surface No.	Water Option
1 Fill	110.0	110.0	400.00	24.00	0.000	0.0	1	0

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.0600(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 55.00(ft)
and X = 65.00(ft)

Each Surface ends within a Range Between X = 110.00(ft)
and X = 140.00(ft)

All surfaces are generated left to right for both a left and right sliding slope.

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 400.00(ft)

Specified Maximum Radius = 100000.000(ft)

3.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Constant (1.0)

```
SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS =  1.500
FS tolerance =  0.000001000
Initial estimate of theta(deg) =  15.00
Theta tolerance(radians) =  0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) =  45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance  = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient =  1.00

Specified Tension Crack Water Depth Factor =   0.000

Total Number of Trial Surfaces Attempted = 2000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.


Number of Trial Surfaces with Non-Converged FS = 242

Number of Trial Surfaces With Valid FS = 1758


Percentage of Trial Surfaces With Non-Converged and/or
Non-Valid FS Solutions of the Total Attempted =  12.1 %

Statistical Data On All Valid FS Values:
   FS Max =   7.876   FS Min =   2.381   FS Ave =   2.890
   Standard Deviation =    0.400   Coefficient of Variation =   13.85 %


Critical Surface is Sequence Number     860 of Those Analyzed.


*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****
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BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 73.583338(ft) ; Y = 471.872496(ft); and Radius = 51.705663(ft)

Circular Trial Failure Surface Generated With 25 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	59.93747	422.00000
2	62.85286	421.29254
3	65.80437	420.75534
4	68.78207	420.39023
5	71.77593	420.19843
6	74.77588	420.18059
7	77.77181	420.33676
8	80.75364	420.66642
9	83.71134	421.16846
10	86.63494	421.84119
11	89.51460	422.68235
12	92.34063	423.68910
13	95.10352	424.85806
14	97.79396	426.18528
15	100.40290	427.66631
16	102.92155	429.29615
17	105.34144	431.06933
18	107.65441	432.97986
19	109.85270	435.02132
20	111.92888	437.18684
21	113.87598	439.46912
22	115.68743	441.86048
23	117.35715	444.35288
24	118.87950	446.93792
25	118.91136	447.00000

Iter. No.	Theta (deg)	FS (Moment)	FS (Force)

	(fx=1.0)			Lambda	Delta FS
1	15.0000	2.446791	2.358132	0.268	0.8865890E-01
2	19.9500	2.277947	2.410070	0.363	0.1321227E+00
3	16.9874	2.389777	2.378405	0.305	0.1137135E-01
4	17.2227	2.382173	2.380855	0.310	0.1318158E-02
5	17.2535	2.381161	2.381176	0.311	0.1509128E-04
6	17.2532	2.381173	2.381173	0.311	0.2018040E-07

Factor Of Safety For The Preceding Specified Surface = 2.381
Theta (fx = 1.0) = 17.25 Deg Lambda = 0.311

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000 (0.00% Filled)

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 11.199(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)
1	60.00	422.00	1.000+	14.21	1.000	17.25	4.2
2	62.85	422.10	0.376	846.01	1.000	17.25	250.9
3	65.80	422.15	0.336	1938.72	1.000	17.25	575.0
4	68.78	422.29	0.316	3153.82	1.000	17.25	935.4
5	71.78	422.53	0.303	4386.02	1.000	17.25	1300.9
6	74.78	422.87	0.292	5547.84	1.000	17.25	1645.5
7	77.77	423.32	0.283	6568.74	1.000	17.25	1948.3
8	80.75	423.88	0.275	7394.31	1.000	17.25	2193.1
9	83.71	424.55	0.266	7985.59	1.000	17.25	2368.5
10	86.63	425.32	0.258	8318.33	1.000	17.25	2467.2
11	89.51	426.18	0.249	8382.18	1.000	17.25	2486.1
12	92.34	427.15	0.239	8179.80	1.000	17.25	2426.1
13	95.10	428.20	0.227	7725.88	1.000	17.25	2291.5
14	97.79	429.33	0.214	7045.96	1.000	17.25	2089.8
15	100.40	430.54	0.198	6175.20	1.000	17.25	1831.5
16	102.92	431.81	0.177	5156.95	1.000	17.25	1529.5
17	105.34	433.11	0.150	4041.22	1.000	17.25	1198.6
18	107.65	434.41	0.111	2883.00	1.000	17.25	855.1
19	109.85	435.58	0.047	1740.49	1.000	17.25	516.2
20	110.00	435.65	0.040	1659.55	1.000	17.25	492.2
21	111.93	435.96	0.000-	735.94	1.000	17.25	218.3
22	113.88	319.35	0.000-	12.72	1.000	17.25	3.8
23	115.69	445.03	0.616	-377.52	1.000	17.25	-112.0
24	117.36	445.45	0.413	-395.07	1.000	17.25	-117.2
25	118.88	446.96	0.419	-13.96	1.000	17.25	-4.1

26	118.91	447.00	0.000	0.00	1.000	17.25	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 26 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	0.06	0.01	59.97	421.99	422.00	-13.64	0.00	0.06
2	2.85	1.07	61.43	421.64	422.71	-13.64	26.57	2.94
3	2.95	3.14	64.33	421.02	424.16	-10.32	26.57	3.00
4	2.98	5.07	67.29	420.57	425.65	-6.99	26.57	3.00
5	2.99	6.85	70.28	420.29	427.14	-3.67	26.57	3.00
6	3.00	8.45	73.28	420.19	428.64	-0.34	26.57	3.00
7	3.00	9.88	76.27	420.26	430.14	2.98	26.57	3.00
8	2.98	11.13	79.26	420.50	431.63	6.31	26.57	3.00
9	2.96	12.20	82.23	420.92	433.12	9.63	26.57	3.00
10	2.92	13.08	85.17	421.50	434.59	12.96	26.57	3.00
11	2.88	13.78	88.07	422.26	436.04	16.28	26.57	3.00
12	2.83	14.28	90.93	423.19	437.46	19.61	26.57	3.00
13	2.76	14.59	93.72	424.27	438.86	22.93	26.57	3.00
14	2.69	14.70	96.45	425.52	440.22	26.26	26.57	3.00
15	2.61	14.62	99.10	426.93	441.55	29.58	26.57	3.00
16	2.52	14.35	101.66	428.48	442.83	32.91	26.57	3.00
17	2.42	13.88	104.13	430.18	444.07	36.23	26.57	3.00
18	2.31	13.22	106.50	432.02	445.25	39.56	26.57	3.00
19	2.20	12.38	108.75	434.00	446.38	42.88	26.57	3.00
20	0.15	11.87	109.93	435.10	446.96	46.21	26.57	0.21
21	1.93	10.82	110.96	436.18	447.00	46.21	0.00	2.79
22	1.95	8.67	112.90	438.33	447.00	49.53	0.00	3.00
23	1.81	6.34	114.78	440.66	447.00	52.86	0.00	3.00
24	1.67	3.89	116.52	443.11	447.00	56.18	0.00	3.00
25	1.52	1.35	118.12	445.65	447.00	59.51	0.00	3.00

26	0.03	0.03	118.90	446.97	447.00	62.83	0.00	0.07

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	59.937469	422.000000
2	60.000000	421.984826
3	62.852858	421.292536
4	65.804370	420.755344
5	68.782070	420.390233
6	71.775932	420.198432
7	74.775879	420.180587
8	77.771811	420.336758
9	80.753644	420.666419
10	83.711338	421.168461
11	86.634937	421.841192
12	89.514599	422.682350
13	92.340630	423.689101
14	95.103517	424.858057
15	97.793958	426.185283
16	100.402896	427.666310
17	102.921548	429.296153
18	105.341437	431.069325
19	107.654415	432.979858
20	109.852695	435.021318
21	110.000000	435.174961
22	111.928879	437.186835
23	113.875975	439.469118
24	115.687431	441.860483
25	117.357147	444.352881
26	118.879503	446.937922
27	118.911365	447.000000

Table 3 - Force and Pore Pressure Data On The 26 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	-Uw (psf)	Earthquake Force Horiz (lbs)	Earthquake Force Vert (lbs)	Distributed Load (psf)
1	0.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
2	337.2	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
3	1019.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
4	1661.9	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
5	2254.3	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
6	2787.9	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
7	3255.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
8	3650.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
9	3968.8	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
10	4207.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
11	4363.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
12	4438.5	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
13	4433.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
14	4351.2	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
15	4196.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
16	3975.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
17	3695.5	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
18	3364.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
19	2992.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
20	192.3	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
21	2295.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
22	1857.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
23	1262.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
24	715.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
25	226.8	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
26	0.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 65504.32(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 65504.32(lbs)

TOTAL AREA OF SLIDING MASS = 595.49(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 26 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	400.00	24.00	
2	1	400.00	24.00	
3	1	400.00	24.00	
4	1	400.00	24.00	
5	1	400.00	24.00	
6	1	400.00	24.00	
7	1	400.00	24.00	
8	1	400.00	24.00	
9	1	400.00	24.00	
10	1	400.00	24.00	
11	1	400.00	24.00	
12	1	400.00	24.00	
13	1	400.00	24.00	
14	1	400.00	24.00	
15	1	400.00	24.00	
16	1	400.00	24.00	
17	1	400.00	24.00	
18	1	400.00	24.00	
19	1	400.00	24.00	
20	1	400.00	24.00	
21	1	400.00	24.00	
22	1	400.00	24.00	
23	1	400.00	24.00	
24	1	400.00	24.00	
25	1	400.00	24.00	
26	1	400.00	24.00	

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH

N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
S = SHANSEP UNDRAINED SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-13.64	59.97	0.06	114.19	0.83	136.820
2	-13.64	61.43	2.94	257.11	118.20	2.175
3	-10.32	64.33	3.00	502.93	345.44	1.456
4	-6.99	67.29	3.00	716.17	558.12	1.283
5	-3.67	70.28	3.00	896.54	752.97	1.191
6	-0.34	73.28	3.00	1046.36	929.33	1.126
7	2.98	76.27	3.00	1167.54	1086.61	1.074
8	6.31	79.26	3.00	1261.74	1224.28	1.031
9	9.63	82.23	3.00	1330.42	1341.87	0.991
10	12.96	85.17	3.00	1374.94	1438.99	0.955
11	16.28	88.07	3.00	1396.55	1515.32	0.922
12	19.61	90.93	3.00	1396.49	1570.59	0.889
13	22.93	93.72	3.00	1375.97	1604.62	0.858
14	26.26	96.45	3.00	1336.22	1617.30	0.826
15	29.58	99.10	3.00	1278.52	1608.58	0.795
16	32.91	101.66	3.00	1204.17	1578.49	0.763
17	36.23	104.13	3.00	1114.58	1527.13	0.730
18	39.56	106.50	3.00	1011.23	1454.68	0.695
19	42.88	108.75	3.00	895.70	1361.38	0.658
20	46.21	109.93	0.21	809.17	1305.15	0.620
21	46.21	110.96	2.79	730.42	1190.10	0.614
22	49.53	112.90	3.00	530.57	953.92	0.556
23	52.86	114.78	3.00	329.81	696.87	0.473
24	56.18	116.52	3.00	136.34	428.26	0.318

25	59.51	118.12	3.00	-47.05	149.01	-0.316
26	62.83	118.90	0.07	-142.16	3.41	-41.635

TABLE 5A - Total Base Force Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-13.64	59.97	0.06	7.35	0.05	140.790
2	-13.64	61.43	2.94	754.77	337.20	2.238
3	-10.32	64.33	3.00	1508.80	1019.57	1.480
4	-6.99	67.29	3.00	2148.50	1661.91	1.293
5	-3.67	70.28	3.00	2689.62	2254.28	1.193
6	-0.34	73.28	3.00	3139.07	2787.94	1.126
7	2.98	76.27	3.00	3502.62	3255.40	1.076
8	6.31	79.26	3.00	3785.22	3650.58	1.037
9	9.63	82.23	3.00	3991.27	3968.84	1.006
10	12.96	85.17	3.00	4124.81	4207.03	0.980
11	16.28	88.07	3.00	4189.65	4363.60	0.960
12	19.61	90.93	3.00	4189.46	4438.53	0.944
13	22.93	93.72	3.00	4127.90	4433.38	0.931
14	26.26	96.45	3.00	4008.67	4351.24	0.921
15	29.58	99.10	3.00	3835.55	4196.67	0.914
16	32.91	101.66	3.00	3612.52	3975.66	0.909
17	36.23	104.13	3.00	3343.75	3695.49	0.905
18	39.56	106.50	3.00	3033.68	3364.64	0.902
19	42.88	108.75	3.00	2687.10	2992.70	0.898
20	46.21	109.93	0.21	172.23	192.26	0.896
21	46.21	110.96	2.79	2035.79	2295.56	0.887
22	49.53	112.90	3.00	1591.72	1857.38	0.857
23	52.86	114.78	3.00	989.42	1262.35	0.784
24	56.18	116.52	3.00	409.02	715.08	0.572
25	59.51	118.12	3.00	-141.15	226.84	-0.622
26	62.83	118.90	0.07	-9.92	0.11	-91.181

TABLE 6 - Effective and Base Shear Stress Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-13.64	59.97	0.06	114.19	450.84	189.33
2	-13.64	61.43	2.94	257.11	514.47	216.06
3	-10.32	64.33	3.00	502.93	623.92	262.02
4	-6.99	67.29	3.00	716.17	718.86	301.89
5	-3.67	70.28	3.00	896.54	799.17	335.62
6	-0.34	73.28	3.00	1046.36	865.87	363.63
7	2.98	76.27	3.00	1167.54	919.82	386.29
8	6.31	79.26	3.00	1261.74	961.76	403.90
9	9.63	82.23	3.00	1330.42	992.34	416.75
10	12.96	85.17	3.00	1374.94	1012.16	425.07
11	16.28	88.07	3.00	1396.55	1021.78	429.11
12	19.61	90.93	3.00	1396.49	1021.76	429.10
13	22.93	93.72	3.00	1375.97	1012.62	425.26
14	26.26	96.45	3.00	1336.22	994.92	417.83
15	29.58	99.10	3.00	1278.52	969.23	407.04
16	32.91	101.66	3.00	1204.17	936.13	393.14
17	36.23	104.13	3.00	1114.58	896.24	376.39
18	39.56	106.50	3.00	1011.23	850.23	357.06
19	42.88	108.75	3.00	895.70	798.79	335.46
20	46.21	109.93	0.21	809.17	760.27	319.28
21	46.21	110.96	2.79	730.42	725.20	304.56
22	49.53	112.90	3.00	530.57	636.23	267.19
23	52.86	114.78	3.00	329.81	546.84	229.65
24	56.18	116.52	3.00	136.34	460.70	193.48
25	59.51	118.12	3.00	-47.05	379.05	159.19
26	62.83	118.90	0.07	-142.16	336.71	141.40

TABLE 6A - Effective and Base Shear Force Data on the 26 Slices

Slice	Alpha	X-Coord.	Base	Effective	Available	Mobilized

No. *	(deg)	Slice Cntr (ft)	Leng. (ft)	Normal Force (lbs)	Shear Force (lbs)	Shear Force (lbs)
1	-13.64	59.97	0.06	7.35	29.01	12.18
2	-13.64	61.43	2.94	754.77	1510.31	634.27
3	-10.32	64.33	3.00	1508.80	1871.76	786.07
4	-6.99	67.29	3.00	2148.50	2156.57	905.68
5	-3.67	70.28	3.00	2689.62	2397.50	1006.86
6	-0.34	73.28	3.00	3139.07	2597.60	1090.89
7	2.98	76.27	3.00	3502.62	2759.47	1158.87
8	6.31	79.26	3.00	3785.22	2885.29	1211.71
9	9.63	82.23	3.00	3991.27	2977.03	1250.24
10	12.96	85.17	3.00	4124.81	3036.48	1275.21
11	16.28	88.07	3.00	4189.65	3065.35	1287.33
12	19.61	90.93	3.00	4189.46	3065.27	1287.29
13	22.93	93.72	3.00	4127.90	3037.86	1275.78
14	26.26	96.45	3.00	4008.67	2984.77	1253.49
15	29.58	99.10	3.00	3835.55	2907.70	1221.12
16	32.91	101.66	3.00	3612.52	2808.40	1179.42
17	36.23	104.13	3.00	3343.75	2688.73	1129.16
18	39.56	106.50	3.00	3033.68	2550.68	1071.19
19	42.88	108.75	3.00	2687.10	2396.38	1006.38
20	46.21	109.93	0.21	172.23	161.82	67.96
21	46.21	110.96	2.79	2035.79	2021.25	848.85
22	49.53	112.90	3.00	1591.72	1908.68	801.57
23	52.86	114.78	3.00	989.42	1640.52	688.95
24	56.18	116.52	3.00	409.02	1382.11	580.43
25	59.51	118.12	3.00	-141.15	1137.16	477.56
26	62.83	118.90	0.07	-9.92	23.49	9.87

Average Effective Normal Stress = 922.6529(psf)
Average Available Shear Strength = 810.7915(psf)
Total Length of Failure Surface = 69.0698(ft)

INPUT PARAMETERS FOR SIMPLIFIED 3D ANALYSIS

Composite Phi (deg)= 41.308
3D Depth (Vertical difference between ends of Slip Surface) = 25.00(ft)

```
     L/D(1): L = 25.00(ft) L/D(2): L = 50.00(ft) L/D(3): L = 75.00(ft)
     L/D(4): L = 100.00(ft) L/D(5): L = 125.00(ft) L/D(6): L = 150.00(ft)

SUM OF MOMENTS =  -0.109727E-03 (ft/lbs);Imbalance (Fraction of Total Weight) =  -0.1675105E-08
SUM OF FORCES = -.762124E-06 (lbs);Imbalance (Fraction of Total Weight) =   -0.1163472E-10

Sum of Available Shear Forces =   56001.19(lbs)

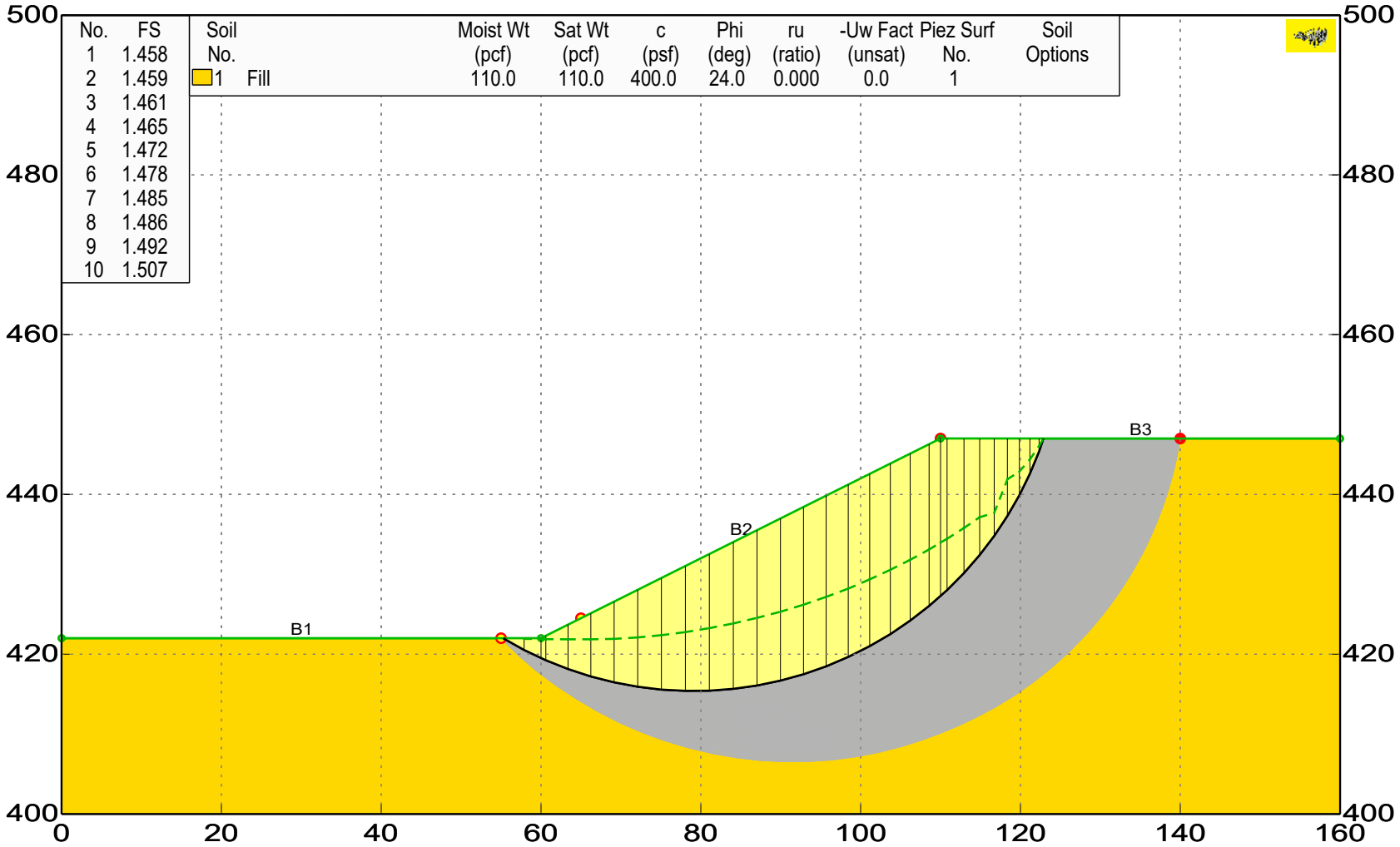
Sum of Mobilized Shear Forces =   23518.32(lbs)

FS Balance Check: FS =  2.381173

                    **** END OF GEOSTASE OUTPUT ****
```

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes (Pseudo-Static)

SA Geotechnical, Inc. \01p.gsd



GEOSTASE FS = 1.458

Spencer Method

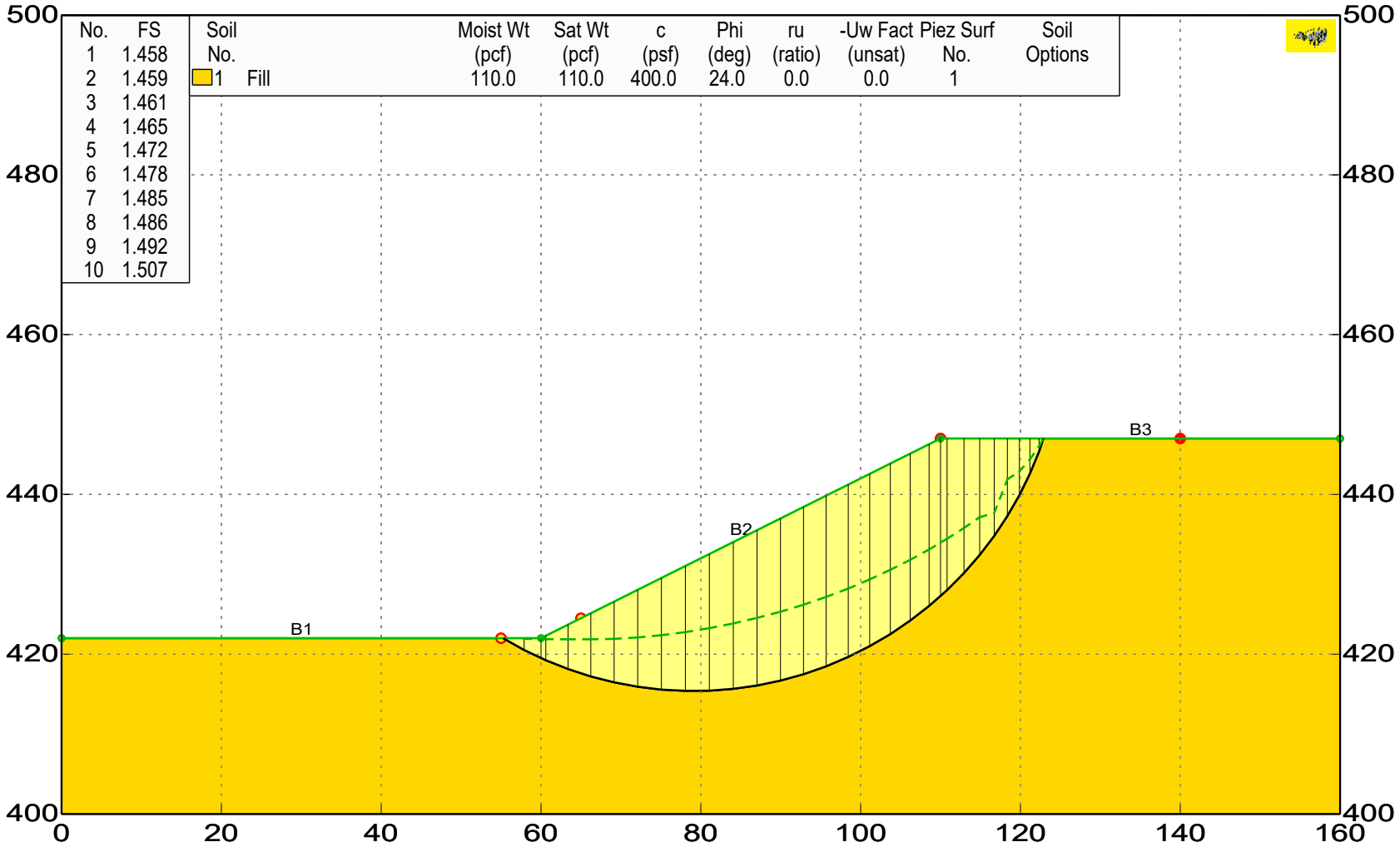
kh = 0.29000

GEOSTASE Slope Stability Analysis

PLATE C.2

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes (Pseudo-Static)

SA Geotechnical, Inc. \01p.gsd



GEOSTASE FS = 1.458

Spencer Method

kh = 0.29000

GEOSTASE Slope Stability Analysis

PLATE C.1

*** GEOSTASE(R) ***

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** Current Version 4.30.32-Double Precision, Sept 2023 **

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SLOPE STABILITY ANALYSIS SOFTWARE (2D & 3D)

Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.

(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)

Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads

Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads

Nonlinear Undrained Shear Strength, Curved Strength Envelope,

Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown

2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

****

Analysis Date: 5/ 28/ 2024

Analysis Time:

Analysis By: SA Geotechnical, Inc.

Input File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01p.gsd

Output File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01p.OUT

Unit System: English

PROJECT: 95 Argonaut. Aliso Viejo

DESCRIPTION: Global Stability of 25' High Slopes (Pseudo-Static)

PROFILE BOUNDARY DATA

3 Surface Boundaries
3 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	422.000	60.000	422.000	1
2	60.000	422.000	110.000	447.000	1
3	110.000	447.000	160.000	447.000	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 400.000(ft)

SURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD
1	0.000	422.000
2	60.000	422.000
3	110.000	447.000
4	160.000	447.000

SUBSURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD

PROFILE BOUNDARY SLOPES AND ANGLES

BND No.	Slope	Angle(Deg.)
1	0.000	0.000
2	0.500	26.565
3	0.000	0.000

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	(-Uw) Fact.	Water Surface No.	Water Option
1 Fill	110.0	110.0	400.00	24.00	0.000	0.0	1	0

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.290(g)
Default Velocity = 1.450(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.29000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.0600(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 55.00(ft)
and X = 65.00(ft)

Each Surface ends within a Range Between X = 110.00(ft)
and X = 140.00(ft)

All surfaces are generated left to right for both a left and right sliding slope.

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 400.00(ft)

Specified Maximum Radius = 100000.000(ft)

3.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Specified Tension Crack Water Depth Factor = 0.000

Total Number of Trial Surfaces Attempted = 2000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.

Number of Trial Surfaces with Non-Converged FS = 1779

Number of Trial Surfaces With Valid FS = 221

Percentage of Trial Surfaces With Non-Converged and/or

Non-Valid FS Solutions of the Total Attempted = 89.0 %

Statistical Data On All Valid FS Values:
FS Max = 1.907 FS Min = 1.458 FS Ave = 1.673
Standard Deviation = 0.100 Coefficient of Variation = 5.97 %

Critical Surface is Sequence Number 8 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 79.072422(ft) ; Y = 461.584595(ft); and Radius = 46.189706(ft)

Circular Trial Failure Surface Generated With 29 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	55.27014	422.00000
2	57.88998	420.53836
3	60.59919	419.24987
4	63.38632	418.13997
5	66.23963	417.21334
6	69.14707	416.47388
7	72.09638	415.92472
8	75.07512	415.56818
9	78.07072	415.40575
10	81.07054	415.43813
11	84.06194	415.66517
12	87.03229	416.08592
13	89.96906	416.69860
14	92.85986	417.50063
15	95.69250	418.48863
16	98.45503	419.65843
17	101.13580	421.00509
18	103.72349	422.52293

19	106.20720	424.20555
20	108.57643	426.04585
21	110.82121	428.03607
22	112.93206	430.16782
23	114.90007	432.43209
24	116.71694	434.81934
25	118.37502	437.31950
26	119.86730	439.92202
27	121.18748	442.61592
28	122.33001	445.38984
29	122.87389	447.00000

Iter. No.	Theta (deg) (fx=1.0)	FS (Moment)	FS (Force)	Lambda	Delta FS
1	15.0000	1.669854	1.332393	0.268	0.3374611E+00
2	19.9500	1.647384	1.378190	0.363	0.2691943E+00
3	39.4653	9.550143	1.745311	0.823	0.7804832E+01
4	19.2530	1.653452	1.371193	0.349	0.2822590E+00
5	18.4988	1.658690	1.363842	0.335	0.2948478E+00
6	36.1598	0.000000	1.641211	0.731	0.1641211E+01
7	21.1879	1.633066	1.391134	0.388	0.2419319E+00
8	23.1140	1.598474	1.412737	0.427	0.1857370E+00
9	29.4789	0.000000	1.501027	0.565	0.1501027E+01
10	23.8147	1.580714	1.421087	0.441	0.1596267E+00
11	24.3602	1.564324	1.427786	0.453	0.1365382E+00
12	27.5854	1.384097	1.471473	0.522	0.8737655E-01
13	26.3271	1.478043	1.453533	0.495	0.2451021E-01
14	26.6029	1.461048	1.457360	0.501	0.3687567E-02
15	26.6518	1.457865	1.458044	0.502	0.1790882E-03
16	26.6495	1.458014	1.458012	0.502	0.1202523E-05
17	26.6495	1.458013	1.458013	0.502	0.3293546E-07

Factor Of Safety For The Preceding Specified Surface = 1.458
Theta (fx = 1.0) = 26.65 Deg Lambda = 0.502

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000 (0.00% Filled)

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 11.199(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)

1	57.89	421.93	0.950	3030.29	1.000	26.65	1359.2
2	60.00	421.91	0.965	5333.39	1.000	26.65	2392.2
3	60.60	421.88	0.863	6054.86	1.000	26.65	2715.8
4	63.39	421.85	0.668	9202.53	1.000	26.65	4127.6
5	66.24	421.85	0.586	12349.95	1.000	26.65	5539.3
6	69.15	421.93	0.540	15298.87	1.000	26.65	6862.0
7	72.10	422.10	0.510	17906.63	1.000	26.65	8031.7
8	75.08	422.38	0.488	20071.76	1.000	26.65	9002.8
9	78.07	422.76	0.471	21725.73	1.000	26.65	9744.7
10	81.07	423.25	0.457	22827.80	1.000	26.65	10239.0
11	84.06	423.84	0.445	23361.35	1.000	26.65	10478.3
12	87.03	424.53	0.435	23331.13	1.000	26.65	10464.7
13	89.97	425.32	0.425	22760.74	1.000	26.65	10208.9
14	92.86	426.20	0.416	21690.43	1.000	26.65	9728.8
15	95.69	427.17	0.407	20174.76	1.000	26.65	9049.0
16	98.46	428.23	0.397	18280.37	1.000	26.65	8199.3
17	101.14	429.36	0.387	16083.52	1.000	26.65	7214.0
18	103.72	430.56	0.377	13667.69	1.000	26.65	6130.4
19	106.21	431.82	0.364	11120.94	1.000	26.65	4988.1
20	108.58	433.12	0.350	8533.38	1.000	26.65	3827.5
21	110.00	433.97	0.339	6906.36	1.000	26.65	3097.7
22	110.82	434.45	0.338	6007.06	1.000	26.65	2694.4
23	112.93	435.81	0.335	3761.86	1.000	26.65	1687.3
24	114.90	437.13	0.323	1902.94	1.000	26.65	853.5
25	116.72	437.71	0.237	481.61	1.000	26.65	216.0
26	118.38	441.92	0.476	-468.44	1.000	26.65	-210.1
27	119.87	442.85	0.413	-932.69	1.000	26.65	-418.3
28	121.19	444.38	0.403	-917.26	1.000	26.65	-411.4
29	122.33	446.06	0.415	-450.28	1.000	26.65	-202.0
30	122.87	447.00	0.000	0.00	1.000	26.65	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 30 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	2.62	0.73	56.58	421.27	422.00	-29.16	0.00	3.00
2	2.11	1.96	58.94	420.04	422.00	-25.44	0.00	2.34
3	0.60	2.76	60.30	419.39	422.15	-25.44	26.57	0.66
4	2.79	4.30	61.99	418.69	423.00	-21.71	26.57	3.00
5	2.85	6.73	64.81	417.68	424.41	-17.99	26.57	3.00
6	2.91	9.00	67.69	416.84	425.85	-14.27	26.57	3.00
7	2.95	11.11	70.62	416.20	427.31	-10.55	26.57	3.00
8	2.98	13.05	73.59	415.75	428.79	-6.83	26.57	3.00
9	3.00	14.80	76.57	415.49	430.29	-3.10	26.57	3.00
10	3.00	16.36	79.57	415.42	431.79	0.62	26.57	3.00
11	2.99	17.73	82.57	415.55	433.28	4.34	26.57	3.00
12	2.97	18.90	85.55	415.88	434.77	8.06	26.57	3.00
13	2.94	19.86	88.50	416.39	436.25	11.78	26.57	3.00
14	2.89	20.61	91.41	417.10	437.71	15.51	26.57	3.00
15	2.83	21.14	94.28	417.99	439.14	19.23	26.57	3.00
16	2.76	21.46	97.07	419.07	440.54	22.95	26.57	3.00
17	2.68	21.57	99.80	420.33	441.90	26.67	26.57	3.00
18	2.59	21.45	102.43	421.76	443.21	30.39	26.57	3.00
19	2.48	21.12	104.97	423.36	444.48	34.12	26.57	3.00
20	2.37	20.57	107.39	425.13	445.70	37.84	26.57	3.00
21	1.42	19.97	109.29	426.68	446.64	41.56	26.57	1.90
22	0.82	19.33	110.41	427.67	447.00	41.56	0.00	1.10
23	2.11	17.90	111.88	429.10	447.00	45.28	0.00	3.00
24	1.97	15.70	113.92	431.30	447.00	49.00	0.00	3.00
25	1.82	13.37	115.81	433.63	447.00	52.73	0.00	3.00
26	1.66	10.93	117.55	436.07	447.00	56.45	0.00	3.00
27	1.49	8.38	119.12	438.62	447.00	60.17	0.00	3.00
28	1.32	5.73	120.53	441.27	447.00	63.89	0.00	3.00
29	1.14	3.00	121.76	444.00	447.00	67.61	0.00	3.00
30	0.54	0.81	122.60	446.19	447.00	71.34	0.00	1.70

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	55.270135	422.000000
2	57.889984	420.538361
3	60.000000	419.534845
4	60.599191	419.249872
5	63.386325	418.139971
6	66.239630	417.213338
7	69.147070	416.473882
8	72.096379	415.924724
9	75.075116	415.568179
10	78.070716	415.405751
11	81.070541	415.438127
12	84.061938	415.665168
13	87.032286	416.085918
14	89.969056	416.698602
15	92.859860	417.500635
16	95.692501	418.488633
17	98.455032	419.658429
18	101.135799	421.005088
19	103.723492	422.522929
20	106.207197	424.205550
21	108.576434	426.045852
22	110.000000	427.307986
23	110.821211	428.036073
24	112.932058	430.167815
25	114.900069	432.432088
26	116.716944	434.819339
27	118.375017	437.319497
28	119.867295	439.922017
29	121.187482	442.615918
30	122.330009	445.389838
31	122.873887	447.000000

Table 3 - Force and Pore Pressure Data On The 30 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	-Uw (psf)	Earthquake Force Horiz (lbs)	Earthquake Force Vert (lbs)	Distributed Load (psf)
1	210.6	0.0	0.0	0.0	0.00	0.00	61.1	0.0	0.00
2	455.7	0.0	0.0	0.0	0.00	0.00	132.2	0.0	0.00
3	181.7	0.0	0.0	0.0	0.00	0.00	52.7	0.0	0.00
4	1318.8	0.0	0.0	0.0	0.00	0.00	382.4	0.0	0.00
5	2112.3	0.0	0.0	0.0	0.00	0.00	612.6	0.0	0.00
6	2879.3	0.0	0.0	0.0	0.00	0.00	835.0	0.0	0.00
7	3604.9	0.0	0.0	0.0	0.00	0.00	1045.4	0.0	0.00
8	4274.8	0.0	0.0	0.0	0.00	0.00	1239.7	0.0	0.00
9	4876.7	0.0	0.0	0.0	0.00	0.00	1414.2	0.0	0.00
10	5399.6	0.0	0.0	0.0	0.00	0.00	1565.9	0.0	0.00
11	5834.6	0.0	0.0	0.0	0.00	0.00	1692.0	0.0	0.00
12	6174.7	0.0	0.0	0.0	0.00	0.00	1790.7	0.0	0.00
13	6415.0	0.0	0.0	0.0	0.00	0.00	1860.4	0.0	0.00
14	6553.0	0.0	0.0	0.0	0.00	0.00	1900.4	0.0	0.00
15	6588.1	0.0	0.0	0.0	0.00	0.00	1910.5	0.0	0.00
16	6522.2	0.0	0.0	0.0	0.00	0.00	1891.5	0.0	0.00
17	6359.5	0.0	0.0	0.0	0.00	0.00	1844.2	0.0	0.00
18	6105.9	0.0	0.0	0.0	0.00	0.00	1770.7	0.0	0.00
19	5769.7	0.0	0.0	0.0	0.00	0.00	1673.2	0.0	0.00
20	5360.9	0.0	0.0	0.0	0.00	0.00	1554.7	0.0	0.00
21	3126.7	0.0	0.0	0.0	0.00	0.00	906.7	0.0	0.00
22	1746.0	0.0	0.0	0.0	0.00	0.00	506.3	0.0	0.00
23	4155.8	0.0	0.0	0.0	0.00	0.00	1205.2	0.0	0.00
24	3398.8	0.0	0.0	0.0	0.00	0.00	985.6	0.0	0.00
25	2672.9	0.0	0.0	0.0	0.00	0.00	775.2	0.0	0.00
26	1993.6	0.0	0.0	0.0	0.00	0.00	578.1	0.0	0.00
27	1375.5	0.0	0.0	0.0	0.00	0.00	398.9	0.0	0.00
28	832.3	0.0	0.0	0.0	0.00	0.00	241.4	0.0	0.00
29	376.7	0.0	0.0	0.0	0.00	0.00	109.2	0.0	0.00
30	48.2	0.0	0.0	0.0	0.00	0.00	14.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 106724.37(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 106724.37(lbs)

TOTAL AREA OF SLIDING MASS = 970.22(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 30 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	400.00	24.00	
2	1	400.00	24.00	
3	1	400.00	24.00	
4	1	400.00	24.00	
5	1	400.00	24.00	
6	1	400.00	24.00	
7	1	400.00	24.00	
8	1	400.00	24.00	
9	1	400.00	24.00	
10	1	400.00	24.00	
11	1	400.00	24.00	
12	1	400.00	24.00	
13	1	400.00	24.00	
14	1	400.00	24.00	
15	1	400.00	24.00	
16	1	400.00	24.00	
17	1	400.00	24.00	
18	1	400.00	24.00	
19	1	400.00	24.00	
20	1	400.00	24.00	
21	1	400.00	24.00	
22	1	400.00	24.00	
23	1	400.00	24.00	
24	1	400.00	24.00	
25	1	400.00	24.00	
26	1	400.00	24.00	
27	1	400.00	24.00	
28	1	400.00	24.00	
29	1	400.00	24.00	

30 1 400.00 24.00

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH
N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
S = SHANSEP UNDRAINED SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-29.16	56.58	3.00	906.73	80.39	11.279
2	-25.44	58.94	2.34	978.07	215.97	4.529
3	-25.44	60.30	0.66	1139.32	303.32	3.756
4	-21.71	61.99	3.00	1239.72	473.16	2.620
5	-17.99	64.81	3.00	1469.91	740.28	1.986
6	-14.27	67.69	3.00	1642.62	990.34	1.659
7	-10.55	70.62	3.00	1770.62	1222.27	1.449
8	-6.83	73.59	3.00	1862.02	1435.11	1.297
9	-3.10	76.57	3.00	1922.30	1627.94	1.181
10	0.62	79.57	3.00	1955.35	1799.97	1.086
11	4.34	82.57	3.00	1964.12	1950.46	1.007
12	8.06	85.55	3.00	1950.97	2078.78	0.939
13	11.78	88.50	3.00	1917.86	2184.39	0.878
14	15.51	91.41	3.00	1866.52	2266.84	0.823
15	19.23	94.28	3.00	1798.53	2325.78	0.773
16	22.95	97.07	3.00	1715.40	2360.97	0.727
17	26.67	99.80	3.00	1618.59	2372.25	0.682

18	30.39	102.43	3.00	1509.54	2359.59	0.640
19	34.12	104.97	3.00	1389.75	2323.03	0.598
20	37.84	107.39	3.00	1260.73	2262.72	0.557
21	41.56	109.29	1.90	1133.61	2196.39	0.516
22	41.56	110.41	1.10	1095.16	2126.08	0.515
23	45.28	111.88	3.00	928.35	1968.79	0.472
24	49.00	113.92	3.00	730.90	1727.01	0.423
25	52.73	115.81	3.00	542.25	1471.17	0.369
26	56.45	117.55	3.00	364.05	1202.36	0.303
27	60.17	119.12	3.00	198.18	921.72	0.215
28	63.89	120.53	3.00	46.73	630.41	0.074
29	67.61	121.76	3.00	-87.90	329.68	-0.267
30	71.34	122.60	1.70	-185.03	88.56	-2.089

TABLE 5A - Total Base Force Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-29.16	56.58	3.00	2720.19	210.61	12.916
2	-25.44	58.94	2.34	2285.27	455.71	5.015
3	-25.44	60.30	0.66	755.95	181.75	4.159
4	-21.71	61.99	3.00	3719.16	1318.76	2.820
5	-17.99	64.81	3.00	4409.74	2112.25	2.088
6	-14.27	67.69	3.00	4927.85	2879.35	1.711
7	-10.55	70.62	3.00	5311.86	3604.86	1.474
8	-6.83	73.59	3.00	5586.07	4274.81	1.307
9	-3.10	76.57	3.00	5766.89	4876.67	1.183
10	0.62	79.57	3.00	5866.04	5399.60	1.086
11	4.34	82.57	3.00	5892.36	5834.60	1.010
12	8.06	85.55	3.00	5852.90	6174.70	0.948
13	11.78	88.50	3.00	5753.57	6415.05	0.897
14	15.51	91.41	3.00	5599.56	6552.98	0.855
15	19.23	94.28	3.00	5395.60	6588.10	0.819
16	22.95	97.07	3.00	5146.21	6522.25	0.789
17	26.67	99.80	3.00	4855.76	6359.46	0.764

18	30.39	102.43	3.00	4528.62	6105.89	0.742
19	34.12	104.97	3.00	4169.24	5769.71	0.723
20	37.84	107.39	3.00	3782.18	5360.93	0.706
21	41.56	109.29	1.90	2156.70	3126.71	0.690
22	41.56	110.41	1.10	1201.93	1745.96	0.688
23	45.28	111.88	3.00	2785.05	4155.81	0.670
24	49.00	113.92	3.00	2192.70	3398.77	0.645
25	52.73	115.81	3.00	1626.75	2672.93	0.609
26	56.45	117.55	3.00	1092.16	1993.61	0.548
27	60.17	119.12	3.00	594.53	1375.46	0.432
28	63.89	120.53	3.00	140.18	832.26	0.168
29	67.61	121.76	3.00	-263.70	376.67	-0.700
30	71.34	122.60	1.70	-314.47	48.17	-6.529



TABLE 6 - Effective and Base Shear Stress Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-29.16	56.58	3.00	906.73	803.70	551.23
2	-25.44	58.94	2.34	978.07	835.47	573.02
3	-25.44	60.30	0.66	1139.32	907.26	622.26
4	-21.71	61.99	3.00	1239.72	951.96	652.92
5	-17.99	64.81	3.00	1469.91	1054.45	723.21
6	-14.27	67.69	3.00	1642.62	1131.34	775.95
7	-10.55	70.62	3.00	1770.62	1188.33	815.03
8	-6.83	73.59	3.00	1862.02	1229.03	842.95
9	-3.10	76.57	3.00	1922.30	1255.86	861.35
10	0.62	79.57	3.00	1955.35	1270.58	871.44
11	4.34	82.57	3.00	1964.12	1274.48	874.12
12	8.06	85.55	3.00	1950.97	1268.63	870.11
13	11.78	88.50	3.00	1917.86	1253.88	860.00
14	15.51	91.41	3.00	1866.52	1231.03	844.32
15	19.23	94.28	3.00	1798.53	1200.76	823.56
16	22.95	97.07	3.00	1715.40	1163.75	798.17
17	26.67	99.80	3.00	1618.59	1120.64	768.61

18	30.39	102.43	3.00	1509.54	1072.09	735.31
19	34.12	104.97	3.00	1389.75	1018.76	698.73
20	37.84	107.39	3.00	1260.73	961.31	659.33
21	41.56	109.29	1.90	1133.61	904.72	620.51
22	41.56	110.41	1.10	1095.16	887.60	608.77
23	45.28	111.88	3.00	928.35	813.33	557.83
24	49.00	113.92	3.00	730.90	725.42	497.54
25	52.73	115.81	3.00	542.25	641.42	439.93
26	56.45	117.55	3.00	364.05	562.09	385.52
27	60.17	119.12	3.00	198.18	488.23	334.86
28	63.89	120.53	3.00	46.73	420.80	288.61
29	67.61	121.76	3.00	-87.90	360.86	247.50
30	71.34	122.60	1.70	-185.03	317.62	217.84

TABLE 6A - Effective and Base Shear Force Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-29.16	56.58	3.00	2720.19	2411.11	1653.69
2	-25.44	58.94	2.34	2285.27	1952.06	1338.85
3	-25.44	60.30	0.66	755.95	601.97	412.87
4	-21.71	61.99	3.00	3719.16	2855.88	1958.75
5	-17.99	64.81	3.00	4409.74	3163.34	2169.63
6	-14.27	67.69	3.00	4927.85	3394.02	2327.84
7	-10.55	70.62	3.00	5311.86	3564.99	2445.10
8	-6.83	73.59	3.00	5586.07	3687.08	2528.84
9	-3.10	76.57	3.00	5766.89	3767.59	2584.06
10	0.62	79.57	3.00	5866.04	3811.73	2614.33
11	4.34	82.57	3.00	5892.36	3823.45	2622.37
12	8.06	85.55	3.00	5852.90	3805.88	2610.32
13	11.78	88.50	3.00	5753.57	3761.65	2579.99
14	15.51	91.41	3.00	5599.56	3693.08	2532.96
15	19.23	94.28	3.00	5395.60	3602.28	2470.68
16	22.95	97.07	3.00	5146.21	3491.24	2394.52
17	26.67	99.80	3.00	4855.76	3361.92	2305.83

18	30.39	102.43	3.00	4528.62	3216.27	2205.93
19	34.12	104.97	3.00	4169.24	3056.27	2096.19
20	37.84	107.39	3.00	3782.18	2883.93	1977.99
21	41.56	109.29	1.90	2156.70	1721.23	1180.53
22	41.56	110.41	1.10	1201.93	974.13	668.12
23	45.28	111.88	3.00	2785.05	2439.98	1673.50
24	49.00	113.92	3.00	2192.70	2176.25	1492.62
25	52.73	115.81	3.00	1626.75	1924.27	1319.79
26	56.45	117.55	3.00	1092.16	1686.26	1156.55
27	60.17	119.12	3.00	594.53	1464.70	1004.59
28	63.89	120.53	3.00	140.18	1262.41	865.84
29	67.61	121.76	3.00	-263.70	1082.59	742.51
30	71.34	122.60	1.70	-314.47	539.80	370.23

Average Effective Normal Stress = 1251.9641(psf)
Average Available Shear Strength = 957.4103(psf)
Total Length of Failure Surface = 82.6995(ft)

INPUT PARAMETERS FOR SIMPLIFIED 3D ANALYSIS

Composite Phi (deg)= 37.406
3D Depth (Vertical difference between ends of Slip Surface) = 25.00(ft)
L/D(1): L = 25.00(ft) L/D(2): L = 50.00(ft) L/D(3): L = 75.00(ft)
L/D(4): L = 100.00(ft) L/D(5): L = 125.00(ft) L/D(6): L = 150.00(ft)

Average Elevation of Point of Application of kh on Sliding Mass = 430.801(ft)

SUM OF MOMENTS = -0.324693E-03 (ft/lbs);Imbalance (Fraction of Total Weight) = -0.3042346E-08
SUM OF FORCES = -.196472E-04 (lbs);Imbalance (Fraction of Total Weight) = -0.1840930E-09

Sum of Available Shear Forces = 79177.39(lbs)

Sum of Mobilized Shear Forces = 54305.01(lbs)

FS Balance Check: FS = 1.458013

**** END OF GEOSTASE OUTPUT ****

Appendix F

APPENDIX E

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

1.0 GENERAL

1.1 **Intent:** These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these general Specifications. Observations of the earthwork by the project Geotechnical Consultant during grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 **Geotechnical Consultant:** Prior to commencement of work, the project owner shall employ a geotechnical consultant. The geotechnical consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all keyway bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of subgrade and fill materials and perform adequate relative compaction testing of fill to determine the attained level of compaction and assess if, in their opinion, if the work was performed in substantial compliance

with the geotechnical report(s) and these specifications. The Geotechnical Consultant shall provide test results to the owner on a routine and frequent basis.

1.3 The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with applicable grading codes, the project plans, and these specifications.

The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork planned for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are corrected.

2.0 PREPARATION OF FILL AREAS

2.1 Clearing and Grubbing: Areas to be excavated and filled shall be cleared and grubbed. Vegetation, such as brush, grass, roots, and other deleterious material, man-made structures, and similar debris shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant. Borrow areas shall be cleared and grubbed to the extent necessary to provide a suitable fill material.

Concrete fragments that are free of reinforcing street may be placed in fills, provided they are placed in accordance with Section 3 and 4. Earth fill material

shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent organic matter. Nesting of organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area. As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, etc.) have chemical constituents that are considered hazardous waste. As such, the indiscriminate dumping or spillage of such fluids may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

The Geotechnical Consultant shall not be responsible for the identification or analysis of potentially hazardous materials; however, if observations, odors, or soil discoloration are suspect, the Geotechnical Consultant may request from the owner the termination of grading operations until such materials are deemed not hazardous as defined by applicable laws and regulations.

2.2 **Evaluation/Acceptance of Fill Areas:** All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

2.3 **Processing:** Ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Ground that is not satisfactory shall be removed/overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction. After scarification, the surface should be moisture conditioned, as necessary, to achieve the proper moisture content and compacted in accordance with Section 4 of these specifications.

2.4 **Overexcavation:** In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured, or otherwise unsuitable ground shall be overexcavated to competent ground as recommended by the Geotechnical Consultant during grading.

2.5 **Benching:** Fills to be placed on ground sloping steeper than 5H:1V (horizontal to vertical units) shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for fill placement.

3.0 FILL MATERIAL

3.1 **General:** Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 **Oversize:** Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 12 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or other underground construction.

3.3 **Import:** If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1 and/or requirements defined in the project geotechnical report(s). The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before import begins so that suitability can be determined, and appropriate laboratory tests performed.

4.0 FILL PLACEMENT AND COMPACTION

4.1 **Fill Layers:** Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 **Fill Moisture Conditioning:** Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with ASTM International (ASTM Test Method D1557).

4.3 **Compaction of Fill:** After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction and uniformity.

Compaction of Fill Slopes: In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.4 **Compaction Testing:** Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.5 **Frequency of Compaction Testing:** Tests shall be taken at intervals required by the governing agency and as deemed necessary by the Geotechnical Consultant in order to adequately qualify the fill material. In general, it should be anticipated that tests will be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill, unless recommended otherwise by the Geotechnical Consultant. In addition, test(s) shall be taken on slope faces and/or each 10 feet of vertical height of slope as deemed necessary by the Geotechnical Consultant. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.6 **<u>Compaction Test Locations</u>:** The Geotechnical Consultant shall document the approximate elevation and location of each compaction test. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided. Alternatively, GPS units may be used to determine the approximate location/coordinates of the field density tests.

5.0 SUBDRAIN INSTALLATION

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and standard details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys. The Contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The Contractor is responsible for the performance of subdrains.

6.0 EXCAVATION

Excavations, including over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical report(s) and plans are estimates. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 TRENCH BACKFILLS

7.1 Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

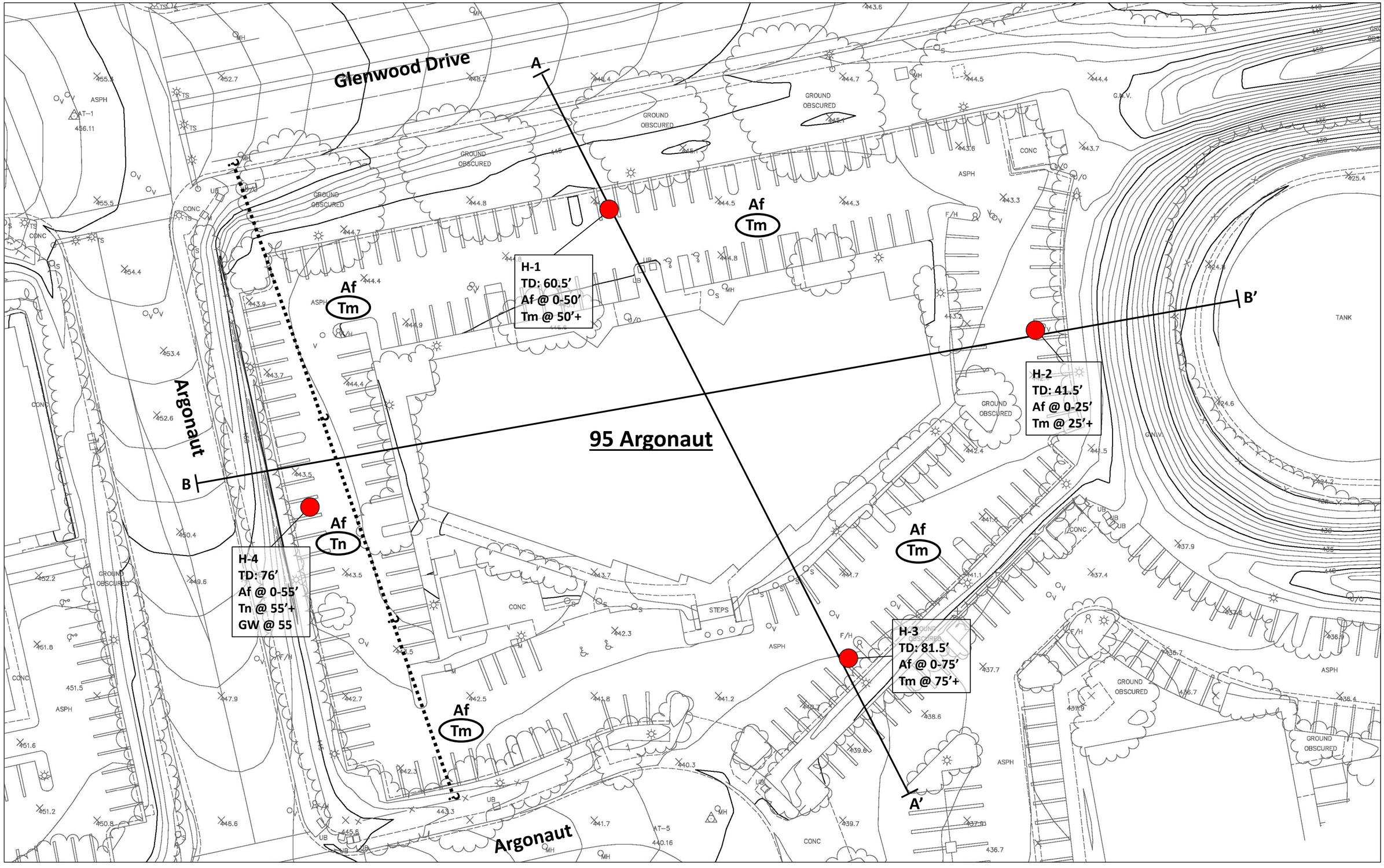
7.2 Bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum 90 percent of maximum from 1 foot above the top of the conduit to the surface, except in traveled ways (see Section 7.6 below).

7.3 Jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

7.4 Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill, unless required differently by the governing agency or the Geotechnical Consultant.

7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

7.6 Trench backfill in the upper foot measured from finish grade within existing or future traveled way, shoulder, and other paved areas (or areas to receive pavement) should be placed to a minimum 95 percent relative compaction.



Basemap Source: X Engineering & Consulting (May 2024)

LEGEND

H-4
TD: 76'
Af @ 0-55'
Tn @ 55'+
GW @ 55'

Approximate Location of Hollow Stem Auger Boring, Showing Total Depth, Depth to Earth Units, and Depth to Groundwater in Feet.

B — **B'** Geotechnical Cross-Section

Earth Units - *Circled Where Buried*

Af Artificial Fill
Tm Monterey Formation
Tn Niguel Formation

Symbols – *Locations are Approximate*

— — ····· Fault, Dotted Where Buried

North

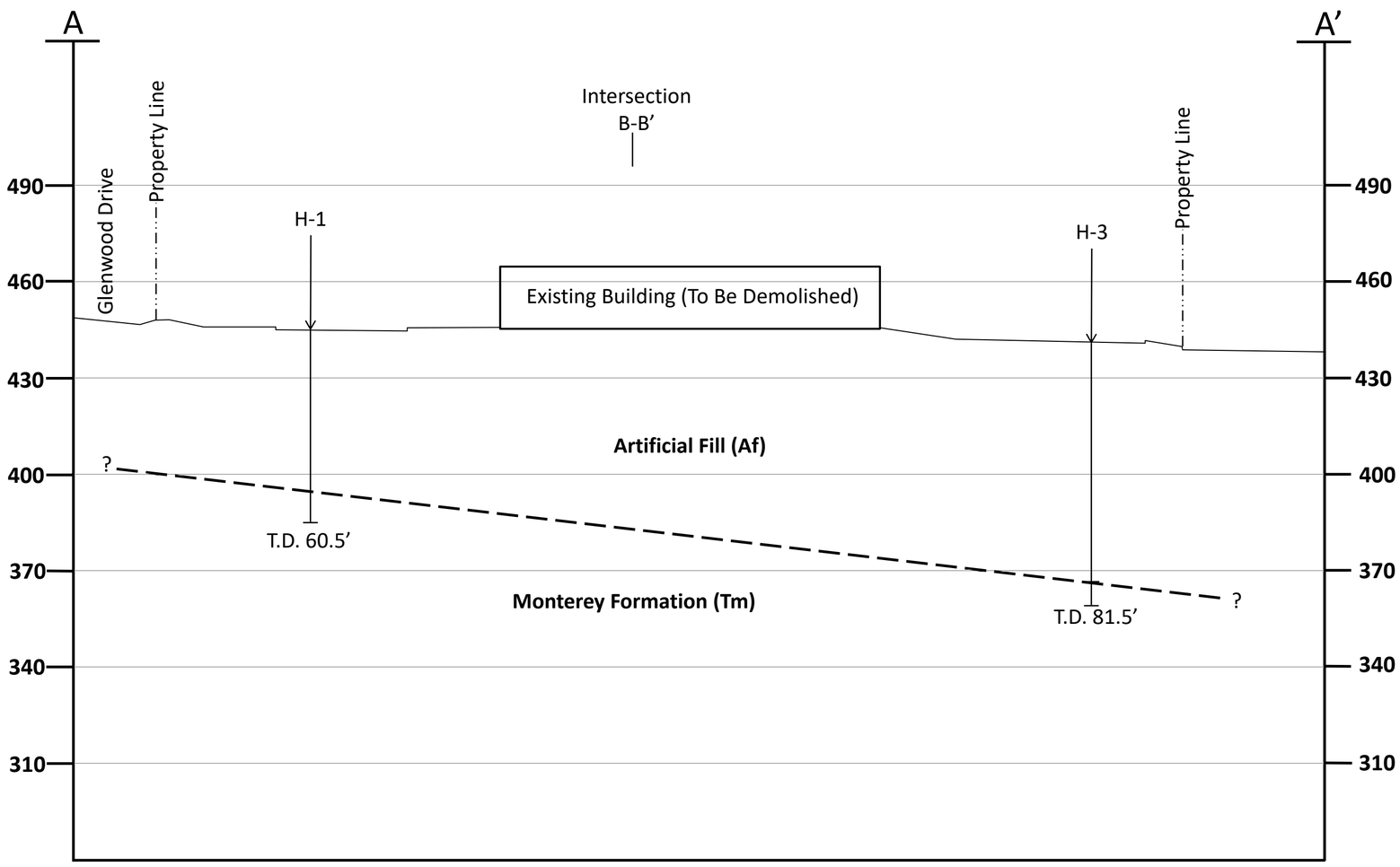
Scale: 1" = 30'
(On 18"x24" Plot)

GEOTECHNICAL MAP

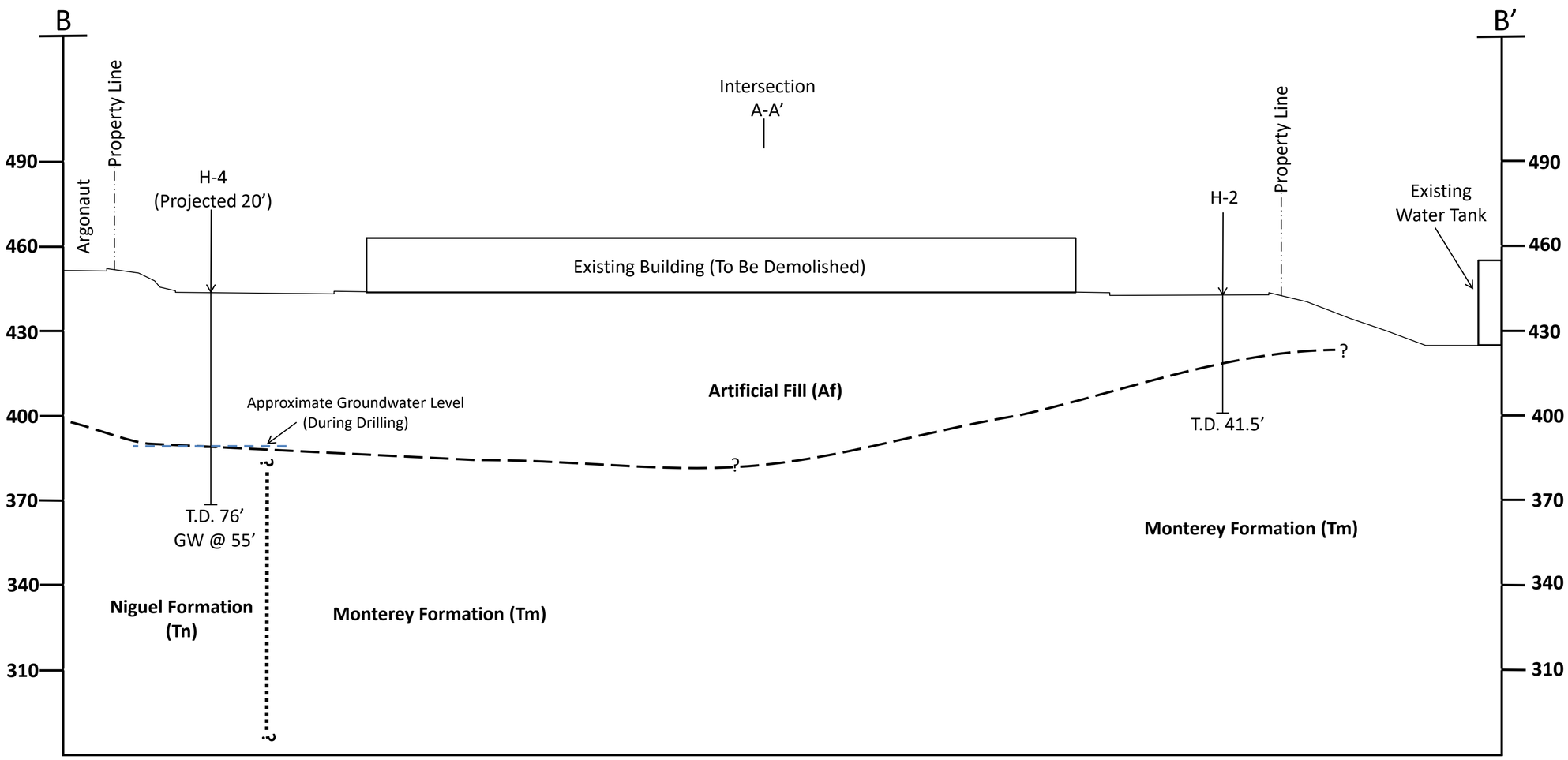
Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01
Date: May 31, 2024
Plate 1

S/A



Legend	Geotechnical Cross-Section A-A'	
N27W Scale: 1 inch=30 feet	Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Plate 2



Legend	Geotechnical Cross-Section B-B'	
N80E →	Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Plate 3
Scale: 1 inch=30 feet		

Preliminary Water Quality Management Plan (PWQMP)

Project Name:

Argonaut

TTM 19340

Prepared for:

Meritage Homes

5 Peters Canyon Road

Irvine, CA 92606

855-588-6374

Prepared by:

X Engineering & Consulting, Inc.

Engineer: Eric Lissner, P.E.

Registration No. 84264

6 Hutton Centre Drive, Suite 650

Santa Ana, CA 92707

949-522-1700

eric.lissner@xengineeringinc.com

Engineer's Seal



Prepared on:

September 05, 2024

Project Owner's Certification			
Permit/Application No.	TBD	Grading Permit No.	TBD
Tract/Parcel Map No.	TTM 19340	Building Permit No.	TBD
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract)			APN: 141-521-48

This Water Quality Management Plan (WQMP) has been prepared for Meritage Homes by X Engineering & Consulting, Inc. The WQMP is intended to comply with the requirements of the local NPDES Stormwater Program requiring the preparation of the plan.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the San Diego Region (South Orange County). Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Owner:			
Title	Ms. Johanna Crooker		
Company	Meritage Homes		
Address	5 Peters Canyon Road, Suite 310, Irvine, CA 92806		
Email	Johanna.Crooker@mlcholdings.net		
Telephone #	855-588-6374		
Signature		Date	

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Section 1 Discretionary Permit(s) and Water Quality Conditions

Project Infomation			
Permit/Application No.	TBD	Site Address or Tract/Parcel Map No.	95 Argonaut, Aliso Viejo, CA 92656 APN: 141-521-48
Additional Information/ Comments:	TTM 19340		
Water Quality Conditions			
Water Quality Conditions from prior approvals or applicable watershed-based plans	*Pending, to be included in the Final WQMP.*		

Section 2 Project Description

2.1 General Description

Description of Proposed Project				
Site Location	95 Argonaut, Aliso Viejo, CA 92656			
Project Area (ft^2): _____	Number of Dwelling Units: __62_____		SIC Code: _____	
Narrative Project Description:	This priority redevelopment project consists of the removal of an existing commercial building for the construction of a housing development. The completed project will consist of 61 dwelling units in 8 separate buildings within the property. There will be 140 parking spaces including 124 for garage parking. 20,945-square feet of open space is provided in this development. This project qualifies as a priority project due to the creation and replacement of more than 10,000-square feet of impervious surface.			
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	28,749	24	88,863	76
Post-Project Conditions	24,585	21	93,027	79

2.2 Post Development Drainage Characteristics

The proposed condition drainage will mimic the existing condition drainage to the maximum extent possible. Runoff generally flows from north to south. Proposed condition drainage generally concentrates sheet flow into drainage inlets, catch basins, and routes it into subsurface storm drainage pipes. Runoff is conveyed to dual MWS-L-8-16-V units for water quality treatment of the 85th percentile, 24-hour storm event. Stormwater flows exceeding this value, including flows from the MWS will then be routed into a subsurface detention facility with a flow control outlet orifice suitable for mitigating hydromodification and peak stormwater flows.

The project is not covered by an existing WQMP and is not subject to cross-lot drainage. There are no existing stormwater BMPs onsite.

2.3 Property Ownership/Management

This project is owned by Meritage Homes.

Section 3 Site & Watershed Characterization

3.1 Site Conditions

3.1.1 Existing Site Conditions

The existing condition is fully developed as a commercial site. It consists of one large commercial building with a parking lot and surrounding landscape planters. The existing site drainage is split into stormwater flowing east and west essentially down the middle of the property. Stormwater sheet flows in both directions at an approximately 1 to 2% slope into perimeter gutters along the edge of the existing parking lot. Gutter flow concentrates into two culverts at the south end of the property on each side of the entry driveway. Stormwater enters the gutter at the knuckle of Argonaut and flows south until reaching a catch basin approximately 250-feet south of the site.

In the existing condition, approximately 0.07 acres located at the northeast corner of the site, drains into the project area. In the proposed condition, this region is graded towards the sidewalk away from the site and to the gutter. It drains through a self-treating landscaping area. The flow contributing to the gutter is deemed negligible.

Stormwater enters an existing 39-inch storm drain flowing southeast which eventually becomes a 78-inch storm drain. The 78-inch storm drain then drains at a rip rap energy dissipation structure before entering Aliso Creek. Aliso Creek flows southwest and enters the Pacific Ocean in South Laguna Beach.

This project is not covered by an existing WQMP. No cross-lot drainage or stormwater run-on flows enter the site. There are no existing stormwater BMPs in place onsite.

Existing Land Uses

Land Use Description	Total Area (acres)	Impervious Area (acres)	Pervious Area (acres)	Imperviousness (%)
Commercial	2.77	2.01	0.76	73%
Total	2.77	2.01	0.76	73%

3.1.2 Infiltration-Related Characteristics

3.1.2.1 Hydrogeologic Conditions

Groundwater was encountered during subsurface exploration by SA Geotechnical at a depth of 55-feet below ground surface (bgs). Historic high groundwater has been measured at 20-feet bgs.

However, it is noted that the historic high groundwater measurements were measured below original grades prior to mass grading in the 1980s. It is expected that groundwater will remain deep below the site (SA Geotechnical 2024).

3.1.2.2 Soil and Geologic Infiltration Characteristics

The SA Geotechnical report indicates that stormwater infiltration is not recommended for this project. The site is underlain by silty/clayey engineered fill up to 75 feet thick overlying bedrock. Additionally, the native hydrologic soil classification is HSG D (**Attachment D1**).

3.1.2.3 Geotechnical Conditions

The project is not within a potential liquefaction hazard zone. The site is located on flat terrain that has no slope stability concerns. However, onsite soils are anticipated to have high expansion potential at grading completion.

3.1.2.4 Summary of Infiltration Opportunities and Constraints of Existing Site

Due to the geotechnical constraints previously mentioned, infiltration is not recommended onsite. The presence of compacted silty/clayey engineered fill, HSG D soil group, and deep groundwater suggest that infiltration is not suitable at this site.

3.2 Proposed Site Development Activities

3.2.1 Overview of Site Development Activities

The housing redevelopment project will construct 8 new buildings, new landscaping, and private streets. The proposed construction is replacing the existing single 2-story commercial building and parking lot.

3.2.2 Project Attributes Influencing Stormwater Management

The proposed residential development will retain the same drainage pattern of the existing condition with stormwater flowing north to south. Slope and grade changes will be minimal. 61 dwelling units are planned for the community within 8 buildings. The proposed landscaping will be California friendly, drought resistant plants. The overall pervious landscape will be slightly reduced from the existing condition (27 % pervious) to the proposed condition (20 % pervious).

No SIC codes have been applied to the site. Waste generated from the site will be general household waste, not including any hazardous waste.

Proposed Land Uses

Land Use Description	Total Area (acres)	Impervious Area (acres)	Pervious Area (acres)	Imperviousness (%)
Residential	2.7	2.15	0.55	79.6

3.2.3 Effects on Infiltration and Harvest and Use Feasibility

Infiltration is not recommended for the site due to low infiltration rates of existing compacted engineered fill and the presence of HSG class D soil. Harvest and use for the planned community is not feasible due to lack of space.

3.3 Receiving Waterbodies

The project drains to the public storm drain which in turn drains to Aliso Creek prior to discharge into the Pacific Ocean. 303(d) listings associated with Aliso Creek along with the SWRCB decision ID are phosphorous (111092), nitrogen (127601), selenium (111093), benthic community effects (125926), toxicity (111095), indicator bacteria (79858), and malathion (81901).

3.4 Stormwater Pollutants or Conditions of Concern

Pollutants or Conditions of Concern

Pollutant	Expected from Proposed Land Uses/Activities (Yes or No)	Receiving Waterbody Impaired (Yes or No)	Priority Pollutant from WQIP or other Water Quality Condition? (Yes or No)	**Pollutant of Concern (Primary, Other, or No)**
Suspended-Solids	Yes	No	No	Other
Nutrients	Yes	Yes	No	Primary
Heavy Metals	Yes	No	No	Other
Bacteria/Virus/Pathogens	Yes	Yes	Yes	Primary
Pesticides	Yes	No	No	No
Oil and Grease	Yes	No	No	Other
Toxic Organic Compounds	Yes	No	No	Other
Trash and Debris	Yes	No	No	Other
Dry Weather Runoff	Yes	No	Yes	Primary

3.5 Hydrologic Conditions of Concern

Does a hydrologic condition of concern exist for this project?

☐ No – An HCOC does not exist for this receiving water because *(select one)*:

- ☐ Project discharges directly to a protected conveyance (bed and bank are concrete lined the entire way from the point(s) of discharge to a receiving lake, reservoir, embayment, or the Ocean
- ☐ Project discharges directly to storm drains which discharge directly to a reservoir, lake, embayment, ocean or protected conveyance (as described above)
- ☐ The project discharges to an area identified in the WMAA as exempt from hydromodification concerns

☒ Yes – An HCOC does exist for this receiving water because none of the above are applicable.

Repeat this checklist for each different receiving water to which the project would discharge.

3.6 Critical Course Sediment Yield Areas

Critical coarse sediment provisions do not apply to this project (redevelopment of an existing developed site). Site is also not listed within the Potential Coarse Sediment area on the OCPW Potential Coarse Sediment Map of Aliso Creek (**Attachment D2**).

Section 4 Site Plan and Drainage Plan

4.1 Drainage Management Area Delineation

One DMA is designated for this project. See attached **DMA Exhibit**.

The site DMA consists of 8 new two-story buildings containing 61 dwelling units, hardscape, and drought resistant landscaping. All drainage is intercepted by inlet drains, roof drains, catch basins and conveyed through subsurface storm drains. Drainage is directed to the southeast portion of the site to be treated in two MWS-L-8-16-V modular wetland systems (MWS). Any water flowing through the MWS as well as stormwater peak flows exceeding the 85th percentile water quality design volume will be routed through a subsurface detention vault.

4.2 Overall Site Design BMPs

Minimize Impervious Area - Impervious areas will be minimized through provision of landscaped areas to the maximum extent possible.

Maximize Natural Infiltration Capacity - Infiltration is not recommended on site as referenced in the geotechnical report. However, natural infiltration is maximized in landscaped areas to the maximum extent possible.

Preserve Existing Drainage Patterns and Time of Concentration - Existing drainage patterns are preserved with routing stormwater flows from north to south. The proposed condition will use a subsurface detention/hydromodification vault that will increase the time of concentration comparable to the existing condition.

Disconnect Impervious Areas - Runoff from impervious areas will be dispersed to landscaped areas to the maximum extent possible.

Protect Existing Vegetation and Sensitive Areas - Existing vegetation will be preserved to the maximum extent possible. The remaining areas will be replaced by drought tolerant vegetation. There are no sensitive areas for this project.

Revegetate Disturbed Areas - Disturbed areas will be hardscaped and landscaped.

Soil Stockpiling and Site Generated Organics – No organic wastes are anticipated for the project. Soil stockpiling is to be managed through erosion and sediment control plans.

Firescaping - Drought resistant landscaping and firescaping measures will be incorporated to the maximum extent possible.

Water Efficient Landscaping - Water-efficient irrigation methods will be implemented on proposed landscaping.

Slopes and Channel Buffers - Not applicable for this project as the proposed project area is very flat with slopes between 1 to 2 %.

4.3 DMA Characteristics and Site Design BMPs

4.3.1 DMA 1

The entire residential community has been graded to drain to two LID BMPs located in the southeast corner of the project. Stormwater peak flows will be conveyed to a Modular Wetland System MWS-L- 8-16-V for water quality treating the 85th percentile 24-hour storm event. Overflow during heavy storm events will be bypassed through an internal weir within each MWS. Treated stormwater and bypassed flow will be routed to the subsurface detention basin for hydromodification management and attenuating peak flows before exiting to the public 24-inch storm drain along Argonaut.

The site will be developed as a residential property with approximately 80% imperviousness (2.15-acres) and 25% perviousness (0.55-acres). The DMA is very flat with average slopes between 1-2%. Anticipated pollutants generated from this site are suspended solids/sediments, nutrients, pathogens (bacteria and viruses), oils/grease, trash, and debris.

4.3.X DMA Summary

Drainage Management Areas				
DMA (Number/Description)	Total Area (acres)	Imperviousness (%)	Infiltration Feasibility Category (Full, Partial, or No Infiltration)	Hydrologic Source Controls Used
DMA 1	2.7	80	No Infiltration	Not applicable

4.4 Source Control BMPs

Non-Structural Source Control BMPs				
Identifier	**Name**	**Check One**		**Reason Source Control is Not Applicable**
		Included	**Not Applicable**	
N1	Education for Property Owners, Tenants and Occupants	☒	☐	
N2	Activity Restrictions	☒	☐	
N3	Common Area Landscape Management	☒	☐	
N4	BMP Maintenance	☒	☐	
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	No hazardous waste will be generated from this site.
N6	Local Industrial Permit Compliance	☐	☒	No industrial business on this site.
N7	Spill Contingency Plan	☐	☒	No hazardous waste will be generated from this site.
N8	Underground Storage Tank Compliance	☒	☐	
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous waste will be generated from this site.
N10	Uniform Fire Code Implementation	☐	☒	No use or storage of hazardous materials.
N11	Common Area Litter Control	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☐	☒	No loading docks are proposed for this site.
N14	Common Area Catch Basin Inspection	☒	☐	
N15	Street Sweeping Private Streets and Parking Lots	☒	☐	
N16	Retail Gasoline Outlets	☐	☒	No retail gasoline outlets are proposed for this project.

Structural Source Control BMPs

Identifier	Name	Check One		Reason Source Control is Not Applicable
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage	☒	☐	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	☒	☐	
S3	Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐	
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐	
S5	Protect slopes and channels and provide energy dissipation	☐	☒	Flat site, slopes less than 2% overall
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	☒	☐	
S6	Dock areas	☐	☒	Not applicable, residential development
S7	Maintenance bays	☐	☒	Not applicable, residential development
S8	Vehicle wash areas	☒	☐	
S9	Outdoor processing areas	☒	☐	
S10	Equipment wash areas	☐	☒	Not applicable, residential development
S11	Fueling areas	☐	☒	Not applicable, residential development
S12	Hillside landscaping	☐	☒	Flat site, slopes less than 2% overall
S13	Wash water control for food preparation areas	☐	☒	Not applicable, residential development
S14	Community car wash racks	☒	☐	

Section 5 Low Impact Development BMPs

5.1 LID BMPs in DMA 1

Due to the site's infeasibility for infiltration, the LID BMP used in DMA 1 is a proprietary biofiltration BMP with no infiltration. Harvest and use BMP is not feasible due to the project's lack of demand for harvest stormwater.

5.1.1 Hydrologic Source Controls for DMA 1

Hydrologic source control BMPs are not practical for this project and are not used. The site's soil characteristics are not suitable for stormwater retention to achieve volume reduction.

5.1.2 Structural LID BMP for DMA 1

The LID BMPs utilized in DMA 1 are two Modular Wetland Systems (MWS) for pollutant control. The MWS units are WA TAPE (Washington State Technology Acceptance Protocol-Ecology) approved proprietary biofiltration (BIO-5) device that provides biofiltration via horizontal flow. The MWS are used as compact LID BMPs to accommodate the tight space constraints of the project and to receive subsurface pipe flows for treatment.

The MWS' are paired with a downstream subsurface detention vault for HMP compliance and attenuation of peak flows. This MWS' have been sized to accommodate 150% of the 85th percentile, 24-hour storm for water quality treatment per Appendix E.3.5 and Worksheet 9. Stormwater flows exceeding the water quality flows will be bypassed through an internal weir within each MWS and discharge into the detention vault. Both the runoff treated by the MWS, and bypassed flows are routed through the detention vault.

The vault is capable of regulating hydromodification events from 10% of the 2-year through the 10-year storms with a riser. Equipped with a 2 inch low-flow diameter orifice at the bottom of the structure as well as a rectangular notch at the top, this riser controls the hydromodification events. and attenuates peak flows. Stormwater flows exceeding the hydromodification events will pass through the 18 inch diameter opening at the top of the riser. Stormwater then travels from the vault to the 24-inch R.C.P storm drain along Argonaut through a proposed reinforced concrete pipe (R.C.P.) 18-inch storm drain.

See the attached DMA Exhibit in the preceding section for details.

5.2 Summary of LID BMPs

Water quality requirements for the project are met by use of two MWS'. The following table summarizes the total water quality flow by the drainage area. See Attachment C, Worksheet 9 for detailed calculations. Each 8x16 MWS unit will treat half of the design flow (0.365 cfs per MWS) shown in the table below.

LID BMP Design Parameters					
Drainage Area (ac)	IMP %	C	$I_{design, 80\%}$ (in/hr)	$Q_{80\%}$ (cfs)	Q_{design} (cfs)
2.7	80	0.825	0.24	0.486	0.729

Section 6 Hydromodification BMPs

6.1 Points of Compliance

The POC for the project is located downstream of the MWS and subsurface detention vault (see **DMA Exhibit**). This location accounts for the stormwater treatment and detention for meeting hydromodification requirements.

6.2 Pre-Development (Natural) Conditions

The natural pre-development condition of the site consisted of very steep slopes. This was determined through use of a USGS topographic quadrangle map (1949) and historical aerial photograph (1938) courtesy of Historical Aerials. Historical information pertaining to the land cover was limited to the use of the 1939 historical photograph. However, it could be reasonably deduced from the photograph that the land cover existing before development was open brush, most likely native grasses and shrubs. The pre-development condition utilized in the SOHM model was HSG class D soils, with open brush and very steep slopes. Refer to **Attachment D5 and D6** for historical photograph (1938) and topographic map (1949).

6.3 Post-Development Conditions and Hydromodification BMPs

In the post-development condition, the land cover is urban/commercial with flat slopes. The subsurface detention vault serves as a HM BMP. The stormwater flow exiting the system at the POC is controlled by an orifice plate.

6.4 Measures for Avoidance of Critical Coarse Sediment Yield Areas

The project is a redevelopment project and thus not subject to critical coarse sediment provision. Additionally, the project does not lie in a critical coarse sediment region (**Attachment D2**)

6.5 Hydrologic Modeling and Hydromodification Compliance

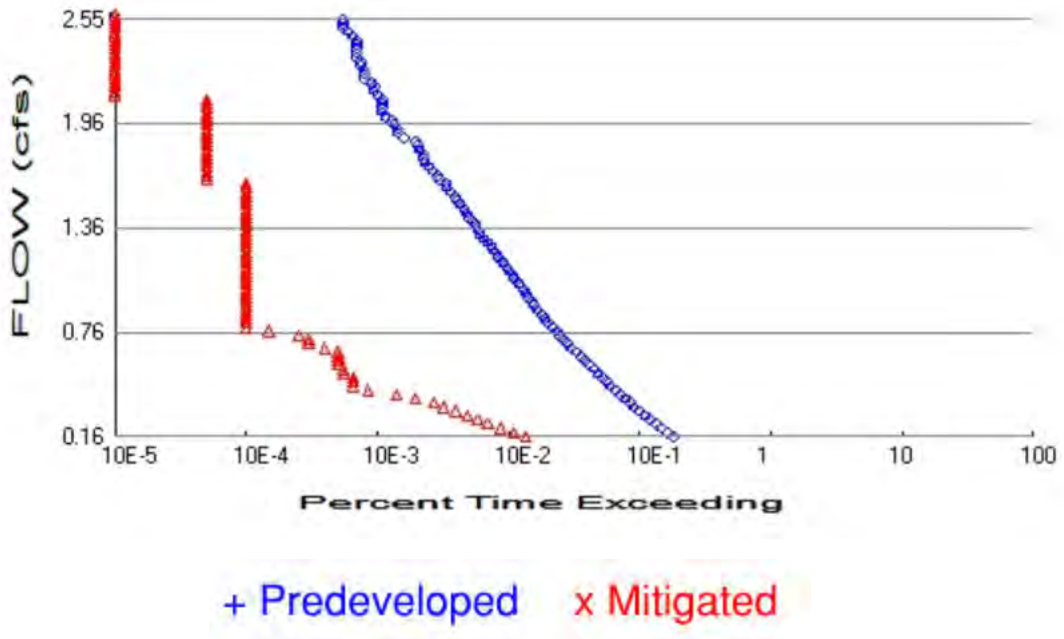
The South Orange County Hydrologic Model (SOHM) was utilized to design and size hydromodification mitigation BMPs. SOHM is an HSPF-based (Hydrological Simulation Program FORTRAN) watershed model that has been specifically calibrated to natural and developed condition subwatersheds in southern Orange County. More than 48 years of 15-minute precipitation, evapotranspiration, and irrigation data is used in the model. The Laguna Beach meteorological station is the station utilized in the study. SOHM defines the pre-developed (natural) condition as predevelopment and post-developed condition as mitigated.

Areas of the predevelopment condition were broken down by land use and soil type and entered into SOHM. In the predeveloped conditions, the area acts as one watershed which is selected as the Point of Compliance (POC). Areas of the mitigated condition were broken

down likewise. BMPs were connected downstream of the mitigated condition. The POC of the mitigated condition was selected immediately downstream of the subsurface detention vault. The vault contains an outlet structure, which is configured with an orifice plate with openings to control flow rate. Next, an analysis was performed at the POC for the predevelopment and mitigated scenarios. The analysis compares flow durations for each scenario with the specific flow values and the number of times predevelopment and mitigated flows exceeded those flow values. A percentage is calculated to determine when the system passes or fails if the percentages exceed the allowable 110%. A summary table for the key hydromodification BMP design parameters and the drawdown time is provided as follows. Full details are available in the SOHM reported included in Attachment C6.**Summary for hydromodification compliance**

BMP Elements	Size	Elevation	Drawdown time
Detention system (StormTrap)	20' x 50' x 4' (3,200 cf)*	433.45 (bottom of vault)	3.03 hours**
Orifice on weir plate	2" ∅	433.45	
Top of weir plate	0.65' width	435.95	

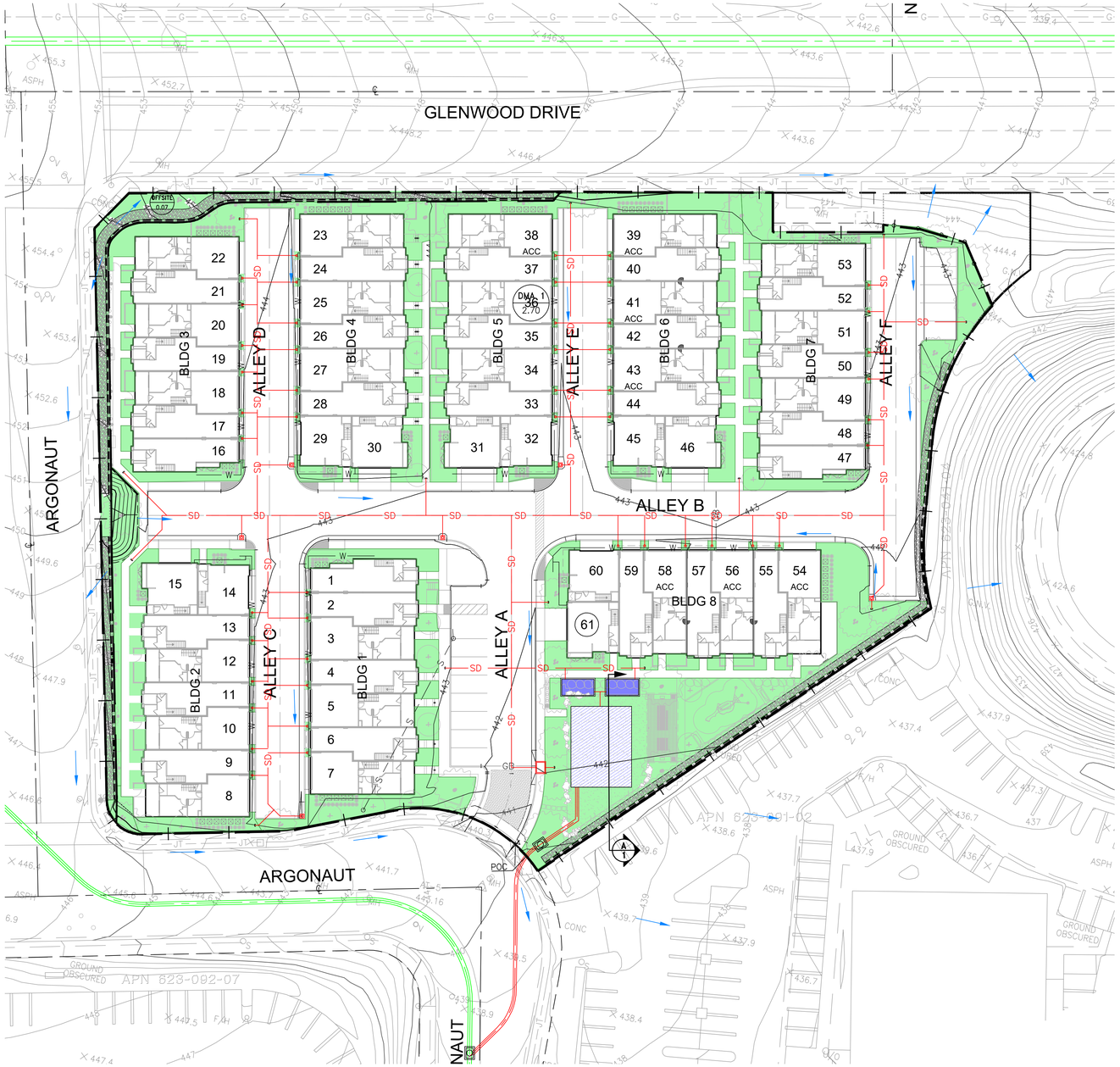
*BMP is used for hydromodification management only, not for LID requirements. Thus, required volume criterion is not applicable. See flow-duration plot for Predevelopment and Mitigated Flow below for hydromodification compliance.
** Drawdown time per SOHM report result. See Attachment C.

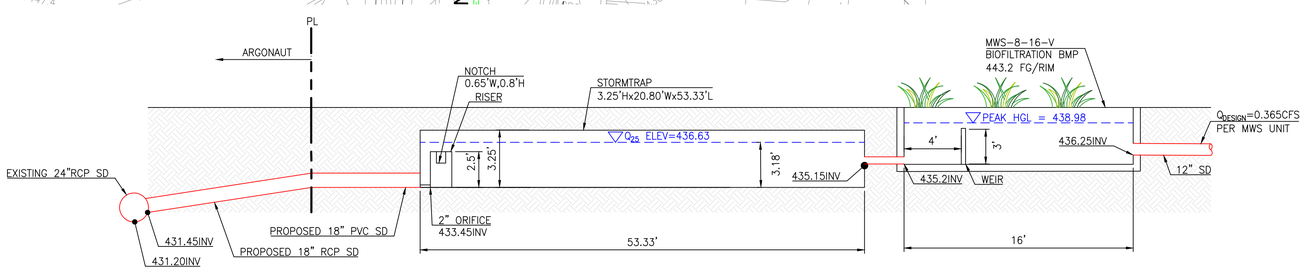


Section 7 Educational Materials Index

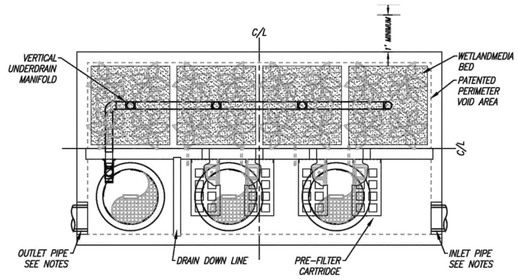
For applicable educational materials refer to https://h2oc.org/

Educational Materials			
Residential Material (http://www.ocwatersheds.com)	**Check If Applicable**	**Business Material (http://www.ocwatersheds.com)**	**Check If Applicable**
The Ocean Begins at Your Front Door	☒	Tips for the Automotive Industry	☐
Tips for Car Wash Fund-raisers	☒	Tips for Using Concrete and Mortar	☐
Tips for the Home Mechanic	☒	Tips for the Food Service Industry	☐
Homeowners Guide for Sustainable Water Use	☒	Proper Maintenance Practices for Your Business	☐
Household Tips	☒	Compliance BMPs for Mobile Businesses	☐
Proper Disposal of Household Hazardous Waste	☒	**Other Material**	**Check If Attached**
Recycle at Your Local Used Oil Collection Center (North County)	☐		
Recycle at Your Local Used Oil Collection Center (Central County)	☐		☐
Recycle at Your Local Used Oil Collection Center (South County)	☒		☐
Tips for Maintaining a Septic Tank System	☐		☐
Responsible Pest Control	☒		☐
Sewer Spill	☐		☐
Tips for the Home Improvement Projects	☒		☐
Tips for Horse Care	☐		☐
Tips for Landscaping and Gardening	☒		☐
Tips for Pet Care	☒		☐
Tips for Projects Using Paint	☒		☐

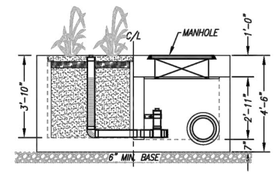




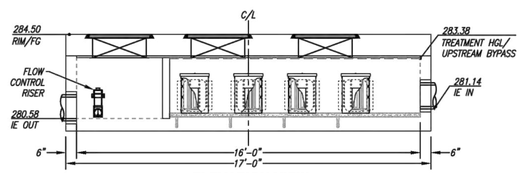
PROPOSED STORMWATER SYSTEM (A/1)
N.T.S



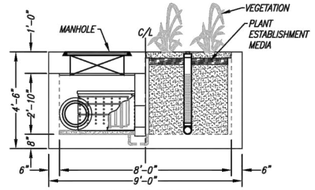
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

DMA BOUNDARY
EXISTING RIGHT OF WAY
PROPERTY BOUNDARY
*L=270' SURFACE FLOW PATH LENGTH
SURFACE FLOW PATH
DMA A 0.64 — DMA ID / AREA ACREAGE
DIRECTION OF SURFACE FLOW
EXISTING STORM DRAIN
L=270' PIPE FLOW LENGTH
SD PROPOSED STORM DRAIN
PROPOSED BMP
PROPOSED DETENTION BASIN
PERVIOUS AREA

ONSITE SWQMP SUMMARY

DMA DESIGNATION	DMA 1	PROJECT TOTAL
PERVIOUS AREA (AC)	0.55	0.55
IMPERVIOUS AREA (AC)	2.15	2.15
TOTAL AREA (AC)	2.70	2.7
DESIGN CAPTURE VOL (CF)	–	–
BMP TYPE	PROPRIETARY BIOFILTRATION BMP (MWS-L-8-16-V) FOR POLLUTANT CONTROL DETENTION BMP (STORMTRAP VAULT) FOR HMP COMPLIANCE	–
REQUIRED DESIGN VOLUME OR FLOWRATE (CF OR CFS)	0.729 CFS	0.729 CFS
PROVIDED DESIGN VOLUME OR FLOWRATE (CF OR CFS)	0.924 CFS	0.924 CFS

NOTES

1. TWO MWS-L-8-16-V BMPS PROPOSED FOR PROJECT
2. EACH MWS-L-8-16-V BMP HAS A DESIGN FLOW OF 0.462 CFS.
3. DESIGN FLOWRATE IS CALCULATED FOR PROJECT AREA OF 2.70 AC AND DOES NOT INCLUDE "OFFSITE" REGION.
4. "OFFSITE" REGION DRAINS 0.07 AC TO THE GUTTER AND FLOWS THROUGH SELF-TREATING LANDSCAPE. FLOW IS NEGLIBLE
5. PROJECT IS LOCATED WITHIN ALISO CREEK WATERSHED AND IS SUBJECT TO HYDROMODIFICATION MANAGEMENT REQUIREMENTS.
6. GROUNDWATER ENCOUNTERED 55' BELOW GROUND SURFACE DURING SOILS EXPLORATION.
7. ENTIRE PROJECT SITE IS UNDERLAIN BY HYDROLOGIC SOILS GROUP D.

N

30' 0' 15' 30'
SCALE: 1" = 30'

FIGURE 1: DMA EXHIBIT

95 ARGONAUT
ALISO VIEJO, CA

X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

P:\117\010\Reports\Entitlement\WQMP - Preliminary\Exhibits\117-010_BMP Exhibit.dwg Plotted At: September 6, 2024 8:22 AM Last Saved By: mmdyrdtlg Last Saved At: September 6, 2024 8:21 AM

Attachment A: Educational Materials

Educational materials are available at https://h2oc.org/

Attachment B: Operations and Maintenance Plan

To be included in Final Engineering.

Attachment C: Calculations and Worksheets

- Attachment C1: OCTGD Worksheet 01 Infiltration Feasibility Categorization
- Attachment C2: OCTGD Worksheet 09 Flow-Based Compact Biofiltration Method
- Attachment C3: SOHM HMP Sizing Calculations
- Attachment C4: StormTrap Stage Storage Discharge Calculations
- Attachment C5: Contech MWS 8x16 HGL calculations

Worksheet 1: Infiltration Feasibility Categorization

Categorization of Infiltration Feasibility Condition			*Page 1 of 5*
Part 1: Physical Limitations of Infiltration Based on the criteria for physical limitations of infiltration described in Section 4.2.2.2, what level of physical feasibility of infiltration is the maximum that the BMP location will support?			
	Physical Infiltration Feasibility Category	**Mark applicable category**	**Next step**
1	Full Infiltration of the DCV		Continue to Part 2
	Biotreatment with Partial Infiltration		Continue to Part 3
	Biotreatment with No Infiltration	x	Select and Utilize Biotreatment without Infiltration
Provide summary of basis: The site is underlain by engineered fills (5 to 75-feet) that are silty and clayey in nature, which are not conducive to infiltration. In addition, the presence of slopes along the property boundaries and deep canyon fill, infiltration of stormwater can result in seepage or springs in locations where none previously existed. Thus, infiltration is not recommended for the site. See SA Geotechnical Infiltration report (May 2024) in Attachment C for more information.			

Categorization of Infiltration Feasibility Condition		*Page 2 of 5*	
Part 2: Risks Limiting Full Infiltration of the DCV –*Would infiltration of the full DCV introduce risks of undesirable consequences that cannot reasonably be mitigated?*		***Yes***	***No***
2	**Would infiltration of the DCV pose significant risk for groundwater related concerns?** Use criteria described in Section 4.2.2.3 and results from **Worksheet 2** (Appendix C) to describe groundwater-related infiltration feasibility criteria.		x
Provide basis: Groundwater was discovered at 55-feet at the time of the subsurface exploration. See SA Geotechnical Infiltration report (May 2024) in Attachment C for more information.			
3	**Would infiltration of the full DCV pose significant risk of increasing risk of geotechnical hazards that cannot be mitigated to an acceptable level**? Use criteria described in Section 4.2.2.4.	x	
Provide basis: Infiltration of stormwater can result in seepage or springs in locations where none previously existed due to the presence of slopes along the property boundary and deep canyon fill. See SA Geotechnical Infiltration report (May 2024) in Attachment C for more information.			
4	Would infiltration of the DCV cause an increase in groundwater flow or decrease in surface runoff over predevelopment conditions that would cause **impairment to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters?** Use criteria in Section 4.2.2.5		x
Provide basis: Not applicable to the site nor project of this scale.			

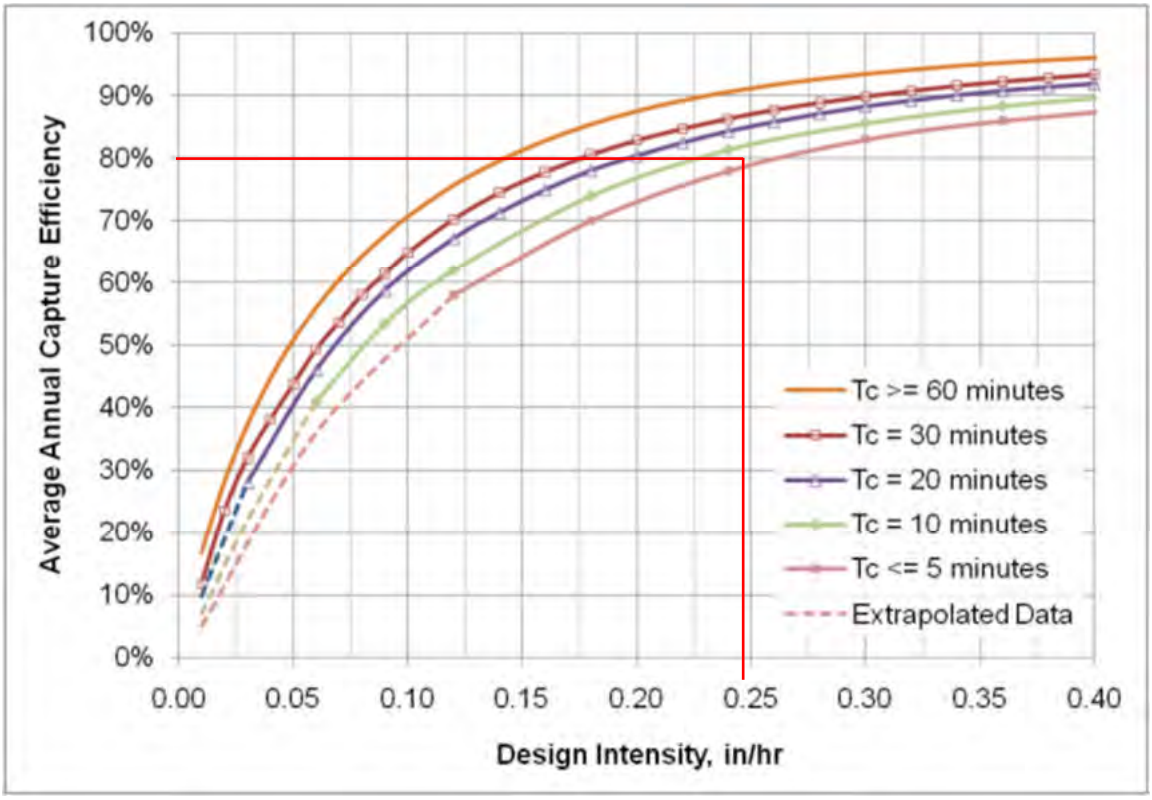
Categorization of Infiltration Feasibility Condition		***Page 3 of 5***	
Part 2 (continued): Risks Limiting Full Infiltration of the DCV –*Would infiltration of the full DCV introduce risks of undesirable consequences that cannot reasonably be mitigated?*		***Yes***	***No***
5	Is there substantial evidence that infiltration of the DCV would **result in a significant increase in I&I to the sanitary sewer** that cannot be sufficiently mitigated?		x
Provide basis: Not applicable to this site.			
6	Would infiltration of the DCV **violate downstream water rights**?		x
Provide basis: Not applicable to the project.			
Part 2 Result	If the answer to all questions 2-6 are "No", then the DMA is categorized as "Full Infiltration" for the purposes of LID BMP type selection. Describe finding. At the Preliminary/Conceptual WQMP phase, describe the additional design-phase testing required to confirm this determination and identify contingencies for final design. At the Final Project WQMP phase, identify any required construction-phase testing and identify the design contingencies that should result based on construction-phase testing. If the answer to any of questions 2-6 is "Yes" then the site cannot be categorized as "Full Infiltration". Continue to Part 3: Partial Infiltration Feasibility		
Categorization of Infiltration Feasibility Condition		***Page 4 of 5***	
Part 3: Partial Infiltration Feasibility Criteria –*Would infiltration of any appreciable volume of stormwater result in risks of undesirable consequences that cannot reasonably be mitigated?*		***Yes***	***No***
8	**Would use of biotreatment BMPs with partial infiltration pose significant risk for groundwater related concerns?** Refer to criteria in Section 4.2.2.3 and Worksheet 1 (Appendix C) for guidance on groundwater-related infiltration feasibility criteria.		x

Provide basis: Groundwater was observed at 55-feet at the time of the subsurface exploration. Historic high groundwater mapping indicates high groundwater greater than 20 bgs. This is prior to significant mass grading in the 1980s. Groundwater is expected to remain deep below the site. See SA Geotechnical Infiltration report (May 2024) in Attachment C for more information.			
9	**Would the use of biotreatment BMPs with partial infiltration pose elevated risks of geotechnical hazards that cannot be mitigated to an acceptable level**? Refer to Section 4.2.2.4.	x	
Provide basis: Infiltration of stormwater can result in seepage or springs in locations where none previously existed due to the presence of slopes along the property boundary and deep canyon fill. See SA Geotechnical Infiltration report (May 2024) in Attachment C for more information.			
10	**Would the use of biotreatment BMPs with partial infiltration elevate risks or introduced conflicts related to groundwater balance, inflow and infiltration, or water rights?** Refer to Section 4.2.2.5. Note: this is uncommon and must be supported by site-specific analysis if it is used as a basis to reject biotreatment with partial infiltration.		x
Provide basis: Not applicable to the project.			
Categorization of Infiltration Feasibility Condition			***Page 5 of 5***
Part 3 Result	If the answer to all questions 8-10 are “No”, then the DMA is categorized as “Biotreatment with Partial Infiltration” for the purposes of LID BMP type selection. If the answer to any of questions 8-10 is “Yes” then the site is categorized as “Biotreatment with No Infiltration” for the purposes of LID BMP type selection.		

Worksheet 9: Flow-Based Compact Biofiltration with Supplemental Retention Method

Part 1: Determine the design storm intensity of the compact biofiltration BMP				
1	Enter the time of concentration, T_c (min) (See E.2.3) (account for upstream detention by increasing Tc to a maximum 60 minutes per Section E.3.5.2 if detention is provided)	T_c=	8	min
2	Using Figure E-7 or the figure included in the worksheet, determine the design intensity at which the estimated time of concentration (T_c) achieves 80% capture efficiency, I_1	I_1=	0.24	in/hr
3	Enter capture efficiency corresponding to upstream HSCs and/or upstream BMPs, Y_2. Attach associated calculations.	Y_2 =	0	%
4	Using Figure E-7, determine the design intensity at which the time of concentration (T_c) achieves the upstream capture efficiency(Y_2), I_2	I_2=	0	in/hr
5	Determine the design intensity that must be provided by BMP to achieve 80 percent capture, $I_{design}= I_1-I_2$	$I_{design_80\%}$ =	0.24	in/hr
Part 2: Calculate the design flowrate of the compact biofiltration BMP (Section E.2.6)				
6a	Enter DMA area tributary to BMP (s), *A* (acres)	A=	2.7	acres
6b	Enter DMA Imperviousness, imp (unitless)	imp=	0.8	
6c	Calculate runoff coefficient, *c= (0.75 x imp) + 0.15*	c=	0.75	
6d	Calculate flowrate to achieve 80 percent capture, $Q_{80\%}$= *(c x* I_{design} *x A)*	$Q_{80\%}$=	0.486	cfs
7	Calculate design flowrate, $Q_{design}= Q_{80\%}$ *x 150%*	Q_{design}=	0.729	cfs
Part 3: Demonstrate that Supplemental Retention BMPs Conform to Volume Reduction Targets (Only DMAs Categorized as "Biotreatment with Partial Infiltration")				
8	Describe system, including features to maximize volume reduction (if applicable): N/A (no infiltration)			
9	Summarize calculations to demonstrate that volume reduction targets are met, where feasible and applicable. N/A (no infiltration)			

Worksheet 9: Flow-Based Compact Biofiltration with Supplemental Retention Method

Supporting Calculations	
Provide time of concentration assumptions: Time of concentration taken from CivilD calculations, approved hydrologic software.	
Graphical Operations	
	
Provide supporting graphical operations in figure above.	

SOHM

PROJECT REPORT

General Model Information

Project Name:	117-010 Argonaut SOHM HMP_20x50x4_2024-08-19
Site Name:	Argonaut
Site Address:	95 Argonaut
City:	Aliso Viejo
Report Date:	8/19/2024
Gage:	Laguna Beach
Data Start:	10/01/1949
Data End:	09/30/2006
Timestep:	15 Minute
Precip Scale:	1.000
Version Date:	2017/08/18

POC Thresholds

Low Flow Threshold for POC1:	10 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
D,Open Brush,VSteep	2.77
Pervious Total	2.77

Impervious Land Use	acre
Impervious Total	0
Basin Total	2.77

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
B,Urban,Flat(0-5%)	2.15
Pervious Total	2.15

Impervious Land Use	acre
Impervious,Flat(0-5)	0.55
Impervious Total	0.55
Basin Total	2.7

Element Flows To:

Surface	Interflow	Groundwater
Flow Splitter 1	Flow Splitter 1	

Mitigated Routing

Flow Splitter 1

Bottom Length: 10.00 ft.
Bottom Length: 10.00 ft.
Depth: 10 ft.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1
Control Structure Splitter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Primary(cfs)	Secondary(cfs)
0.000	0.002	0.000	0.000	0.000
0.111	0.002	0.000	1.302	0.000
0.222	0.002	0.000	1.842	0.000
0.333	0.002	0.000	2.256	0.000
0.444	0.002	0.001	2.605	0.000
0.555	0.002	0.001	2.912	0.000
0.666	0.002	0.001	3.190	0.000
0.777	0.002	0.001	3.446	0.000
0.888	0.002	0.002	3.684	0.000
1.000	0.002	0.002	3.907	0.000
1.111	0.002	0.002	4.119	0.000
1.222	0.002	0.002	4.320	0.000
1.333	0.002	0.003	4.512	0.000
1.444	0.002	0.003	4.696	0.000
1.555	0.002	0.003	4.873	0.000
1.666	0.002	0.003	5.044	0.000
1.777	0.002	0.004	5.210	0.000
1.888	0.002	0.004	5.370	0.000
2.000	0.002	0.004	5.526	0.000
2.111	0.002	0.004	5.677	0.000
2.222	0.002	0.005	5.825	0.000
2.333	0.002	0.005	5.969	0.000
2.444	0.002	0.005	6.109	0.000
2.555	0.002	0.005	6.246	0.000
2.666	0.002	0.006	6.381	0.000
2.777	0.002	0.006	6.512	0.000
2.888	0.002	0.006	6.641	0.000
3.000	0.002	0.006	6.768	0.000
3.111	0.002	0.007	6.892	0.000
3.222	0.002	0.007	7.014	0.000
3.333	0.002	0.007	7.134	0.000
3.444	0.002	0.007	7.252	0.000
3.555	0.002	0.008	7.368	63.96
3.666	0.002	0.008	7.482	110.7
3.777	0.002	0.008	7.595	143.0
3.888	0.002	0.008	7.706	169.2
4.000	0.002	0.009	7.815	191.8
4.111	0.002	0.009	9.101	213.3
4.222	0.002	0.009	11.35	233.9
4.333	0.002	0.009	14.21	253.8
4.444	0.002	0.010	17.49	272.9
4.555	0.002	0.010	21.06	291.5
4.666	0.002	0.010	24.74	309.4
4.777	0.002	0.011	28.39	326.6
4.888	0.002	0.011	31.85	343.0

5.000	0.002	0.011	34.98	358.6
5.111	0.002	0.011	37.66	373.2
5.222	0.002	0.012	39.86	387.0
5.333	0.002	0.012	41.57	399.9
5.444	0.002	0.012	42.91	412.2
5.555	0.002	0.012	44.56	424.4
5.666	0.002	0.013	45.89	436.0
5.777	0.002	0.013	47.18	447.3
5.888	0.002	0.013	48.44	458.3
6.000	0.002	0.013	49.66	469.1
6.111	0.002	0.014	50.84	479.6
6.222	0.002	0.014	52.00	489.9
6.333	0.002	0.014	53.13	500.0
6.444	0.002	0.014	54.23	509.9
6.555	0.002	0.015	55.32	519.6
6.666	0.002	0.015	56.38	529.1
6.777	0.002	0.015	57.41	538.5
6.888	0.002	0.015	58.43	547.7
7.000	0.002	0.016	59.43	556.7
7.111	0.002	0.016	60.41	565.6
7.222	0.002	0.016	61.38	574.4
7.333	0.002	0.016	62.33	583.0
7.444	0.002	0.017	63.27	591.5
7.555	0.002	0.017	64.19	599.9
7.666	0.002	0.017	65.10	608.2
7.777	0.002	0.017	65.99	616.3
7.888	0.002	0.018	66.87	624.4
8.000	0.002	0.018	67.74	632.3
8.111	0.002	0.018	68.60	640.2
8.222	0.002	0.018	69.45	647.9
8.333	0.002	0.019	70.28	655.6
8.444	0.002	0.019	71.11	663.1
8.555	0.002	0.019	71.93	670.6
8.666	0.002	0.019	72.74	678.0
8.777	0.002	0.020	73.53	685.3
8.888	0.002	0.020	74.32	692.6
9.000	0.002	0.020	75.10	699.8
9.111	0.002	0.020	75.88	706.9
9.222	0.002	0.021	76.64	713.9
9.333	0.002	0.021	77.40	720.8
9.444	0.002	0.021	78.15	727.7
9.555	0.002	0.021	78.89	734.6
9.666	0.002	0.022	79.62	741.3
9.777	0.002	0.022	80.35	748.0
9.888	0.002	0.022	81.07	754.7
10.00	0.002	0.023	81.79	761.2
10.11	0.002	0.023	82.50	767.8

Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 36 in.
Orifice 1 Diameter: 12 in. Elevation:0 ft.
Element Flows To:
Outlet 1 Outlet 2
MWS 1 Flow Splitter 2

MWS 1

MWS Model Number: MWS-L-8-16
Media Filter Rate (in/hr): 100

Element Flows To:

Outlet 1	Outlet 2
Vault 1	Vault 1

MWS Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
12.000	0.001	0.000	0.000	0.000
12.000	0.001	0.000	0.000	0.013
12.000	0.001	0.000	0.000	0.026
12.000	0.001	0.001	0.000	0.039
12.000	0.001	0.001	0.000	0.052
12.000	0.001	0.002	0.000	0.065
12.000	0.001	0.003	0.000	0.078
12.000	0.001	0.005	0.000	0.091
12.000	0.001	0.006	0.000	0.104
12.000	0.001	0.008	0.000	0.117
12.000	0.001	0.010	0.000	0.130
12.000	0.001	0.012	0.000	0.143
12.000	0.001	0.014	0.000	0.157
12.000	0.001	0.016	0.000	0.170
12.000	0.001	0.019	0.000	0.183
12.000	0.001	0.022	0.000	0.196
12.000	0.001	0.025	0.000	0.209
12.000	0.001	0.028	0.000	0.222
12.000	0.001	0.031	0.000	0.235
12.000	0.001	0.035	0.000	0.248
12.000	0.001	0.039	0.000	0.261
12.000	0.001	0.042	0.000	0.274
12.000	0.001	0.047	0.000	0.287
12.000	0.001	0.051	0.000	0.300
12.000	0.001	0.055	0.000	0.314
12.000	0.001	0.060	0.000	0.327
12.000	0.001	0.065	0.000	0.340
12.000	0.001	0.070	0.000	0.353
12.000	0.001	0.075	0.000	0.366
12.000	0.001	0.080	0.000	0.379
12.000	0.001	0.086	0.000	0.392
12.000	0.001	0.092	0.000	0.405
12.000	0.001	0.098	0.000	0.418
12.000	0.001	0.104	0.000	0.431
12.000	0.001	0.110	0.000	0.444
12.000	0.001	0.117	6.000	0.444

Vault 1

Width: 50 ft.
Length: 20 ft.
Depth: 4 ft.
Discharge Structure
Riser Height: 2.5 ft.
Riser Diameter: 18 in.
Notch Type: Rectangular
Notch Width: 0.800 ft.
Notch Height: 0.650 ft.
Orifice 1 Diameter: 2 in. Elevation:0 ft.
Element Flows To:
Outlet 1 Outlet 2

Vault Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.023	0.000	0.000	0.000
0.0444	0.023	0.001	0.022	0.000
0.0889	0.023	0.002	0.032	0.000
0.1333	0.023	0.003	0.039	0.000
0.1778	0.023	0.004	0.045	0.000
0.2222	0.023	0.005	0.051	0.000
0.2667	0.023	0.006	0.056	0.000
0.3111	0.023	0.007	0.060	0.000
0.3556	0.023	0.008	0.064	0.000
0.4000	0.023	0.009	0.068	0.000
0.4444	0.023	0.010	0.072	0.000
0.4889	0.023	0.011	0.075	0.000
0.5333	0.023	0.012	0.079	0.000
0.5778	0.023	0.013	0.082	0.000
0.6222	0.023	0.014	0.085	0.000
0.6667	0.023	0.015	0.088	0.000
0.7111	0.023	0.016	0.091	0.000
0.7556	0.023	0.017	0.094	0.000
0.8000	0.023	0.018	0.097	0.000
0.8444	0.023	0.019	0.099	0.000
0.8889	0.023	0.020	0.102	0.000
0.9333	0.023	0.021	0.104	0.000
0.9778	0.023	0.022	0.107	0.000
1.0222	0.023	0.023	0.109	0.000
1.0667	0.023	0.024	0.112	0.000
1.1111	0.023	0.025	0.114	0.000
1.1556	0.023	0.026	0.116	0.000
1.2000	0.023	0.027	0.118	0.000
1.2444	0.023	0.028	0.121	0.000
1.2889	0.023	0.029	0.123	0.000
1.3333	0.023	0.030	0.125	0.000
1.3778	0.023	0.031	0.127	0.000
1.4222	0.023	0.032	0.129	0.000
1.4667	0.023	0.033	0.131	0.000
1.5111	0.023	0.034	0.133	0.000
1.5556	0.023	0.035	0.135	0.000
1.6000	0.023	0.036	0.137	0.000
1.6444	0.023	0.037	0.139	0.000
1.6889	0.023	0.038	0.141	0.000

1.7333	0.023	0.039	0.142	0.000
1.7778	0.023	0.040	0.144	0.000
1.8222	0.023	0.041	0.146	0.000
1.8667	0.023	0.042	0.154	0.000
1.9111	0.023	0.043	0.190	0.000
1.9556	0.023	0.044	0.243	0.000
2.0000	0.023	0.045	0.308	0.000
2.0444	0.023	0.046	0.383	0.000
2.0889	0.023	0.048	0.467	0.000
2.1333	0.023	0.049	0.560	0.000
2.1778	0.023	0.050	0.660	0.000
2.2222	0.023	0.051	0.766	0.000
2.2667	0.023	0.052	0.879	0.000
2.3111	0.023	0.053	0.999	0.000
2.3556	0.023	0.054	1.124	0.000
2.4000	0.023	0.055	1.254	0.000
2.4444	0.023	0.056	1.390	0.000
2.4889	0.023	0.057	1.531	0.000
2.5333	0.023	0.058	1.665	0.000
2.5778	0.023	0.059	1.915	0.000
2.6222	0.023	0.060	2.249	0.000
2.6667	0.023	0.061	2.647	0.000
2.7111	0.023	0.062	3.094	0.000
2.7556	0.023	0.063	3.576	0.000
2.8000	0.023	0.064	4.079	0.000
2.8444	0.023	0.065	4.588	0.000
2.8889	0.023	0.066	5.090	0.000
2.9333	0.023	0.067	5.570	0.000
2.9778	0.023	0.068	6.016	0.000
3.0222	0.023	0.069	6.417	0.000
3.0667	0.023	0.070	6.764	0.000
3.1111	0.023	0.071	7.055	0.000
3.1556	0.023	0.072	7.292	0.000
3.2000	0.023	0.073	7.482	0.000
3.2444	0.023	0.074	7.644	0.000
3.2889	0.023	0.075	7.887	0.000
3.3333	0.023	0.076	8.063	0.000
3.3778	0.023	0.077	8.235	0.000
3.4222	0.023	0.078	8.402	0.000
3.4667	0.023	0.079	8.565	0.000
3.5111	0.023	0.080	8.725	0.000
3.5556	0.023	0.081	8.881	0.000
3.6000	0.023	0.082	9.034	0.000
3.6444	0.023	0.083	9.184	0.000
3.6889	0.023	0.084	9.331	0.000
3.7333	0.023	0.085	9.475	0.000
3.7778	0.023	0.086	9.617	0.000
3.8222	0.023	0.087	9.757	0.000
3.8667	0.023	0.088	9.894	0.000
3.9111	0.023	0.089	10.02	0.000
3.9556	0.023	0.090	10.16	0.000
4.0000	0.023	0.091	10.29	0.000
4.0444	0.023	0.092	10.42	0.000
4.0889	0.000	0.000	10.54	0.000

Flow Splitter 2

Bottom Length: 10.00 ft.
Bottom Length: 10.00 ft.
Depth: 10 ft.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1
Control Structure Splitter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Primary(cfs)	Secondary(cfs)
0.000	0.002	0.000	0.000	0.000
0.111	0.002	0.000	1.302	0.000
0.222	0.002	0.000	1.842	0.000
0.333	0.002	0.000	2.256	0.000
0.444	0.002	0.001	2.605	0.000
0.555	0.002	0.001	2.912	0.000
0.666	0.002	0.001	3.190	0.000
0.777	0.002	0.001	3.446	0.000
0.888	0.002	0.002	3.684	0.000
1.000	0.002	0.002	3.907	0.000
1.111	0.002	0.002	4.119	0.000
1.222	0.002	0.002	4.320	0.000
1.333	0.002	0.003	4.512	0.000
1.444	0.002	0.003	4.696	0.000
1.555	0.002	0.003	4.873	0.000
1.666	0.002	0.003	5.044	0.000
1.777	0.002	0.004	5.210	0.000
1.888	0.002	0.004	5.370	0.000
2.000	0.002	0.004	5.526	0.000
2.111	0.002	0.004	5.677	0.000
2.222	0.002	0.005	5.825	0.000
2.333	0.002	0.005	5.969	0.000
2.444	0.002	0.005	6.109	0.000
2.555	0.002	0.005	6.246	0.000
2.666	0.002	0.006	6.381	0.000
2.777	0.002	0.006	6.512	0.000
2.888	0.002	0.006	6.641	0.000
3.000	0.002	0.006	6.768	0.000
3.111	0.002	0.007	6.892	0.000
3.222	0.002	0.007	7.014	0.000
3.333	0.002	0.007	7.134	0.000
3.444	0.002	0.007	7.252	0.000
3.555	0.002	0.008	7.368	63.96
3.666	0.002	0.008	7.482	110.7
3.777	0.002	0.008	7.595	143.0
3.888	0.002	0.008	7.706	169.2
4.000	0.002	0.009	7.815	191.8
4.111	0.002	0.009	9.101	213.3
4.222	0.002	0.009	11.35	233.9
4.333	0.002	0.009	14.21	253.8
4.444	0.002	0.010	17.49	272.9
4.555	0.002	0.010	21.06	291.5
4.666	0.002	0.010	24.74	309.4
4.777	0.002	0.011	28.39	326.6
4.888	0.002	0.011	31.85	343.0
5.000	0.002	0.011	34.98	358.6
5.111	0.002	0.011	37.66	373.2

5.222	0.002	0.012	39.86	387.0
5.333	0.002	0.012	41.57	399.9
5.444	0.002	0.012	42.91	412.2
5.555	0.002	0.012	44.56	424.4
5.666	0.002	0.013	45.89	436.0
5.777	0.002	0.013	47.18	447.3
5.888	0.002	0.013	48.44	458.3
6.000	0.002	0.013	49.66	469.1
6.111	0.002	0.014	50.84	479.6
6.222	0.002	0.014	52.00	489.9
6.333	0.002	0.014	53.13	500.0
6.444	0.002	0.014	54.23	509.9
6.555	0.002	0.015	55.32	519.6
6.666	0.002	0.015	56.38	529.1
6.777	0.002	0.015	57.41	538.5
6.888	0.002	0.015	58.43	547.7
7.000	0.002	0.016	59.43	556.7
7.111	0.002	0.016	60.41	565.6
7.222	0.002	0.016	61.38	574.4
7.333	0.002	0.016	62.33	583.0
7.444	0.002	0.017	63.27	591.5
7.555	0.002	0.017	64.19	599.9
7.666	0.002	0.017	65.10	608.2
7.777	0.002	0.017	65.99	616.3
7.888	0.002	0.018	66.87	624.4
8.000	0.002	0.018	67.74	632.3
8.111	0.002	0.018	68.60	640.2
8.222	0.002	0.018	69.45	647.9
8.333	0.002	0.019	70.28	655.6
8.444	0.002	0.019	71.11	663.1
8.555	0.002	0.019	71.93	670.6
8.666	0.002	0.019	72.74	678.0
8.777	0.002	0.020	73.53	685.3
8.888	0.002	0.020	74.32	692.6
9.000	0.002	0.020	75.10	699.8
9.111	0.002	0.020	75.88	706.9
9.222	0.002	0.021	76.64	713.9
9.333	0.002	0.021	77.40	720.8
9.444	0.002	0.021	78.15	727.7
9.555	0.002	0.021	78.89	734.6
9.666	0.002	0.022	79.62	741.3
9.777	0.002	0.022	80.35	748.0
9.888	0.002	0.022	81.07	754.7
10.00	0.002	0.023	81.79	761.2
10.11	0.002	0.023	82.50	767.8

Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 36 in.
Orifice 1 Diameter: 12 in. Elevation:0 ft.
Element Flows To:

Outlet 1	Outlet 2
Vault 1	MWS 2

MWS 2

MWS Model Number: MWS-L-8-16
Media Filter Rate (in/hr): 100

Element Flows To:

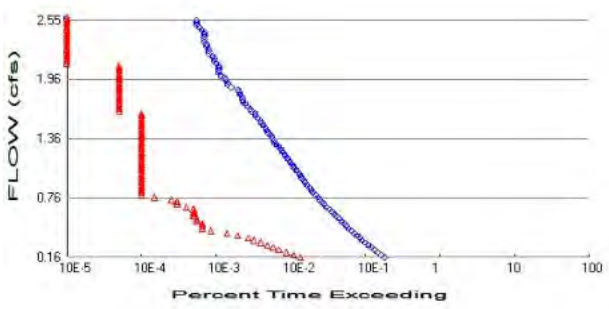
Outlet 1	Outlet 2
Vault 1	Vault 1

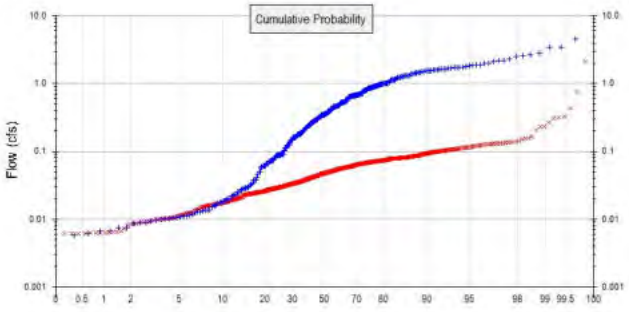
MWS Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
12.000	0.001	0.000	0.000	0.000
12.000	0.001	0.000	0.000	0.013
12.000	0.001	0.000	0.000	0.026
12.000	0.001	0.001	0.000	0.039
12.000	0.001	0.001	0.000	0.052
12.000	0.001	0.002	0.000	0.065
12.000	0.001	0.003	0.000	0.078
12.000	0.001	0.005	0.000	0.091
12.000	0.001	0.006	0.000	0.104
12.000	0.001	0.008	0.000	0.117
12.000	0.001	0.010	0.000	0.130
12.000	0.001	0.012	0.000	0.143
12.000	0.001	0.014	0.000	0.157
12.000	0.001	0.016	0.000	0.170
12.000	0.001	0.019	0.000	0.183
12.000	0.001	0.022	0.000	0.196
12.000	0.001	0.025	0.000	0.209
12.000	0.001	0.028	0.000	0.222
12.000	0.001	0.031	0.000	0.235
12.000	0.001	0.035	0.000	0.248
12.000	0.001	0.039	0.000	0.261
12.000	0.001	0.042	0.000	0.274
12.000	0.001	0.047	0.000	0.287
12.000	0.001	0.051	0.000	0.300
12.000	0.001	0.055	0.000	0.314
12.000	0.001	0.060	0.000	0.327
12.000	0.001	0.065	0.000	0.340
12.000	0.001	0.070	0.000	0.353
12.000	0.001	0.075	0.000	0.366
12.000	0.001	0.080	0.000	0.379
12.000	0.001	0.086	0.000	0.392
12.000	0.001	0.092	0.000	0.405
12.000	0.001	0.098	0.000	0.418
12.000	0.001	0.104	0.000	0.431
12.000	0.001	0.110	0.000	0.444
12.000	0.001	0.117	6.000	0.444

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 2.77
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 2.15
Total Impervious Area: 0.55

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	1.610448
5 year	2.024481
10 year	2.553289
25 year	3.414307

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	0.125813
5 year	0.156841
10 year	0.300355
25 year	0.500632

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1610	3612	269	7	Pass
0.1852	3266	218	6	Pass
0.2094	2942	175	5	Pass
0.2335	2644	138	5	Pass
0.2577	2404	117	4	Pass
0.2819	2180	97	4	Pass
0.3060	1978	80	4	Pass
0.3302	1820	64	3	Pass
0.3544	1684	54	3	Pass
0.3785	1553	39	2	Pass
0.4027	1425	28	1	Pass
0.4268	1312	17	1	Pass
0.4510	1205	13	1	Pass
0.4752	1107	13	1	Pass
0.4993	1031	13	1	Pass
0.5235	958	11	1	Pass
0.5477	898	11	1	Pass
0.5718	828	10	1	Pass
0.5960	759	10	1	Pass
0.6202	711	10	1	Pass
0.6443	664	10	1	Pass
0.6685	602	8	1	Pass
0.6927	564	6	1	Pass
0.7168	520	6	1	Pass
0.7410	493	5	1	Pass
0.7651	466	3	0	Pass
0.7893	430	2	0	Pass
0.8135	398	2	0	Pass
0.8376	375	2	0	Pass
0.8618	356	2	0	Pass
0.8860	336	2	0	Pass
0.9101	314	2	0	Pass
0.9343	298	2	0	Pass
0.9585	282	2	0	Pass
0.9826	273	2	0	Pass
1.0068	262	2	0	Pass
1.0310	241	2	0	Pass
1.0551	227	2	0	Pass
1.0793	216	2	0	Pass
1.1034	204	2	0	Pass
1.1276	196	2	1	Pass
1.1518	183	2	1	Pass
1.1759	172	2	1	Pass
1.2001	164	2	1	Pass
1.2243	156	2	1	Pass
1.2484	148	2	1	Pass
1.2726	138	2	1	Pass
1.2968	129	2	1	Pass
1.3209	121	2	1	Pass
1.3451	118	2	1	Pass
1.3692	112	2	1	Pass
1.3934	106	2	1	Pass
1.4176	100	2	2	Pass

1.4417	96	2	2	Pass
1.4659	91	2	2	Pass
1.4901	85	2	2	Pass
1.5142	81	2	2	Pass
1.5384	79	2	2	Pass
1.5626	73	2	2	Pass
1.5867	67	2	2	Pass
1.6109	67	2	2	Pass
1.6351	60	1	1	Pass
1.6592	57	1	1	Pass
1.6834	53	1	1	Pass
1.7075	49	1	2	Pass
1.7317	46	1	2	Pass
1.7559	45	1	2	Pass
1.7800	45	1	2	Pass
1.8042	42	1	2	Pass
1.8284	41	1	2	Pass
1.8525	39	1	2	Pass
1.8767	32	1	3	Pass
1.9009	29	1	3	Pass
1.9250	29	1	3	Pass
1.9492	27	1	3	Pass
1.9734	26	1	3	Pass
1.9975	23	1	4	Pass
2.0217	22	1	4	Pass
2.0458	22	1	4	Pass
2.0700	22	1	4	Pass
2.0942	22	1	4	Pass
2.1183	20	0	0	Pass
2.1425	19	0	0	Pass
2.1667	19	0	0	Pass
2.1908	18	0	0	Pass
2.2150	16	0	0	Pass
2.2392	16	0	0	Pass
2.2633	16	0	0	Pass
2.2875	15	0	0	Pass
2.3116	15	0	0	Pass
2.3358	14	0	0	Pass
2.3600	14	0	0	Pass
2.3841	14	0	0	Pass
2.4083	14	0	0	Pass
2.4325	14	0	0	Pass
2.4566	13	0	0	Pass
2.4808	12	0	0	Pass
2.5050	11	0	0	Pass
2.5291	11	0	0	Pass
2.5533	11	0	0	Pass

Water Quality

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

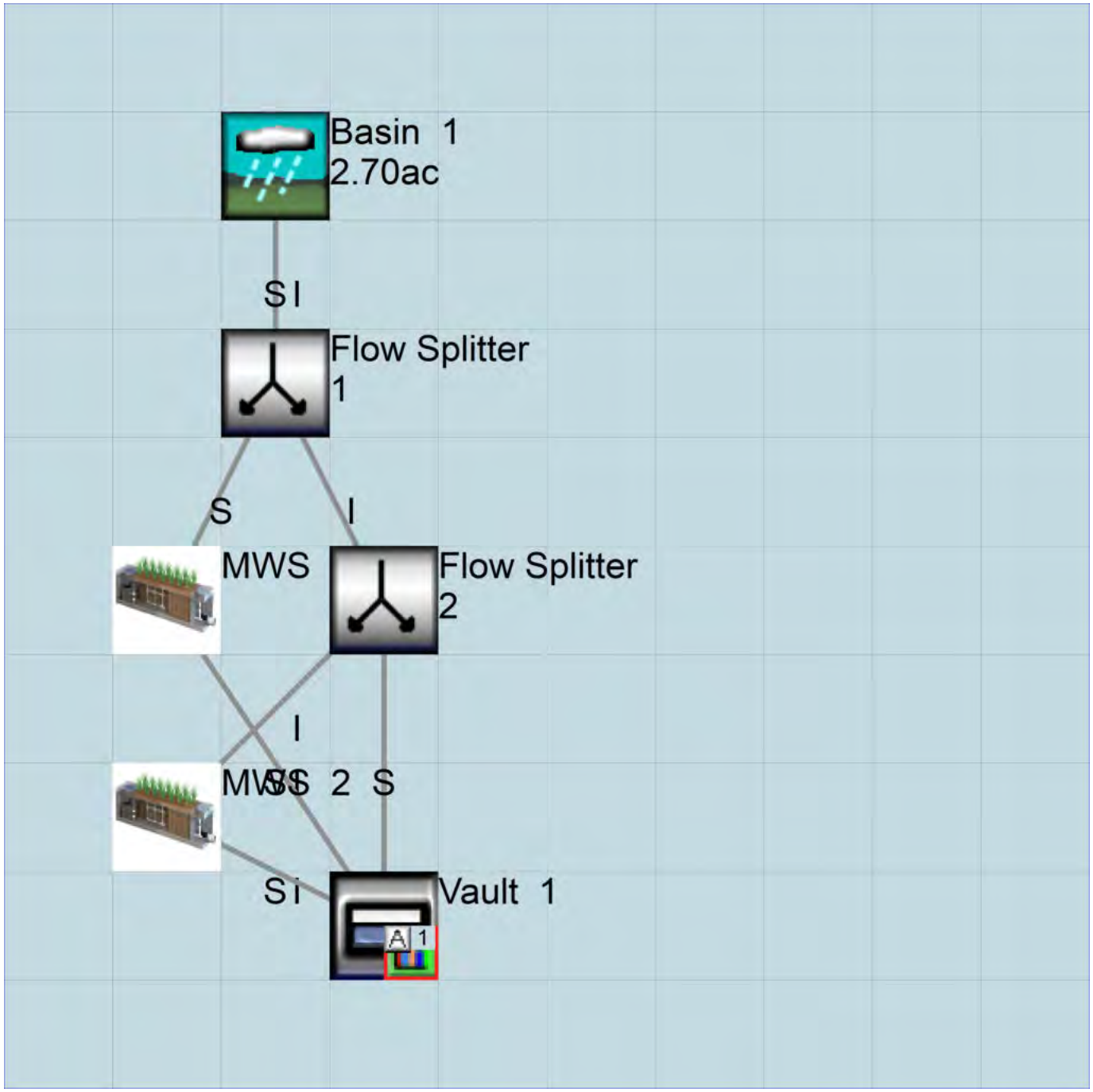
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1949 10 01        END    2006 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.wdm
MESSU       25   Pre117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.MES
            27   Pre117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.L61
            28   Pre117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.L62
            30   POC117-010 Argonaut SOHM HMP_20x50x4_2024-08-191.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      44
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                   MAX                     1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                      in  out           ***
   44     D,Open Brush,VSteep     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   44         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   44         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   44         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   44             0       3.7     0.012       250       0.2       0.8     0.955
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   44            40        35         4         2         0      0.03         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   44             0      0.25      0.25       0.3       0.3         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   44       0.4  0.4  0.4  0.5 0.55 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   44      0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   44             0         0     0.025         0      0.74       0.3      0.01
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2
```

```
  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  44                        2.77     COPY   501     12
PERLND  44                        2.77     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                              ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                     ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><--->
```

```
SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1949 10 01        END    2006 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.wdm
MESSU       25   Mit117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.MES
            27   Mit117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.L61
            28   Mit117-010 Argonaut SOHM HMP_20x50x4_2024-08-19.L62
            30   POC117-010 Argonaut SOHM HMP_20x50x4_2024-08-191.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      53
      IMPLND       1
      RCHRES       1
      RCHRES       2
      RCHRES       3
      RCHRES       4
      RCHRES       5
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Vault  1                   MAX                     1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   53     B,Urban,Flat(0-5%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   53         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

```
  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   53         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   53         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   53              0       4.8      0.07       400      0.05       0.8     0.955
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   53             40        35         2         2         0      0.03         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                                 ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   53              0       0.7      0.25         3       0.7         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   53       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   53      0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   53              0         0      0.07         0      0.96       0.3      0.01
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
    1     Impervious,Flat(0-5)    1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ****************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    1         0    0    4    0    0    0    1    9
  END PRINT-INFO
```

```
  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1           100      0.05       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    1             0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    1             0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  53                       2.15     RCHRES   1      2
PERLND  53                       2.15     RCHRES   1      3
IMPLND   1                       0.55     RCHRES   1      5

******Routing******
RCHRES   1                          1     RCHRES   2      7
RCHRES   1                          1     RCHRES   3      8
RCHRES   2                          1     RCHRES   5      7
RCHRES   2                                COPY     1     17
RCHRES   2                          1     RCHRES   5      8
RCHRES   2                                COPY     1     18
RCHRES   3                          1     RCHRES   5      7
RCHRES   3                                COPY     1     17
RCHRES   3                          1     RCHRES   4      8
RCHRES   4                          1     RCHRES   5      7
RCHRES   4                                COPY     1     17
RCHRES   4                          1     RCHRES   5      8
RCHRES   4                                COPY     1     18
RCHRES   5                          1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                      in  out                                ***
    1     Flow Splitter  1-005    2    1    1    1   28    0    1
    2     MWS  1                  2    1    1    1   28    0    1
    3     Flow Splitter  2-008    2    1    1    1   28    0    1
```

```
    4     MWS  2                2    1    1    1   28    0    1
    5     Vault  1              1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
    2         1    0    0    0    0    0    0    0    0    0
    3         1    0    0    0    0    0    0    0    0    0
    4         1    0    0    0    0    0    0    0    0    0
    5         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
    2         4    0    0    0    0    0    0    0    0    0    1    9
    3         4    0    0    0    0    0    0    0    0    0    1    9
    4         4    0    0    0    0    0    0    0    0    0    1    9
    5         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *       ***
    1       0  1  0  0    4  5  0  0  0       0  0  0  0  0       2  2  2  2  2
    2       0  1  0  0    4  5  0  0  0       0  0  0  0  0       2  2  2  2  2
    3       0  1  0  0    4  5  0  0  0       0  0  0  0  0       2  2  2  2  2
    4       0  1  0  0    4  5  0  0  0       0  0  0  0  0       2  2  2  2  2
    5       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->      ***
    1             1      0.01       0.0       0.0       0.5       0.0
    2             2      0.01       0.0      12.0       0.5       0.0
    3             3      0.01       0.0       0.0       0.5       0.0
    4             4      0.01       0.0      12.0       0.5       0.0
    5             5      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                     ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    2           0         4.0  5.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    3           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    4           0         4.0  5.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    5           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   90    5
     Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)      (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.002296  0.000000  0.000000  0.000000
  0.111111  0.002296  0.000255  1.302567  0.000000
  0.222222  0.002296  0.000510  1.842107  0.000000
  0.333333  0.002296  0.000765  2.256112  0.000000
```

0.444444	0.002296	0.001020	2.605133	0.000000
0.555556	0.002296	0.001275	2.912628	0.000000
0.666667	0.002296	0.001530	3.190624	0.000000
0.777778	0.002296	0.001786	3.446267	0.000000
0.888889	0.002296	0.002041	3.684215	0.000000
1.000000	0.002296	0.002296	3.907700	0.000000
1.111111	0.002296	0.002551	4.119077	0.000000
1.222222	0.002296	0.002806	4.320125	0.000000
1.333333	0.002296	0.003061	4.512223	0.000000
1.444444	0.002296	0.003316	4.696471	0.000000
1.555556	0.002296	0.003571	4.873758	0.000000
1.666667	0.002296	0.003826	5.044819	0.000000
1.777778	0.002296	0.004081	5.210267	0.000000
1.888889	0.002296	0.004336	5.370620	0.000000
2.000000	0.002296	0.004591	5.526322	0.000000
2.111111	0.002296	0.004846	5.677756	0.000000
2.222222	0.002296	0.005102	5.825255	0.000000
2.333333	0.002296	0.005357	5.969110	0.000000
2.444444	0.002296	0.005612	6.109579	0.000000
2.555556	0.002296	0.005867	6.246890	0.000000
2.666667	0.002296	0.006122	6.381247	0.000000
2.777778	0.002296	0.006377	6.512833	0.000000
2.888889	0.002296	0.006632	6.641813	0.000000
3.000000	0.002296	0.006887	6.768335	0.000000
3.111111	0.002296	0.007142	6.892535	0.000000
3.222222	0.002296	0.007397	7.014536	0.000000
3.333333	0.002296	0.007652	7.134451	0.000000
3.444444	0.002296	0.007907	7.252384	0.000000
3.555556	0.002296	0.008162	7.368430	63.96206
3.666667	0.002296	0.008418	7.482676	110.7855
3.777778	0.002296	0.008673	7.595204	143.0235
3.888889	0.002296	0.008928	7.706088	169.2277
4.000000	0.002296	0.009183	7.815400	191.8862
4.111111	0.002296	0.009438	9.101365	213.3163
4.222222	0.002296	0.009693	11.35469	233.9436
4.333333	0.002296	0.009948	14.21151	253.8010
4.444444	0.002296	0.010203	17.49811	272.9823
4.555556	0.002296	0.010458	21.06184	291.5255
4.666667	0.002296	0.010713	24.74759	309.4170
4.777778	0.002296	0.010968	28.39661	326.6064
4.888889	0.002296	0.011223	31.85390	343.0240
5.000000	0.002296	0.011478	34.98055	358.5993
5.111111	0.002296	0.011733	37.66942	373.2812
5.222222	0.002296	0.011989	39.86356	387.0593
5.333333	0.002296	0.012244	41.57678	399.9864
5.444444	0.002296	0.012499	42.91631	412.2030
5.555556	0.002296	0.012754	44.56505	424.4206
5.666667	0.002296	0.013009	45.89758	436.0384
5.777778	0.002296	0.013264	47.18850	447.3526
5.888889	0.002296	0.013519	48.44160	458.3861
6.000000	0.002296	0.013774	49.66012	469.1588
6.111111	0.002296	0.014029	50.84685	479.6886
6.222222	0.002296	0.014284	52.00424	489.9912
6.333333	0.002296	0.014539	53.13442	500.0808
6.444444	0.002296	0.014794	54.23928	509.9701
6.555556	0.002296	0.015049	55.32049	519.6706
6.666667	0.002296	0.015305	56.37956	529.1929
6.777778	0.002296	0.015560	57.41782	538.5464
6.888889	0.002296	0.015815	58.43650	547.7398
7.000000	0.002296	0.016070	59.43668	556.7810
7.111111	0.002296	0.016325	60.41936	565.6775
7.222222	0.002296	0.016580	61.38546	574.4359
7.333333	0.002296	0.016835	62.33580	583.0625
7.444444	0.002296	0.017090	63.27116	591.5631
7.555556	0.002296	0.017345	64.19223	599.9431
7.666667	0.002296	0.017600	65.09967	608.2075
7.777778	0.002296	0.017855	65.99408	616.3609
7.888889	0.002296	0.018110	66.87601	624.4076
8.000000	0.002296	0.018365	67.74599	632.3519
8.111111	0.002296	0.018621	68.60449	640.1975

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8.222222  0.002296  0.018876  69.45197  647.9480
8.333333  0.002296  0.019131  70.28886  655.6067
8.444444  0.002296  0.019386  71.11554  663.1769
8.555556  0.002296  0.019641  71.93239  670.6616
8.666667  0.002296  0.019896  72.73976  678.0636
8.777778  0.002296  0.020151  73.53798  685.3856
8.888889  0.002296  0.020406  74.32736  692.6301
9.000000  0.002296  0.020661  75.10818  699.7996
9.111111  0.002296  0.020916  75.88073  706.8963
9.222222  0.002296  0.021171  76.64527  713.9224
9.333333  0.002296  0.021426  77.40205  720.8800
9.444444  0.002296  0.021681  78.15130  727.7710
9.555556  0.002296  0.021937  78.89325  734.5973
9.666667  0.002296  0.022192  79.62811  741.3607
9.777778  0.002296  0.022447  80.35607  748.0630
9.888889  0.002296  0.022702  81.07735  754.7057
END FTABLE  1
FTABLE      2
 36    5
   Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)      (cfs)   (ft/sec)    (Minutes)***
0.000000  0.001469  0.000000  0.000000  0.000000
0.100000  0.001469  0.000186  0.000000  0.013083
0.200000  0.001469  0.000558  0.000000  0.026166
0.300000  0.001469  0.001115  0.000000  0.039248
0.400000  0.001469  0.001859  0.000000  0.052331
0.500000  0.001469  0.002788  0.000000  0.065414
0.600000  0.001469  0.003903  0.000000  0.078497
0.700000  0.001469  0.005205  0.000000  0.091580
0.800000  0.001469  0.006692  0.000000  0.104663
0.900000  0.001469  0.008365  0.000000  0.117745
1.000000  0.001469  0.010223  0.000000  0.130828
1.100000  0.001469  0.012268  0.000000  0.143911
1.200000  0.001469  0.014499  0.000000  0.156994
1.300000  0.001469  0.016915  0.000000  0.170077
1.400000  0.001469  0.019517  0.000000  0.183159
1.500000  0.001469  0.022306  0.000000  0.196242
1.600000  0.001469  0.025280  0.000000  0.209325
1.700000  0.001469  0.028440  0.000000  0.222408
1.800000  0.001469  0.031785  0.000000  0.235491
1.900000  0.001469  0.035317  0.000000  0.248574
2.000000  0.001469  0.039035  0.000000  0.261656
2.100000  0.001469  0.042938  0.000000  0.274739
2.200000  0.001469  0.047027  0.000000  0.287822
2.300000  0.001469  0.051303  0.000000  0.300905
2.400000  0.001469  0.055764  0.000000  0.313988
2.500000  0.001469  0.060411  0.000000  0.327070
2.600000  0.001469  0.065244  0.000000  0.340153
2.700000  0.001469  0.070262  0.000000  0.353236
2.800000  0.001469  0.075467  0.000000  0.366319
2.900000  0.001469  0.080857  0.000000  0.379402
3.000000  0.001469  0.086434  0.000000  0.392484
3.100000  0.001469  0.092196  0.000000  0.405567
3.200000  0.001469  0.098144  0.000000  0.418650
3.300000  0.001469  0.104278  0.000000  0.431733
3.400000  0.001469  0.110598  0.000000  0.444816
4.400000  0.001469  0.117104  6.000000  0.444816
END FTABLE  2
FTABLE      5
 92    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.022957  0.000000  0.000000
0.044444  0.022957  0.001020  0.022884
0.088889  0.022957  0.002041  0.032363
0.133333  0.022957  0.003061  0.039636
0.177778  0.022957  0.004081  0.045768
0.222222  0.022957  0.005102  0.051170
0.266667  0.022957  0.006122  0.056054
0.311111  0.022957  0.007142  0.060545
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0.355556	0.022957	0.008162	0.064725
0.400000	0.022957	0.009183	0.068651
0.444444	0.022957	0.010203	0.072365
0.488889	0.022957	0.011223	0.075897
0.533333	0.022957	0.012244	0.079272
0.577778	0.022957	0.013264	0.082509
0.622222	0.022957	0.014284	0.085623
0.666667	0.022957	0.015305	0.088628
0.711111	0.022957	0.016325	0.091535
0.755556	0.022957	0.017345	0.094352
0.800000	0.022957	0.018365	0.097088
0.844444	0.022957	0.019386	0.099748
0.888889	0.022957	0.020406	0.102339
0.933333	0.022957	0.021426	0.104867
0.977778	0.022957	0.022447	0.107334
1.022222	0.022957	0.023467	0.109747
1.066667	0.022957	0.024487	0.112107
1.111111	0.022957	0.025508	0.114419
1.155556	0.022957	0.026528	0.116685
1.200000	0.022957	0.027548	0.118908
1.244444	0.022957	0.028569	0.121089
1.288889	0.022957	0.029589	0.123233
1.333333	0.022957	0.030609	0.125340
1.377778	0.022957	0.031629	0.127411
1.422222	0.022957	0.032650	0.129450
1.466667	0.022957	0.033670	0.131457
1.511111	0.022957	0.034690	0.133434
1.555556	0.022957	0.035711	0.135382
1.600000	0.022957	0.036731	0.137303
1.644444	0.022957	0.037751	0.139197
1.688889	0.022957	0.038772	0.141065
1.733333	0.022957	0.039792	0.142909
1.777778	0.022957	0.040812	0.144730
1.822222	0.022957	0.041832	0.146528
1.866667	0.022957	0.042853	0.154036
1.911111	0.022957	0.043873	0.190304
1.955556	0.022957	0.044893	0.243154
2.000000	0.022957	0.045914	0.308273
2.044444	0.022957	0.046934	0.383622
2.088889	0.022957	0.047954	0.467932
2.133333	0.022957	0.048975	0.560316
2.177778	0.022957	0.049995	0.660110
2.222222	0.022957	0.051015	0.766788
2.266667	0.022957	0.052036	0.879925
2.311111	0.022957	0.053056	0.999164
2.355556	0.022957	0.054076	1.124204
2.400000	0.022957	0.055096	1.254782
2.444444	0.022957	0.056117	1.390670
2.488889	0.022957	0.057137	1.531664
2.533333	0.022957	0.058157	1.665682
2.577778	0.022957	0.059178	1.915113
2.622222	0.022957	0.060198	2.249489
2.666667	0.022957	0.061218	2.647587
2.711111	0.022957	0.062239	3.094400
2.755556	0.022957	0.063259	3.576155
2.800000	0.022957	0.064279	4.078956
2.844444	0.022957	0.065299	4.588531
2.888889	0.022957	0.066320	5.090476
2.933333	0.022957	0.067340	5.570795
2.977778	0.022957	0.068360	6.016645
3.022222	0.022957	0.069381	6.417226
3.066667	0.022957	0.070401	6.764807
3.111111	0.022957	0.071421	7.055862
3.155556	0.022957	0.072442	7.292295
3.200000	0.022957	0.073462	7.482769
3.244444	0.022957	0.074482	7.644103
3.288889	0.022957	0.075502	7.887251
3.333333	0.022957	0.076523	8.063453
3.377778	0.022957	0.077543	8.235041
3.422222	0.022957	0.078563	8.402362

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3.466667  0.022957  0.079584  8.565720
3.511111  0.022957  0.080604  8.725385
3.555556  0.022957  0.081624  8.881598
3.600000  0.022957  0.082645  9.034574
3.644444  0.022957  0.083665  9.184507
3.688889  0.022957  0.084685  9.331573
3.733333  0.022957  0.085706  9.475931
3.777778  0.022957  0.086726  9.617725
3.822222  0.022957  0.087746  9.757088
3.866667  0.022957  0.088766  9.894141
3.911111  0.022957  0.089787  10.02900
3.955556  0.022957  0.090807  10.16176
4.000000  0.022957  0.091827  10.29251
4.044444  0.022957  0.092848  10.42136
END FTABLE  5
FTABLE      3
 90    5
   Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)     (cfs)   (ft/sec)    (Minutes)***
0.000000  0.002296  0.000000  0.000000  0.000000
0.111111  0.002296  0.000255  1.302567  0.000000
0.222222  0.002296  0.000510  1.842107  0.000000
0.333333  0.002296  0.000765  2.256112  0.000000
0.444444  0.002296  0.001020  2.605133  0.000000
0.555556  0.002296  0.001275  2.912628  0.000000
0.666667  0.002296  0.001530  3.190624  0.000000
0.777778  0.002296  0.001786  3.446267  0.000000
0.888889  0.002296  0.002041  3.684215  0.000000
1.000000  0.002296  0.002296  3.907700  0.000000
1.111111  0.002296  0.002551  4.119077  0.000000
1.222222  0.002296  0.002806  4.320125  0.000000
1.333333  0.002296  0.003061  4.512223  0.000000
1.444444  0.002296  0.003316  4.696471  0.000000
1.555556  0.002296  0.003571  4.873758  0.000000
1.666667  0.002296  0.003826  5.044819  0.000000
1.777778  0.002296  0.004081  5.210267  0.000000
1.888889  0.002296  0.004336  5.370620  0.000000
2.000000  0.002296  0.004591  5.526322  0.000000
2.111111  0.002296  0.004846  5.677756  0.000000
2.222222  0.002296  0.005102  5.825255  0.000000
2.333333  0.002296  0.005357  5.969110  0.000000
2.444444  0.002296  0.005612  6.109579  0.000000
2.555556  0.002296  0.005867  6.246890  0.000000
2.666667  0.002296  0.006122  6.381247  0.000000
2.777778  0.002296  0.006377  6.512833  0.000000
2.888889  0.002296  0.006632  6.641813  0.000000
3.000000  0.002296  0.006887  6.768335  0.000000
3.111111  0.002296  0.007142  6.892535  0.000000
3.222222  0.002296  0.007397  7.014536  0.000000
3.333333  0.002296  0.007652  7.134451  0.000000
3.444444  0.002296  0.007907  7.252384  0.000000
3.555556  0.002296  0.008162  7.368430  63.96206
3.666667  0.002296  0.008418  7.482676  110.7855
3.777778  0.002296  0.008673  7.595204  143.0235
3.888889  0.002296  0.008928  7.706088  169.2277
4.000000  0.002296  0.009183  7.815400  191.8862
4.111111  0.002296  0.009438  9.101365  213.3163
4.222222  0.002296  0.009693  11.35469  233.9436
4.333333  0.002296  0.009948  14.21151  253.8010
4.444444  0.002296  0.010203  17.49811  272.9823
4.555556  0.002296  0.010458  21.06184  291.5255
4.666667  0.002296  0.010713  24.74759  309.4170
4.777778  0.002296  0.010968  28.39661  326.6064
4.888889  0.002296  0.011223  31.85390  343.0240
5.000000  0.002296  0.011478  34.98055  358.5993
5.111111  0.002296  0.011733  37.66942  373.2812
5.222222  0.002296  0.011989  39.86356  387.0593
5.333333  0.002296  0.012244  41.57678  399.9864
5.444444  0.002296  0.012499  42.91631  412.2030
5.555556  0.002296  0.012754  44.56505  424.4206
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5.666667  0.002296  0.013009  45.89758  436.0384
5.777778  0.002296  0.013264  47.18850  447.3526
5.888889  0.002296  0.013519  48.44160  458.3861
6.000000  0.002296  0.013774  49.66012  469.1588
6.111111  0.002296  0.014029  50.84685  479.6886
6.222222  0.002296  0.014284  52.00424  489.9912
6.333333  0.002296  0.014539  53.13442  500.0808
6.444444  0.002296  0.014794  54.23928  509.9701
6.555556  0.002296  0.015049  55.32049  519.6706
6.666667  0.002296  0.015305  56.37956  529.1929
6.777778  0.002296  0.015560  57.41782  538.5464
6.888889  0.002296  0.015815  58.43650  547.7398
7.000000  0.002296  0.016070  59.43668  556.7810
7.111111  0.002296  0.016325  60.41936  565.6775
7.222222  0.002296  0.016580  61.38546  574.4359
7.333333  0.002296  0.016835  62.33580  583.0625
7.444444  0.002296  0.017090  63.27116  591.5631
7.555556  0.002296  0.017345  64.19223  599.9431
7.666667  0.002296  0.017600  65.09967  608.2075
7.777778  0.002296  0.017855  65.99408  616.3609
7.888889  0.002296  0.018110  66.87601  624.4076
8.000000  0.002296  0.018365  67.74599  632.3519
8.111111  0.002296  0.018621  68.60449  640.1975
8.222222  0.002296  0.018876  69.45197  647.9480
8.333333  0.002296  0.019131  70.28886  655.6067
8.444444  0.002296  0.019386  71.11554  663.1769
8.555556  0.002296  0.019641  71.93239  670.6616
8.666667  0.002296  0.019896  72.73976  678.0636
8.777778  0.002296  0.020151  73.53798  685.3856
8.888889  0.002296  0.020406  74.32736  692.6301
9.000000  0.002296  0.020661  75.10818  699.7996
9.111111  0.002296  0.020916  75.88073  706.8963
9.222222  0.002296  0.021171  76.64527  713.9224
9.333333  0.002296  0.021426  77.40205  720.8800
9.444444  0.002296  0.021681  78.15130  727.7710
9.555556  0.002296  0.021937  78.89325  734.5973
9.666667  0.002296  0.022192  79.62811  741.3607
9.777778  0.002296  0.022447  80.35607  748.0630
9.888889  0.002296  0.022702  81.07735  754.7057
END FTABLE  3
FTABLE      4
 36    5
   Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)      (cfs)   (ft/sec)    (Minutes)***
0.000000  0.001469  0.000000  0.000000  0.000000
0.100000  0.001469  0.000186  0.000000  0.013083
0.200000  0.001469  0.000558  0.000000  0.026166
0.300000  0.001469  0.001115  0.000000  0.039248
0.400000  0.001469  0.001859  0.000000  0.052331
0.500000  0.001469  0.002788  0.000000  0.065414
0.600000  0.001469  0.003903  0.000000  0.078497
0.700000  0.001469  0.005205  0.000000  0.091580
0.800000  0.001469  0.006692  0.000000  0.104663
0.900000  0.001469  0.008365  0.000000  0.117745
1.000000  0.001469  0.010223  0.000000  0.130828
1.100000  0.001469  0.012268  0.000000  0.143911
1.200000  0.001469  0.014499  0.000000  0.156994
1.300000  0.001469  0.016915  0.000000  0.170077
1.400000  0.001469  0.019517  0.000000  0.183159
1.500000  0.001469  0.022306  0.000000  0.196242
1.600000  0.001469  0.025280  0.000000  0.209325
1.700000  0.001469  0.028440  0.000000  0.222408
1.800000  0.001469  0.031785  0.000000  0.235491
1.900000  0.001469  0.035317  0.000000  0.248574
2.000000  0.001469  0.039035  0.000000  0.261656
2.100000  0.001469  0.042938  0.000000  0.274739
2.200000  0.001469  0.047027  0.000000  0.287822
2.300000  0.001469  0.051303  0.000000  0.300905
2.400000  0.001469  0.055764  0.000000  0.313988
2.500000  0.001469  0.060411  0.000000  0.327070
```

```
  2.600000  0.001469  0.065244  0.000000  0.340153
  2.700000  0.001469  0.070262  0.000000  0.353236
  2.800000  0.001469  0.075467  0.000000  0.366319
  2.900000  0.001469  0.080857  0.000000  0.379402
  3.000000  0.001469  0.086434  0.000000  0.392484
  3.100000  0.001469  0.092196  0.000000  0.405567
  3.200000  0.001469  0.098144  0.000000  0.418650
  3.300000  0.001469  0.104278  0.000000  0.431733
  3.400000  0.001469  0.110598  0.000000  0.444816
  4.400000  0.001469  0.117104  6.000000  0.444816
  END FTABLE  4
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  53     EXTNL  SURLI
WDM      2 PREC     ENGL    1              RCHRES   2     EXTNL  PREC
WDM      2 PREC     ENGL    1              RCHRES   4     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   2     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   4     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   5 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   5 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     48.4      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK        7
RCHRES     OFLOW  OVOL   1                 RCHRES         INFLOW IVOL
  END MASS-LINK    7

  MASS-LINK        8
RCHRES     OFLOW  OVOL   2                 RCHRES         INFLOW IVOL
  END MASS-LINK    8

  MASS-LINK       16
RCHRES     ROFLOW                         COPY           INPUT  MEAN
  END MASS-LINK   16

  MASS-LINK       17
RCHRES     OFLOW  OVOL   1                 COPY           INPUT  MEAN
  END MASS-LINK   17

  MASS-LINK       18
RCHRES     OFLOW  OVOL   2                 COPY           INPUT  MEAN
```

```
  END MASS-LINK   18

END MASS-LINK

END RUN
```

Disclaimer

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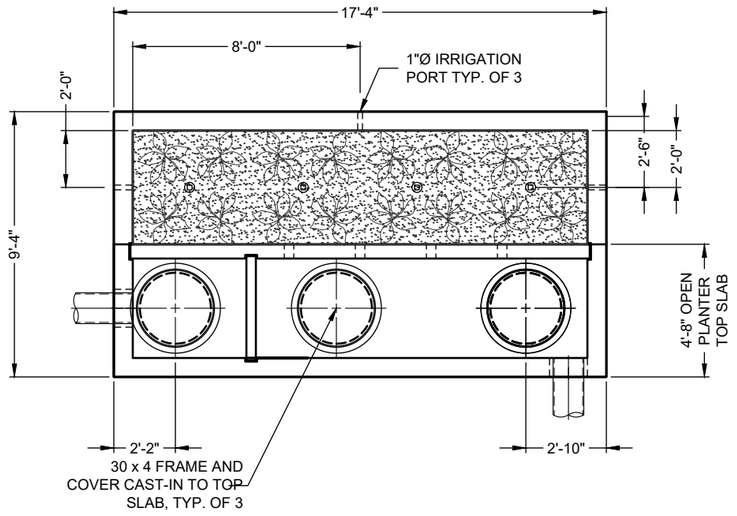
StormTrap

ARGONAUT
STAGE STORAGE BREAKDOWN
3'-3" SingleTrap
TOTAL VOLUME: 3215.66 (C.F.)

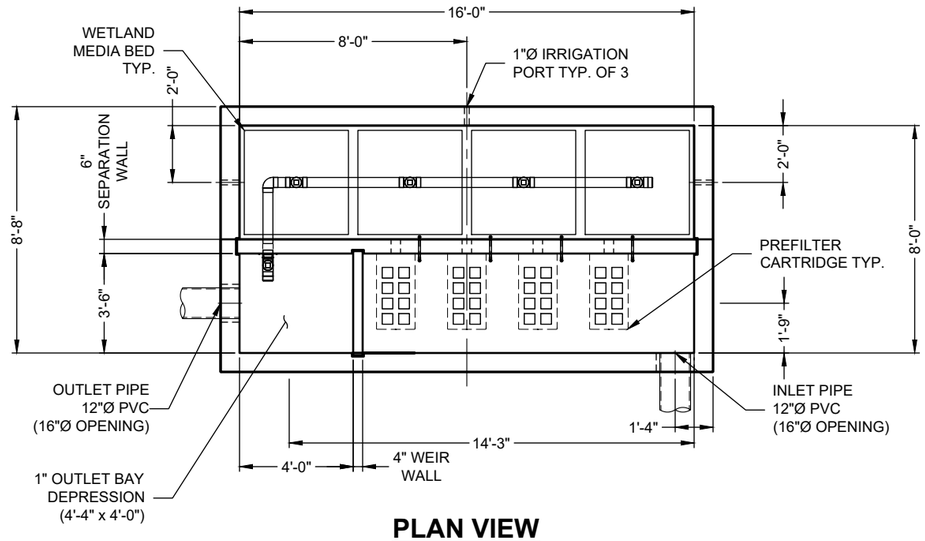
Storage Height	T1	T2	T4	T7	T74	T4 SP1	T4 SP2	Total Units	Stage Storage Elevation
	0	3	6	0	0	2	0	11	
									System Invert 433.45
0.25	0.00	88.02	133.72	0.00	0.00	30.12	0.00	247.36	433.70
0.50	0.00	176.04	267.45	0.00	0.00	60.23	0.00	494.72	433.95
0.75	0.00	264.05	401.17	0.00	0.00	90.35	0.00	742.07	434.20
1.00	0.00	352.07	534.89	0.00	0.00	120.47	0.00	989.43	434.45
1.25	0.00	440.09	668.61	0.00	0.00	150.59	0.00	1,236.79	434.70
1.50	0.00	528.11	802.34	0.00	0.00	180.70	0.00	1,484.15	434.95
1.75	0.00	616.12	936.06	0.00	0.00	210.82	0.00	1,731.51	435.20
2.00	0.00	704.14	1,069.78	0.00	0.00	240.94	0.00	1,978.87	435.45
2.25	0.00	792.16	1,203.51	0.00	0.00	271.06	0.00	2,226.22	435.70
2.50	0.00	880.18	1,337.23	0.00	0.00	301.17	0.00	2,473.58	435.95
2.75	0.00	968.20	1,470.95	0.00	0.00	331.29	0.00	2,720.94	436.20
3.18	0.00	1,119.59	1,700.96	0.00	0.00	383.09	0.00	3,146.40	436.63
3.25	0.00	1,144.23	1,738.40	0.00	0.00	391.53	0.00	3,215.66	436.70
3.50	0.00	1,232.25	1,872.12	0.00	0.00	421.64	0.00	N/A	436.95
3.75	0.00	1,320.27	2,005.84	0.00	0.00	451.76	0.00	N/A	437.20
4.00	0.00	1,408.29	2,139.57	0.00	0.00	481.88	0.00	N/A	437.45
4.25	0.00	1,496.30	2,273.29	0.00	0.00	512.00	0.00	N/A	437.70
4.50	0.00	1,584.32	2,407.01	0.00	0.00	542.11	0.00	N/A	437.95
4.75	0.00	1,672.34	2,540.74	0.00	0.00	572.23	0.00	N/A	438.20
5.00	0.00	1,760.36	2,674.46	0.00	0.00	602.35	0.00	N/A	438.45
5.25	0.00	1,848.37	2,808.18	0.00	0.00	632.47	0.00	N/A	438.70
5.50	0.00	1,936.39	2,941.91	0.00	0.00	662.58	0.00	N/A	438.95

PHONE 815 941 4549
FAX 331 318 5347
WEB www.stormtrap.com
EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

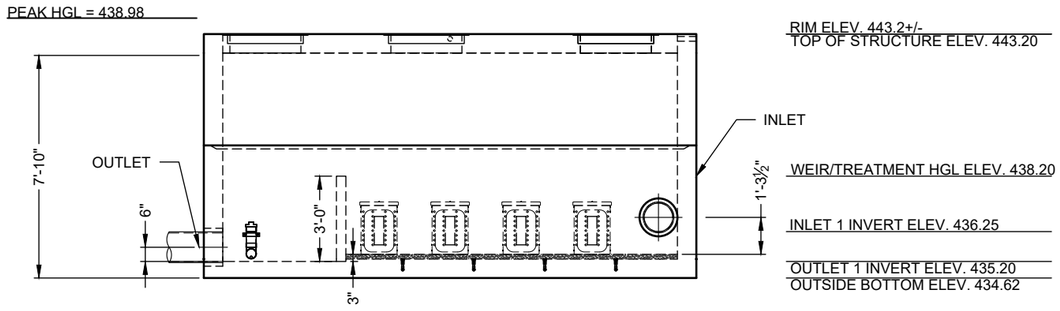
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PLAN VIEW

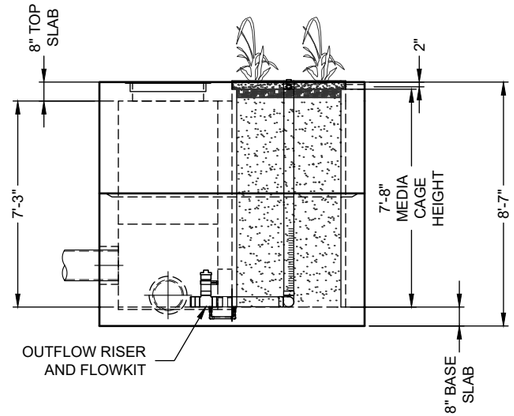


PLAN VIEW
TOP SLAB NOT SHOWN



ELEVATION VIEW*

*MEDIA CASTINGS, IF REQUIRED, NOT SHOWN



RIGHT END VIEW

SITE DESIGN DATA	
WATER QUALITY FLOW (CFS)	0.37
PEAK FLOW RATE (CFS)	8.10
RETURN PERIOD (YRS)	10
MAXIMUM POLLUTANT DENSITY (PREFILTER) (GPM/SF)	3.0
PREFILTER LOADING RATE (GPM/SF)	1.62
WETLAND MEDIA LOADING RATE (GPM/SF)	1.00
MEDIA OPERATING HEAD (FT)	2.72
SURFACE LOADING	PEDESTRIAN
GROUNDWATER ELEVATION*	435.2

*GROUNDWATER ELEVATION IS ASSUMED. EOR TO PROVIDE IF KNOWN

STRUCTURE DETAILS	
NUMBER OF DELIVERED PIECES (DOES NOT INCLUDE GRADE RINGS/RISERS)	3
MAXIMUM FOOTPRINT	9.33' x 17.33'
DELIVERED HEAVIEST PICK*	44475 LB.
TOP SLAB	1100 LB.
TOP SECTION	27150 LB.
RISER SECTION	0 LB.
BASE SECTION	44475 LB.
INTERNAL COMPONENTS	LB.

RVRSD
6505 / 000000
LAYOUT 4
MWS-L-8-16-R
17.03 TS
4.48 TIW

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www.ContechES.com
6655 Wedgwood Road, Suite 130, Maple Grove, MN 55311
763-231-3705 763-416-1633 FAX

CONTECH STORMWATER SOLUTIONS WETLANDS
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

CONTECH
PROPOSAL
DRAWING

MODULAR WETLANDS MWSL0816OP - 815864-010
95 ARGONAUT
ALISO VIEJO, CA
SITE DESIGNATION: MWS #1

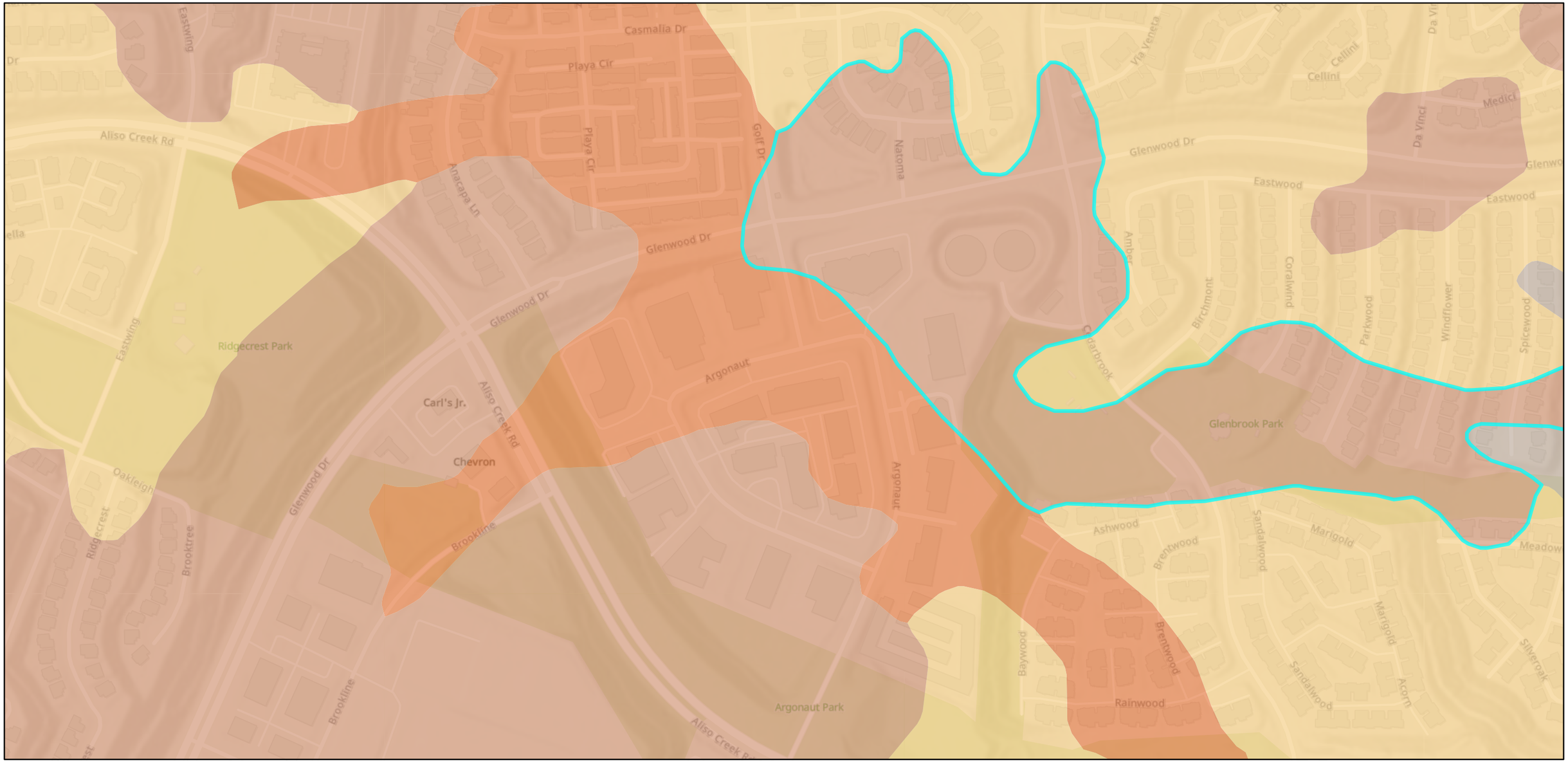
PROJECT No.:	SEQ. No.:	DATE:
815864	010	08/23/2024
DESIGNED: MCD		DRAWN: MCD
CHECKED: MCD		APPROVED: MCD
SHEET NO.: 1 OF		2341

\\QUIKRETE.NET\CONTECH\MERLIN\PROJECTVACTIVE\815800\815864\815864-10-MODULAR WETLANDS\DRAWINGS\815864-10-MWSL0816OP-CONFAB.DWG 8/23/2024 10:02 AM

Attachment D: Supporting Exhibits

- Attachment D1: OCPW Land Development Soil Map
- Attachment D2: Southern Orange County TGD Critical Coarse Sediment Map
- Attachment D3: OCTGD Rainfall Zones Design Capture Storm Depth Map
- Attachment D4: OCTGD Capture Efficiency Nomograph
- Attachment D5: 95 Argonaut Historical Photograph 1938 (https://www.historicaerials.com/)
- Attachment D6: 95 Argonaut Historical Topographic Map 1949 (https://www.historicaerials.com/)
- Attachment D7: OCTGD BIO-7 Proprietary Biotreatment BMP Checklist
- Attachment D8: Modular Wetland System Linear 8x16 Contech preliminary plan sheets
- Attachment D9: StormTrap subsurface detention basin and flow control structure

95 Argonaut HSG Soil Map



9/4/2024

Land Development Resources

Hydro Group Soils

A

B

C

D

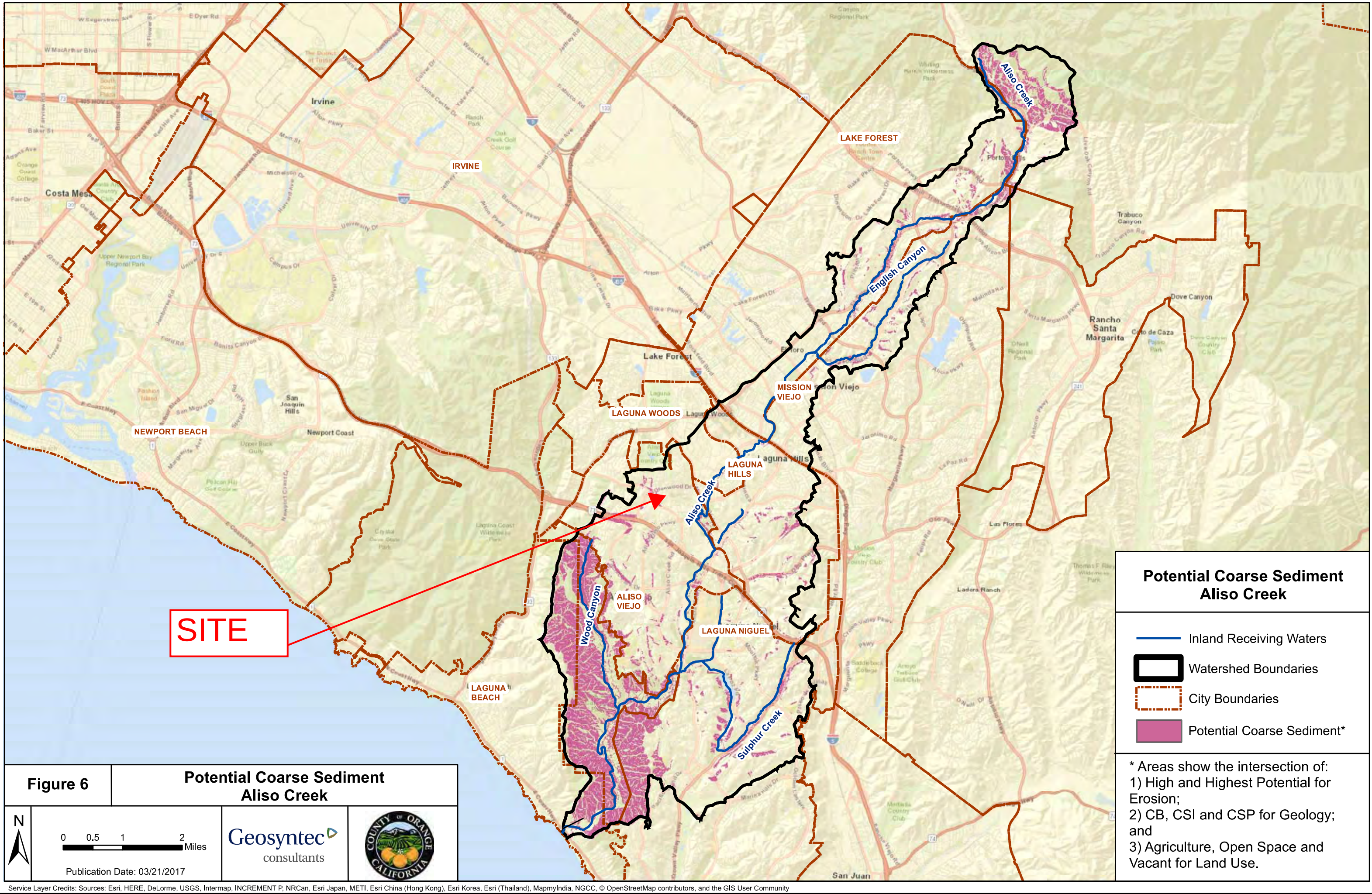
World Hillshade

1:4,514

0 0.04 0.09 0.17 mi

0 0.05 0.1 0.2 km

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Irvine
IRVINE
LAKE FOREST
Costa Mesa
Lake Forest
LAGUNA WOODS
MISSION VIEJO
Mission Viejo
NEWPORT BEACH
Newport Coast
San Joaquin Hills
LAGUNA HILLS
ALISO VIEJO
LAGUNA NIGUEL
LAGUNA BEACH
Rancho Santa Margarita
Trabuco Canyon
Dove Canyon
Ladera Ranch
San Juan
Aliso Creek
English Canyon
Wood Canyon
Sulphur Creek
SITE
Figure 6
Potential Coarse Sediment
Aliso Creek
N
0 0.5 1 2 Miles
Publication Date: 03/21/2017
Geosyntec consultants
Potential Coarse Sediment
Aliso Creek
Inland Receiving Waters
Watershed Boundaries
City Boundaries
Potential Coarse Sediment*
* Areas show the intersection of:
1) High and Highest Potential for Erosion;
2) CB, CSI and CSP for Geology; and
3) Agriculture, Open Space and Vacant for Land Use.
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

2344

SUBJECT TO FURTHER REVISION

LEGEND

- Orange County Precipitation Stations
- 24 Hour, 85th Percentile Rainfall (Inches)
- 24 Hour, 85th Percentile Rainfall (Inches) - Extrapolated
- City Boundaries

Rainfall Zones

Design Capture Storm Depth (inches)

- 0.65"
- 0.7
- 0.75
- 0.80
- 0.85
- 0.90
- 0.95
- 1.00
- 1.10"

Note: Events defined as 24-hour periods (calendar days) with greater than 0.1 inches of rainfall.
For areas outside of available data coverage, professional judgment shall be applied.

0.65 0.7 0.75 0.8 0.85 0.9 0.95 1 1.05

LOS ANGELES COUNTY
ORANGE COUNTY
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY

0 3 6 12 Kilometers
0 1.8 3.6 7.2 Miles

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-1_RainfallZones_20110215.mxd

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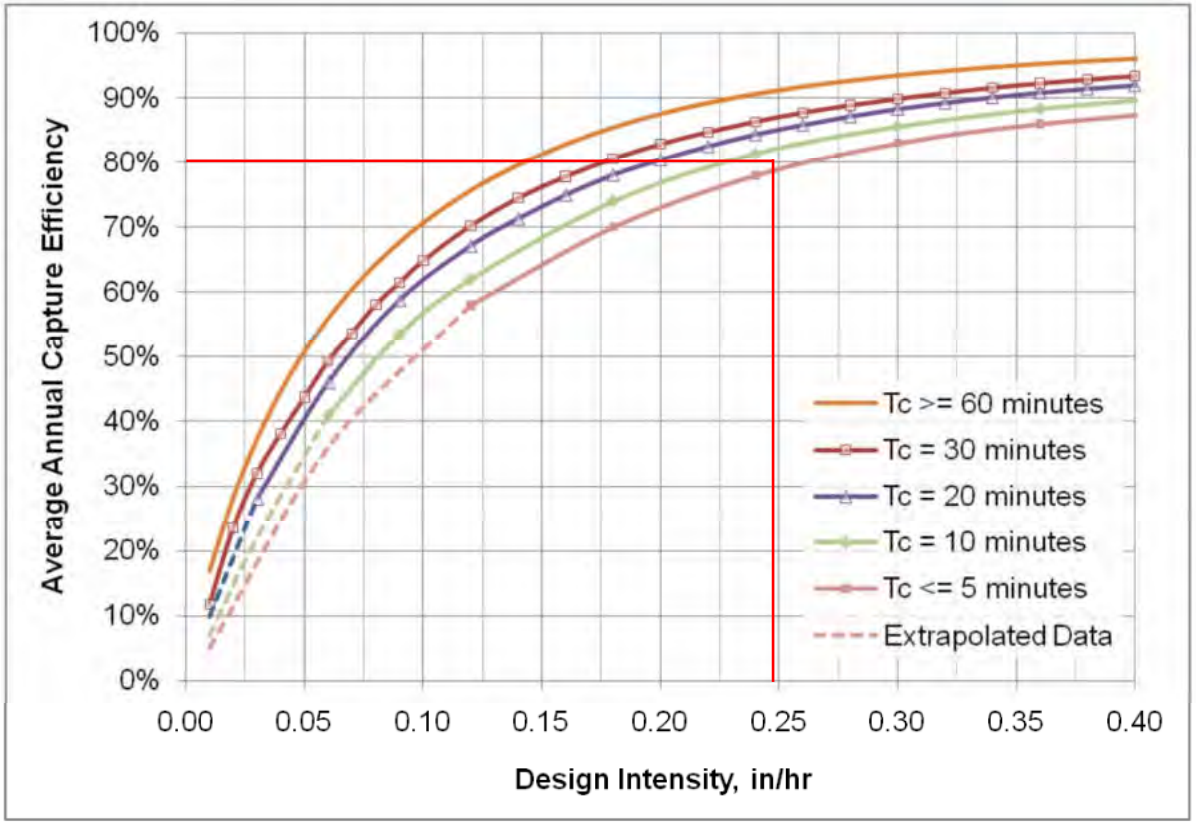
JOB: ORANGE COUNTY TECHNICAL GUIDANCE DOCUMENT — ORANGE CO. CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	9526-E

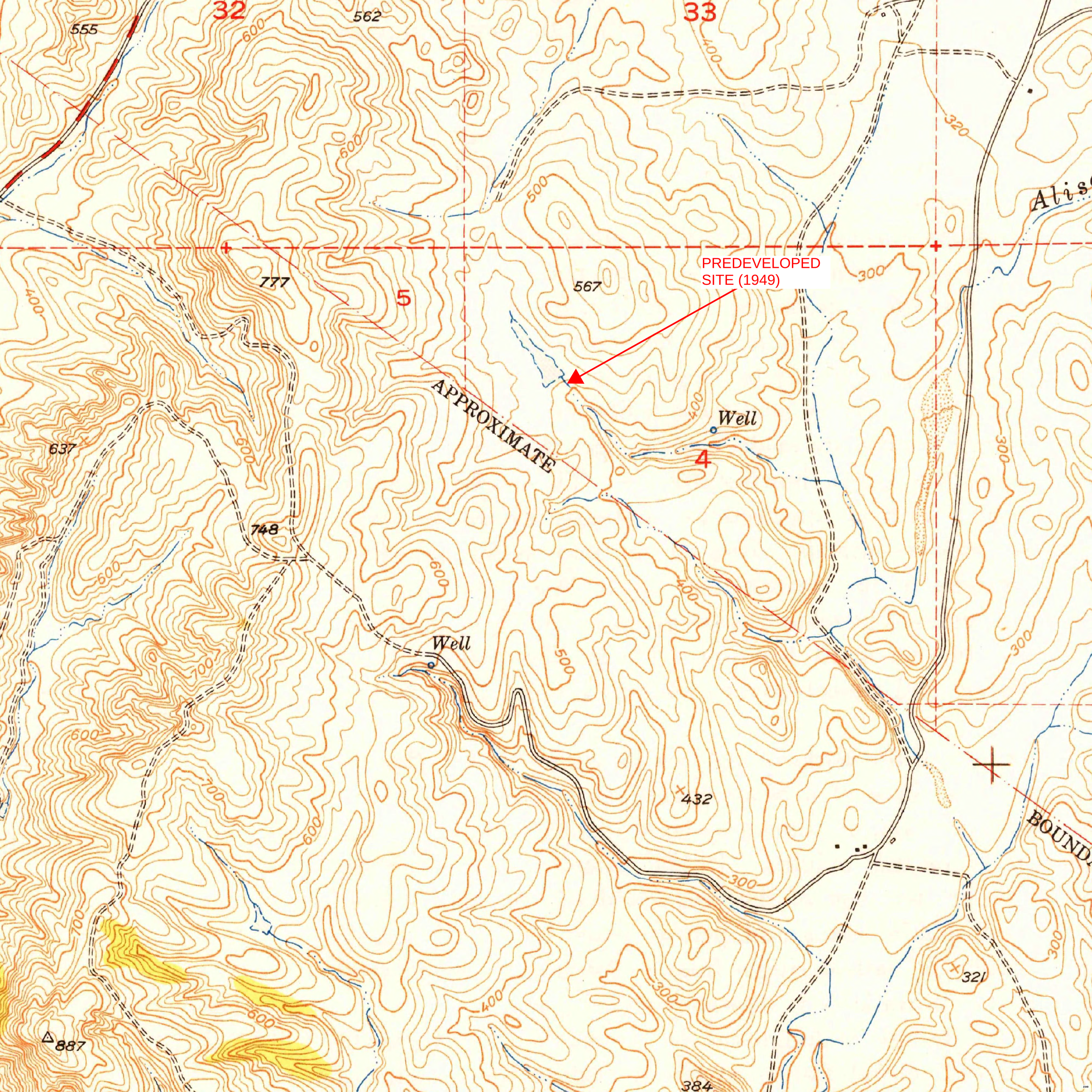
PACE Advanced Water Engineering

FIGURE XVI-1

Figure III.4. Capture Efficiency Nomograph for Off-line Flow-based Systems in Orange County




PREDEVELOPED SITE (1938)


PREDEVELOPED
SITE (1949)
APPROXIMATE
32
33
5
4
555
562
567
777
637
748
887
432
321
384
Well
Well
600
500
400
300
700
Alis
BOUND

BIO-5/BIO-7: PROPRIETARY BIOTREATMENT

Category: Biotreatment with Partial Infiltration (when accompanied by supplemental retention)

Biotreatment with No Infiltration (when used without supplemental retention)

Proprietary biotreatment BMPs are proprietary devices that are manufactured to treat stormwater. **Acceptance criteria for proprietary biotreatment BMPs are defined in Appendix J**. Proprietary BMPs that do not meet these acceptance criteria are not permitted. In addition, proprietary biotreatment BMPs must meet the definition of biofiltration in order to be used as LID biotreatment BMPs. There are two configurations of proprietary biotreatment, as explained in the following subsections.

BIO-5: Proprietary Biotreatment with Enhanced Retention Configuration

As standalone systems, proprietary biotreatment BMPs typically provide negligible volume reduction. To be used as a "biotreatment BMP with partial infiltration," these BMPs must be accompanied by a retention compartment. This could consist of several options:

- Permeable pavement upstream of the proprietary BMPl
- Shallow infiltration gallery or chambers downstream of the BMP, connected to underdrains.
- Proprietary biotreatment downstream of a cistern for harvest and use.
- Use of adequate hydrologic source controls in the watershed to meet volume reduction targets (see Sizing section of this Fact Sheet).
- Other configurations that are determined to be appropriate to maximize the feasible volume reduction for the DMA.

Guidance for retention compartments is provided in other fact sheets, such as INF-5 (Permeable Pavement) and INF-6 (Underground Infiltration).

BIO-7: Standard Configuration without Supplemental Retention

For conditions that do not require partial infiltration, volume retention is not a performance goal. Acceptable proprietary biotreatment BMPs may be used as standalone systems. Guidance related to complementary retention can be disregarded.

Pollutant Removal Considerations

BMPs that meet the acceptance criteria in **Appendix J** are considered to provide adequate treatment for pollutants of concern. According to these critera, there are different levels of treatment certification needed for different pollutants of concern.

Recommended Design Criteria and Considerations

	Design Criteria	Intent/Rationale
☐	Sediment sources should be controlled prior to operation of the system.	Proprietary systems are susceptible to clogging similar to other BMPs. Systems should not be used in areas that will continue to receive elevated sediment loading following construction, such as from open space area.
☐	When accompanied by infiltration compartments, the ponding should not be higher than the underdrain elevation of the proprietary BMP.	This is intended to ensure that the complementary retention compartment does not reduce the hydraulic capacity of the proprietary biotreatment BMP.
☐	When accompanied by infiltration compartments, these infiltration BMPs must adhere to siting guidance found in the respective fact sheet for the BMP	Specific siting considerations apply to infiltration BMPs.
☐	Proprietary biotreatment systems typically do not require separate pretreatment	These BMPs typically include integrated mechanisms for pretreatment.
☐	Proprietary BMPs must be designed in a manner consistent with manufacturer recommendations and consistent with the design configuration that was tested as part of the BMP certification	Proprietary devices have device-specific design, installation, and maintenance details which must be followed for proper treatment results.
☐	In right of way areas, plant selection should not impair traffic sightlines or vehicle access.	Vegetation must not be prohibitive for typical vehicular movement and parking access needs.
☐	Manufacturer guidance on vegetation selection and establishment should be followed	Manufacturers have experience with plant survival in specific climates for the BMP-specific conditions.

Calculations and Sizing Method

Proprietary Biotreatment BMPs are flow-based BMPs. See **Appendix E** for acceptable sizing methods.

Supplemental retention elements (for BIO-5 configuration) should be sized for one of the following targets, where possible:

- Approximately 40 percent long term volume reduction.
- Retention storage provided for approximately one-third of the DCV.
- Infiltration footprint (collective of all infiltrating elements of the project design) meeting target defined in **Section E.4.2**.

Construction Guidance

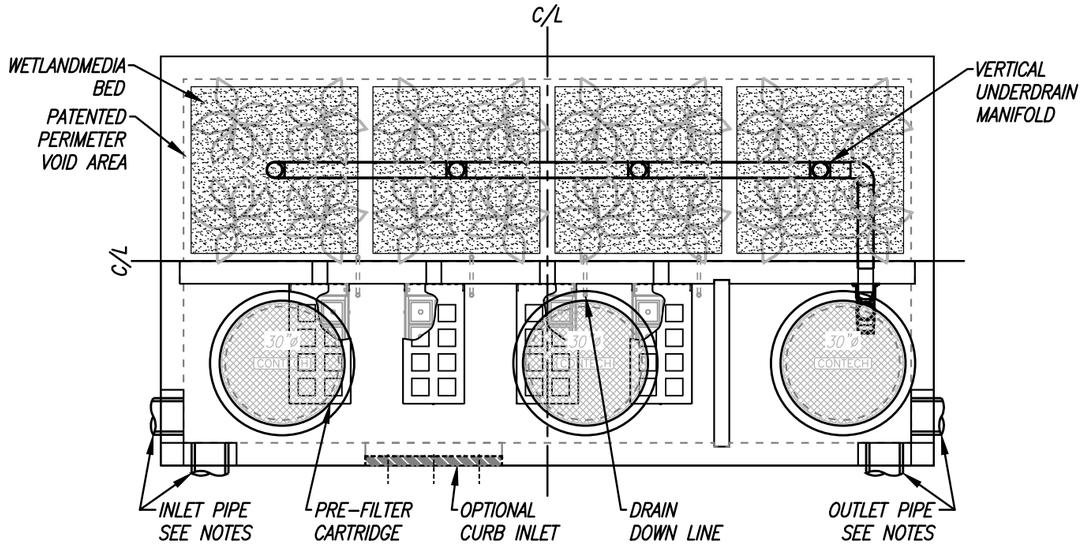
Construction Guidance	Intent/Rationale
☐ Plans should include a construction sequence for the BMP. Revisions proposed by the contractor should be reviewed by the engineer. The construction sequence should address erosion control, utilities, BMP installation, inspections, testing and certifications, vegetation, stabilization, and post-construction monitoring.	Construction sequencing is critical to avoid issues/damage and allow appropriate inspections, testing, and certifications to be performed.
☐ Provide for inspection of buried infrastructure (e.g., underdrain, filter course) before it is buried.	It is impractical to inspect buried elements once they are covered.
☐ Fully stabilize sources of sediment within the tributary area (i.e., no exposed soil) prior to placing the finished BMP into service.	Sediment loading can seriously impair the capacity of the BMP.
☐ Allow plants and mulch to stabilize for as long as practicable (preferably several months) prior to placing the finished BMP into service.	Stabilization of the system allows plants to mature before stressing the system with stormwater loading.

O&M Activities and Frequencies

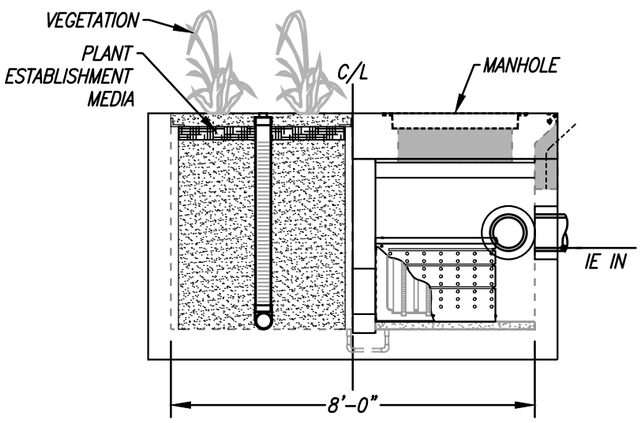
Activity	Frequency
GENERAL INSPECTIONS	
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.
Identify excess erosion or scour	
Identify sediment accumulation that requires maintenance	
Inspect during storm event, when possible, to estimate treatment capacity and determine if premature bypass is occurring	
Evaluate plant health and need for corrective action	
Identify any needed corrective maintenance that will require site-specific planning or design	
OPERATION AND MAINTENANCE	
• O&M of proprietary BMPs must follow established manufacturer guidelines • O&M of accompanying retention BMPs should follow the guidelines established in the associated fact sheet for that BMP.	

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)			2.1 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			_____ (CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY ONLY - NOT FOR CONSTRUCTION



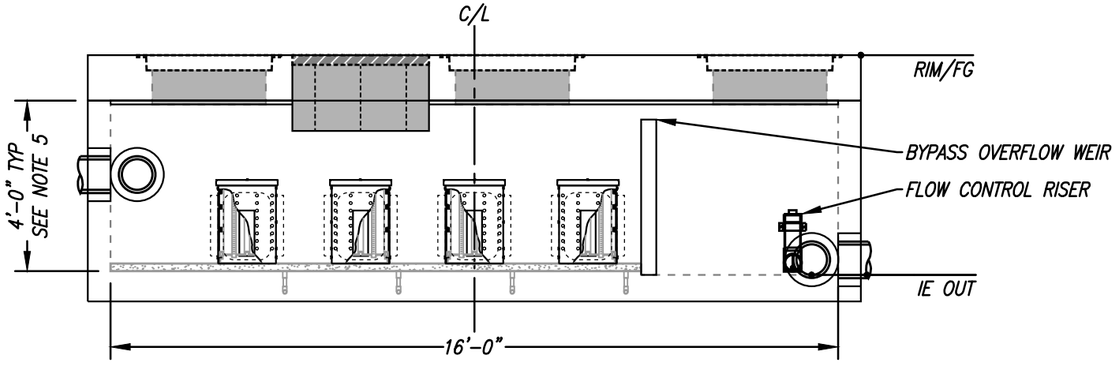
PLAN VIEW



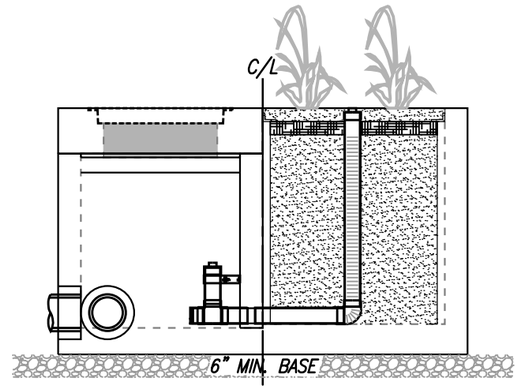
LEFT END VIEW

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
5. VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.



ELEVATION VIEW



RIGHT END VIEW

MODULAR WETLANDS
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

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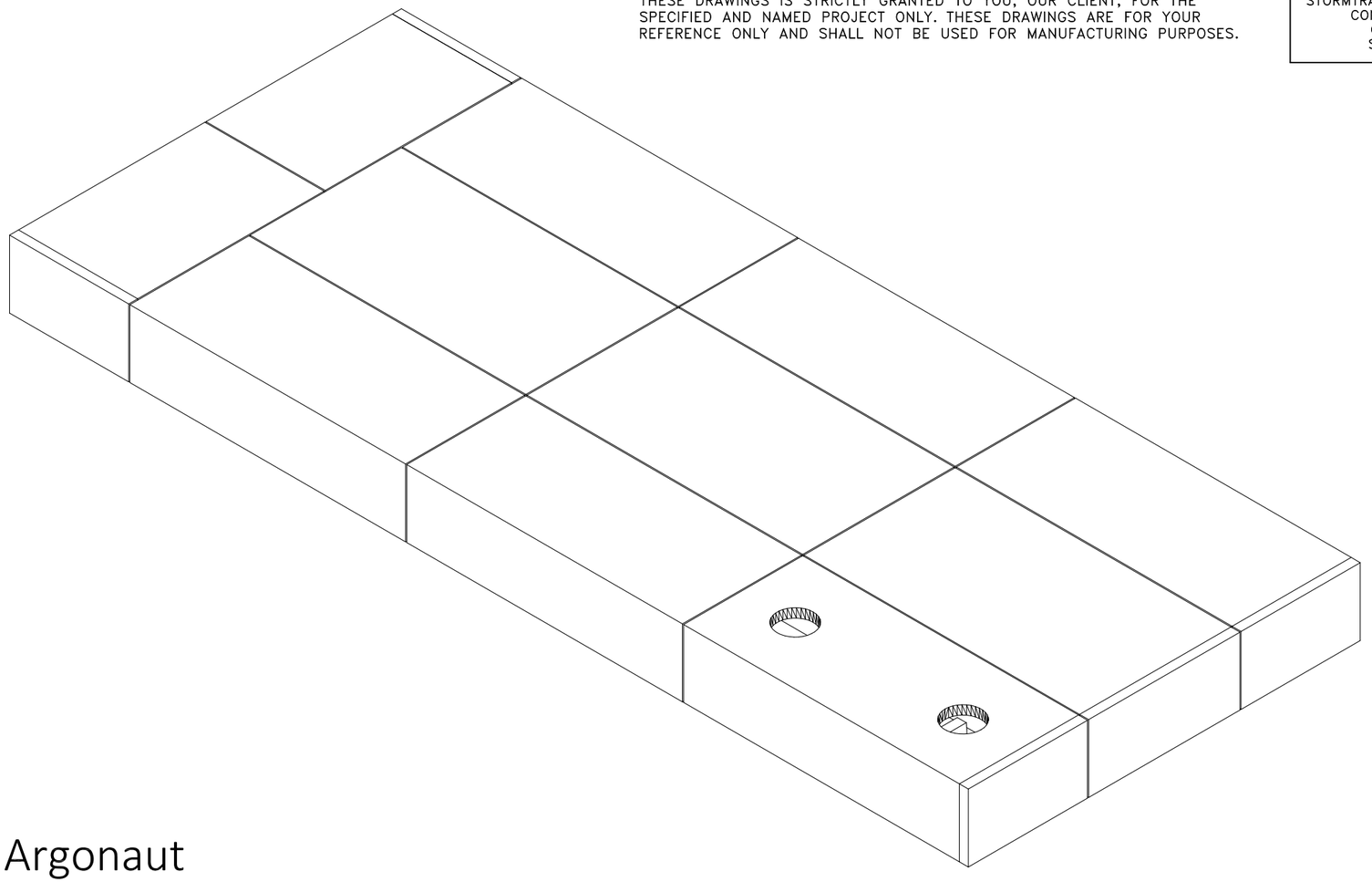
MWS-L-8-16-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

8/14/23SCOTT.SERTICH

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT

THE STORMTRAP DRAWINGS SHALL NOT BE ALTERED OR MANIPULATED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT OF STORMTRAP. USE OF THESE DRAWINGS IS STRICTLY GRANTED TO YOU, OUR CLIENT, FOR THE SPECIFIED AND NAMED PROJECT ONLY. THESE DRAWINGS ARE FOR YOUR REFERENCE ONLY AND SHALL NOT BE USED FOR MANUFACTURING PURPOSES.



Argonaut
Aliso Viejo, CA

SHEET INDEX

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5.0	PIPE/ACCESS OPENING SPECIFICATION
6.0	SINGLETRAP MODULE TYPES
7.0	OUTLET CONTROL STRUCTURE DETAILS

STORMTRAP CONTACT INFORMATION

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CONTACT NAME: Charlie Carter
CELL PHONE: (760) 212-5628
SALES EMAIL: ccarter@stormtrap.com

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SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

GENERAL NOTES:

1. STRUCTURE PROXIMITY LOADING DISCLAIMER:

STORMTRAP MODULES AND FOUNDATION ARE NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADING FROM ANY NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. EXAMPLES OF NEARBY STRUCTURES MAY INCLUDE BUT ARE NOT LIMITED TO BUILDINGS, FOUNDATION ELEMENTS, RETAINING WALLS, LIGHT POLES, BOLLARDS, SIGNPOSTS, FENCES. ADDITIONALLY, STORMTRAP IS NOT RESPONSIBLE FOR INSTALLATION CONFLICTS ARISING FROM ANY OF THESE NEARBY STRUCTURES. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY. FOR LIGHT POLES SHOWN OVER THE TOP OF THE SYSTEM, STORMTRAP WILL PROVIDE A 5'-0" LATERAL DISTANCE CAVITY AROUND THE LIGHT POLE TO ACCOMMODATE IT. THE EOR TO TAKE RESPONSIBILITY FOR ENSURING THE LIGHT POLE IS NOT INFLICTING ANY LOADING ON THE STORMTRAP MODULES AND FOUNDATION.

2. TREE LOADING DISCLAIMER:

THE NUMBER OF TREES OR WEIGHT OF TOTAL PLANT MATERIAL PRESENT ON TOP OF A SINGLE STORMTRAP MODULE SHALL NOT EXCEED 16,000 LBS. THE REQUIREMENTS LISTED HERE APPLY AT BOTH THE TIME OF INSTALLATION AND FOR THE LIFE OF THE TREES AND PLANTS IN QUESTION. THE EOR AND LANDSCAPE ARCHITECT ARE RESPONSIBLE FOR ENSURING THAT TREE AND OTHER PLANT ROOTS DO NOT INTERFERE WITH OR COMPROMISE THE FUNCTIONAL AND STRUCTURAL INTEGRITY OF STORMTRAP'S UNDERGROUND MODULES. APPROPRIATE MEASURES SHOULD BE TAKEN TO PREVENT ROOT GROWTH INTO THE STORMTRAP SYSTEM FROM ADJACENT OR OVERHEAD TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACED AROUND OR ON TOP OF THE SYSTEM.

3. PRE-TREATMENT/SEDIMENT/FILTER CHAMBER DISCLAIMER:

FOR SYSTEMS CONTAINING PRE-TREATMENT, SEDIMENTATION AND/OR FILTER CHAMBERS; IF REQUIRED TO BE SEALED TO PREVENT SAND AND/OR PRE-TREATED WATER FROM MIGRATING INTO ADJOINING MODULES, IT IS THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THOSE MODULES ARE SEALED.

4. OUTLET CONTROL STRUCTURE DISCLAIMER (IF SHOWN ON THESE PLANS):

IF A WATERTIGHT SOLUTION IS REQUIRED FOR AN OUTLET CONTROL STRUCTURE, ALL EXTERIOR COLD JOINTS, INCLUDING JOINT BETWEEN TOP AND BASE MODULES, BETWEEN TOP AND BASE OF ADJOINING SYMONS WALLS, AND JOINTS BETWEEN MODULE AND ADJACENT END PANELS WILL BE THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO PROVIDE AND INSTALL THE WATERTIGHT APPLICATION PER THE EOR'S SPECIFICATION.

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GENERAL NOTES

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1.0

STRUCTURAL DESIGN LOADING CRITERIA

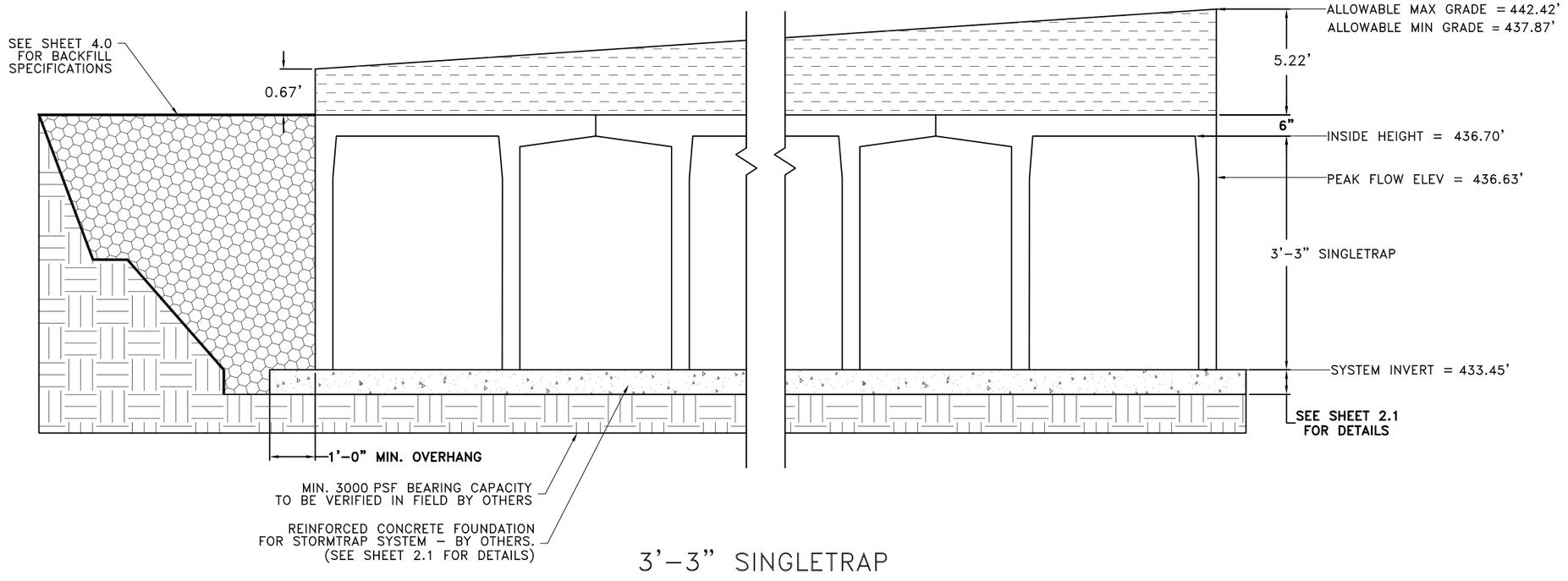
LIVE LOADING:	AASHTO HS-20 HIGHWAY LOADING
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	3000 PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI-318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	3'-3" SINGLETRAP	
TOTAL STORAGE PROV:	3,215.66	CUBIC FEET
STORMTRAP STORAGE PROV @ ELEV. 437.41:	3,146.40	CUBIC FEET

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.67' MAX. 5.22' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN MAY ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.



3'-3" SINGLETRAP

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SINGLETRAP DESIGN CRITERIA

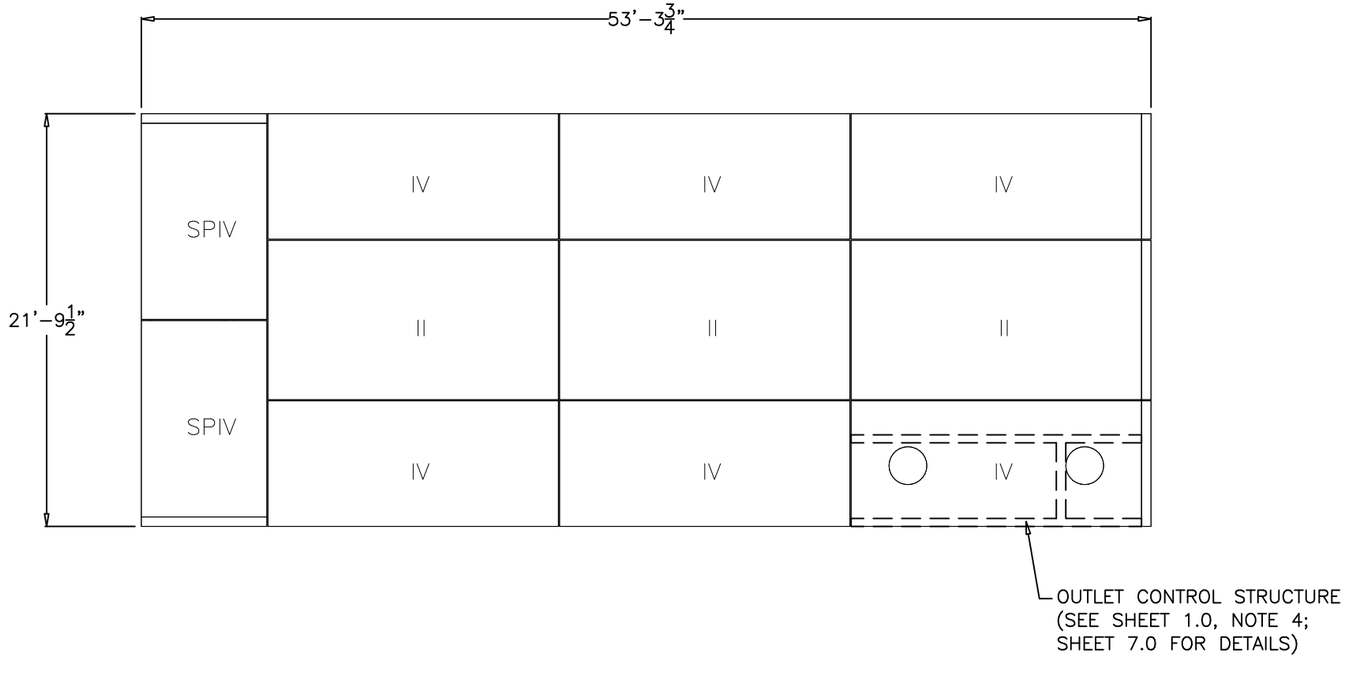
SHEET NUMBER:

1.1

BILL OF MATERIALS			
QTY.	UNIT TYPE	DESCRIPTION	WEIGHT
0	I	3'-3" SINGLETRAP	–
3	II	3'-3" SINGLETRAP	15365
0	III	3'-3" SINGLETRAP	–
6	IV	3'-3" SINGLETRAP	13667
0	VII	3'-3" SINGLETRAP	–
0	VII-1	3'-3" SINGLETRAP	–
0	VII-2	3'-3" SINGLETRAP	–
0	VII-3	3'-3" SINGLETRAP	–
0	VII-4	3'-3" SINGLETRAP	–
0	SPIII	3'-3" SINGLETRAP	VARIES
2	SPIV	3'-3" SINGLETRAP	VARIES
1	T2 PANEL	6" THICK PANEL	2369
4	T4 PANEL	6" THICK PANEL	1863
0	T7 PANEL	6" THICK PANEL	–
3	JOINTWRAP	150' PER ROLL	
16	JOINTTAPE	14.5' PER ROLL	
TOTAL PIECES = 11			
TOTAL PANELS = 5			
HEAVIEST PICK WEIGHT = 15365			

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 442.42'
ALLOWABLE MIN GRADE = 437.87'
INSIDE HEIGHT ELEVATION = 436.70'
SYSTEM INVERT = 433.45'

NOTES:
1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.
7. IN ORDER FOR STORMTRAP TO GENERATE APPROVAL DRAWINGS, CIVIL ENGINEERING DRAWINGS MUST BE PROVIDED TO STORMTRAP AND SHALL INCLUDE ALL PIPE SIZES, PIPE MATERIAL, PIPE INVERT ELEVATIONS, ACCESS OPENING SIZE AND SHAPE. IN ADDITION, FINAL GRADING PLANS SHALL ALSO INCLUDE MINIMUM AND MAXIMUM GRADES OVER THE TOP OF THE STORMTRAP SYSTEM.



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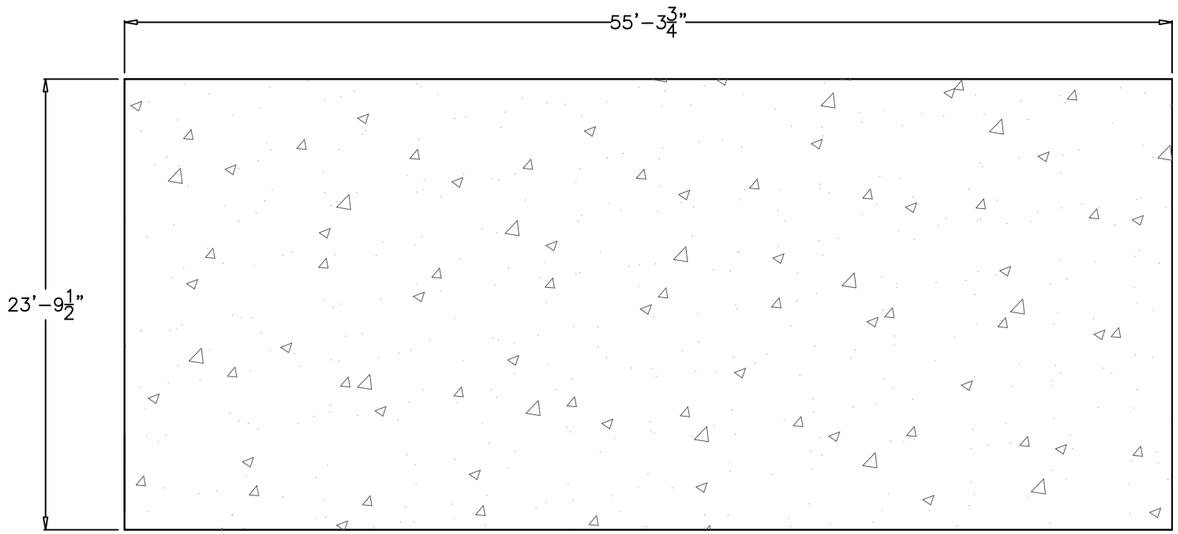
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SHEET TITLE:

SINGLETRAP
SYSTEM LAYOUT

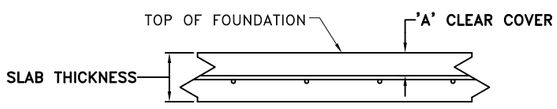
SHEET NUMBER:

2.0



CONCRETE FOUNDATION NOTES:

1. CONCRETE FOUNDATION TO BE SUPPLIED AND INSTALLED BY OTHERS.
2. CONCRETE STRENGTH @ 28 DAYS, 5%–8% ENTRAINED AIR, 3"–5" MAX SLUMP.
3. NET ALLOWABLE SOIL PRESSURE AS INDICATED ON SHEET 1.1.
4. SOIL CONDITIONS TO BE VERIFIED ON SITE BY OTHERS.
5. REBAR: ASTM A615 GRADE 60, BLACK BAR.
6. DIMENSION OF FOUNDATION MUST HAVE 1'–0" OVERHANG BEYOND EXTERNAL FACE OF MODULE.
7. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
8. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
9. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.



STORMTRAP FOUNDATION DETAIL

HS–20 & HS–25 LOADING – (ACI 318, ST2)				
MAXIMUM SYSTEM COVER	SLAB THICKNESS	CONCRETE STRENGTH	REINFORCEMENT (BOTH DIRECTIONS)	'A' CLEAR COVER
0'–6" – 1'–0"	8"	4000 PSI	#4 @ 18" O.C.	3.5"
1'–1" – 2'–0"	8"	4000 PSI	#4 @ 16" O.C.	3.5"
2'–1" – 3'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
3'–1" – 4'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
4'–1" – 5'–0"	8"	4000 PSI	#5 @ 18" O.C.	3.375"
5'–1" – 6'–0"	8"	4000 PSI	#5 @ 16" O.C.	3.375"
6'–1" – 7'–0"	8"	4000 PSI	#5 @ 12" O.C.	3.375"
7'–1" – 8'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
8'–1" – 9'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
9'–1" – 10'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"

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SINGLETRAP FOUNDATION LAYOUT

SHEET NUMBER:

2.1

STORMTRAP INSTALLATION SPECIFICATION

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891 (STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES). THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS ARE PROVIDED FOR EMPHASIS. THE MENTION OF THESE ITEMS DOES NOT PRECLUDE THE INSTALLING CONTRACTOR FROM FOLLOWING ASTM C891 IN ITS ENTIRETY AND IMPLEMENTING ALL APPROPRIATE MEASURES. THE INSTALLING CONTRACTOR OWNS AND IS RESPONSIBLE FOR THE STORMTRAP SYSTEM UPON REMOVAL OF THE MODULES FROM THE DELIVERY TRUCK THROUGH 'FINAL CONSTRUCTION'. FINAL CONSTRUCTION IS ACHIEVED WHEN ALL MODULES ARE SET, FULLY BACKFILLED, AND WHEN FINAL FINISHED GRADES ARE REACHED. THE CONTRACTOR IS RESPONSIBLE FOR ANY COUNTERMEASURES NECESSARY TO RESIST UPLIFT/BUOYANCY BEFORE 'FINAL CONSTRUCTION' IS ACHIEVED.

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES SHALL BE PLACED ON A LEVEL CONCRETE FOUNDATION (SEE SHEET 2.1) WITH A 1'–0" OVERHANG ON ALL SIDES THAT SHALL BE POURED IN PLACE BY INSTALLING CONTRACTOR. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS TO ENSURE THAT THE SOIL BEARING PRESSURE MEETS OR EXCEEDS THE STRUCTURAL DESIGN LOADING CRITERIA AS SPECIFIED ON SHEET 1.1.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. THE PERIMETER HORIZONTAL JOINT BETWEEN THE STORMTRAP MODULES AND THE CONCRETE FOUNDATION SHALL BE SEALED TO THE FOUNDATION WITH PRE–FORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891, 8.8 AND 8.12 (SEE DETAIL 1). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE–FORMED, COLD–APPLIED, SELF–ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 3, & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

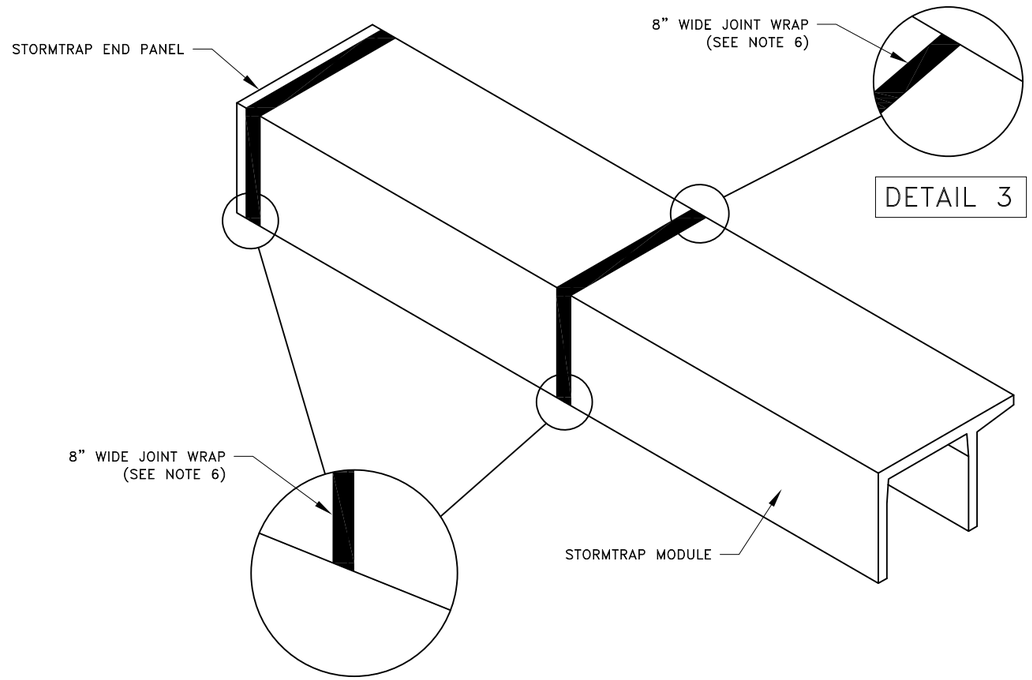
   6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

   6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

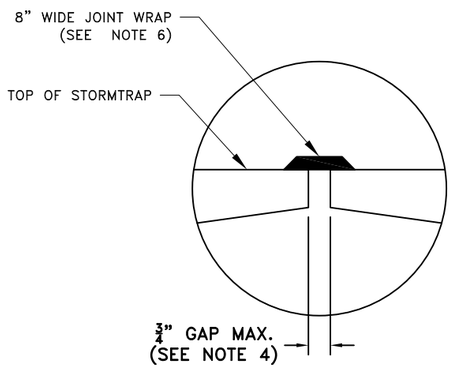
7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

8. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

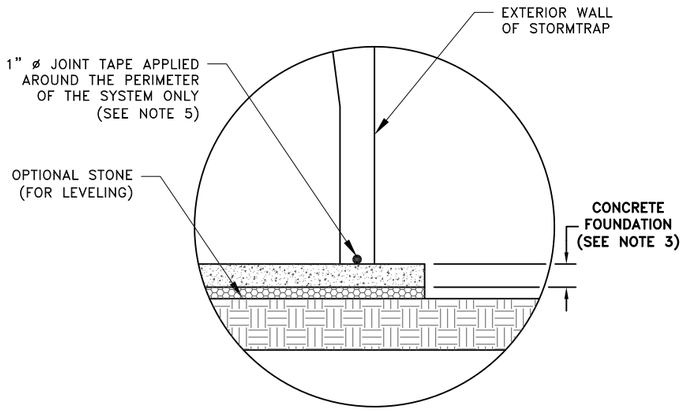
9. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.



DETAIL 4



DETAIL 2



DETAIL 1

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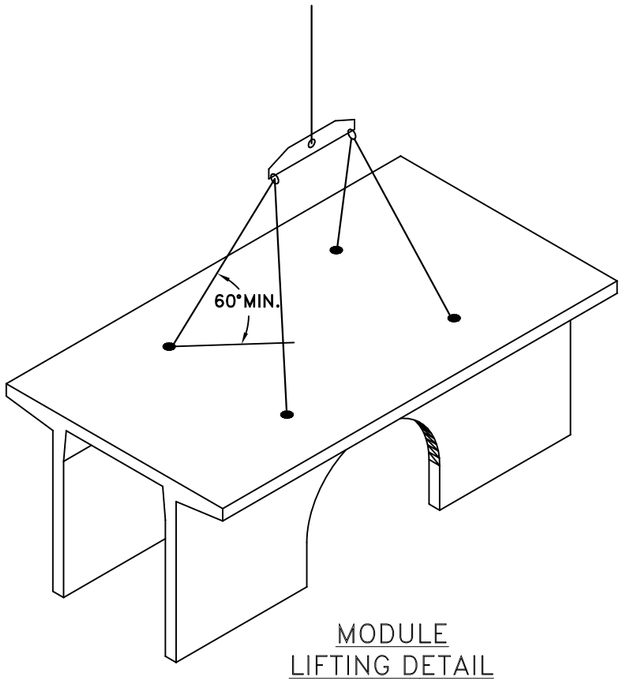
SINGLETRAP
INSTALLATION
SPECIFICATION

SHEET NUMBER:

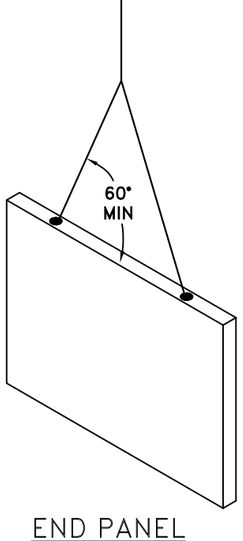
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STORMTRAP MODULE LIFTING SPECIFICATION

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE.
2. MINIMUM 7'–0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



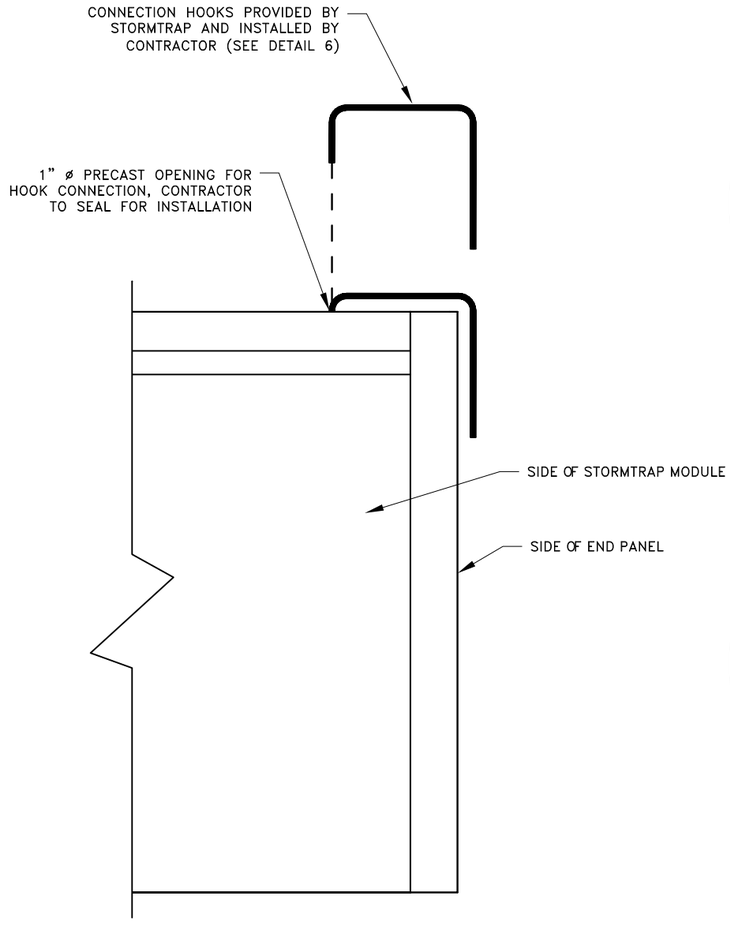
MODULE
LIFTING DETAIL



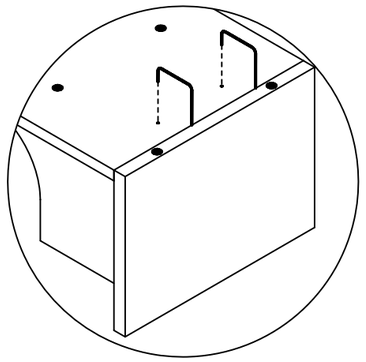
END PANEL
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION SPECIFICATION

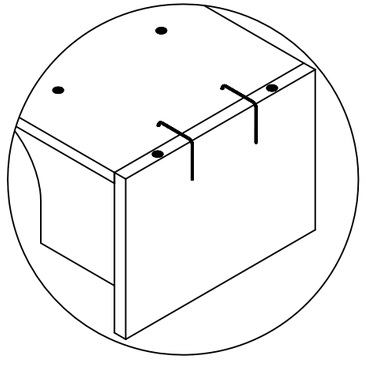
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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SCALE:

NTS

SHEET TITLE:

SINGLETRAP
INSTALLATION
SPECIFICATION

SHEET NUMBER:

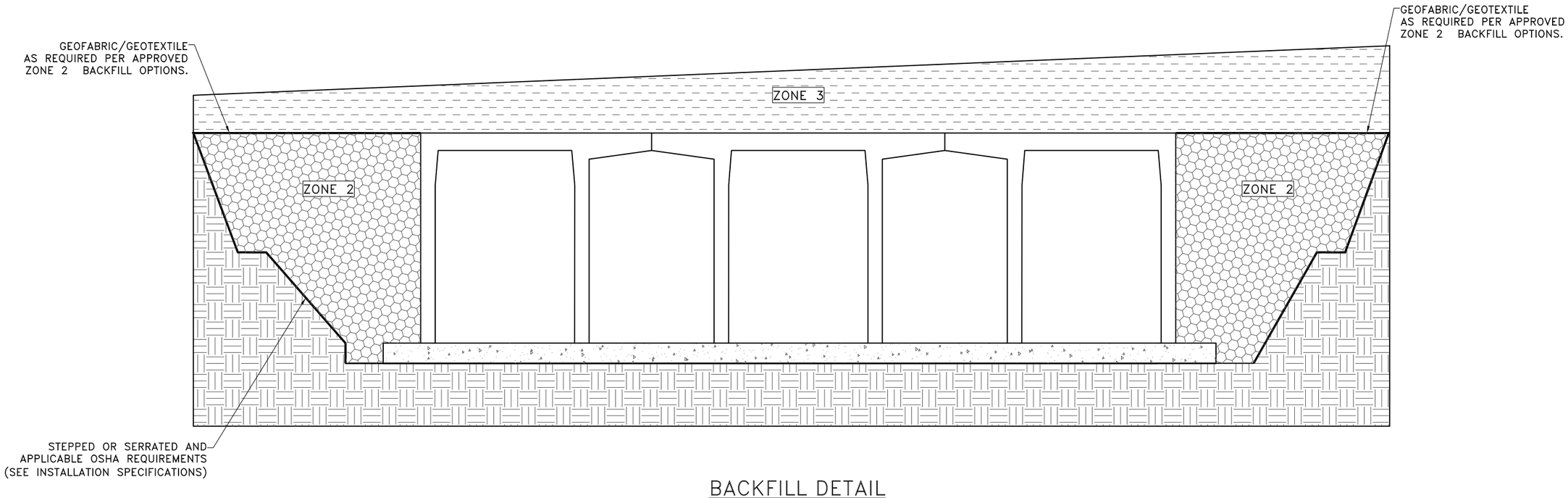
3.1

ZONE CHART		
ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

APPROVED ZONE 2 BACKFILL OPTIONS	
OPTION	REMARKS
¾" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1–1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

STORMTRAP ZONE INSTALLATION SPECIFICATION/PROCEDURE

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'–0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE–DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS). ALL MODULES MUST BE SET AND ALL SIDES MUST BE FULLY BACKFILLED BEFORE TRAVEL OVERTOP THE SYSTEM IS PERMITTED. SEE NOTE 2 FOR EXCEPTIONS AND LIMITATIONS.
2. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED IN MINIMUM 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN LIVE LOAD LISTED ON SHEET 1.0 TRAVEL OVERTOP THE SYSTEM. IF TRAVEL OVER THE SYSTEM OCCURS BEFORE THE MINIMUM DESIGN COVER IS ACHIEVED, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. VEHICLES AND MACHINERY USED TO PLACE FILL MATERIAL ON TOP OF THE SYSTEM SHALL TRAVEL PARALLEL TO THE LONGITUDINAL AXIS OF THE STORMTRAP MODULES WHENEVER POSSIBLE.
3. THE VIBRATORY FUNCTION OF ANY ROLLER, COMPACTOR, VEHICLE, ETC. SHALL NOT BE USED OVERTOP THE SYSTEM WITHOUT PRIOR APPROVAL FROM STORMTRAP. IN SOME CASES, HAND COMPACTION MAY BE NECESSARY TO ENSURE THAT THE ALLOWABLE DESIGN LOADING IS NOT EXCEEDED.



BACKFILL DETAIL

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SHEET TITLE:

SINGLETRAP BACKFILL SPECIFICATION

SHEET NUMBER:

4.0

ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'–0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 4'–0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 2'–0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED. SEE SHEET 2.0 FOR SIZES AND LOCATIONS.

2. UNLESS OTHERWISE SPECIFIED, PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'–0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.

3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.

4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.

5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.

6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

PIPE OPENING SPECIFICATION

1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".

2. CONNECTING PIPES MAY BE INSTALLED WITH A 1'–0" CONCRETE COLLAR AND AN AGGREGATE CRADLE (AS REQUIRED) FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI MAY BE USED.

3. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

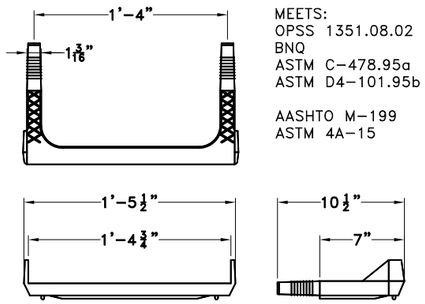
PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.

2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.

3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET INCLUDING BUT NOT LIMITED TO CONCRETE COLLARS, AGGREGATE CRADLES, GRADE RINGS, RISER SECTIONS, ETC., ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.



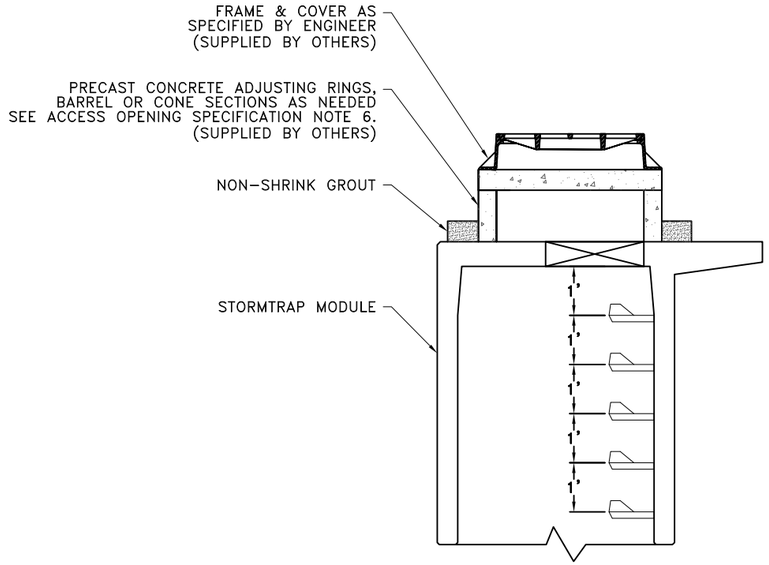
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ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

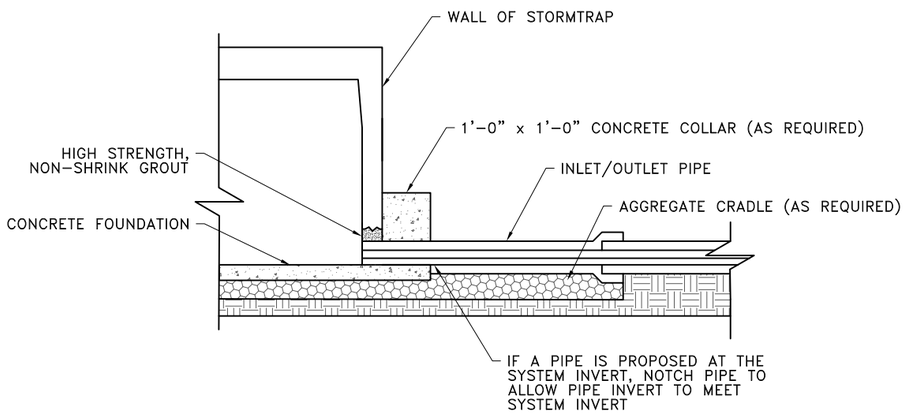
STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 16" STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 16" STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.



RISER/STAIR DETAIL



NOTCHED PIPE CONNECTION DETAIL WHEN PIPE INVERT IS AT INVERT OF STORMTRAP SYSTEM

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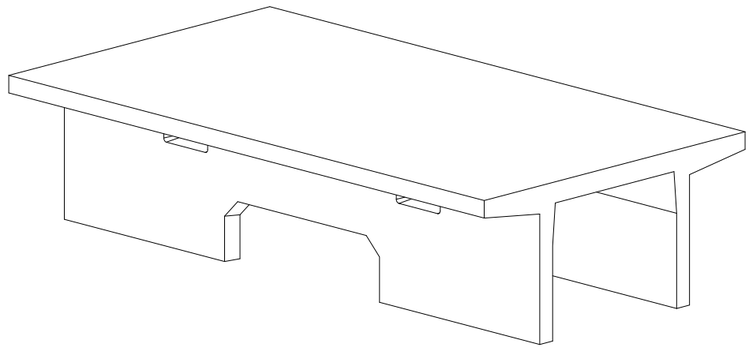
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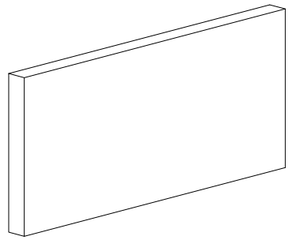
PIPE / ACCESS OPENING SPECIFICATION

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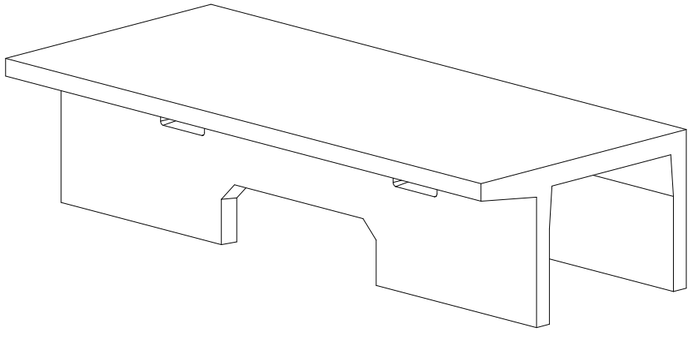
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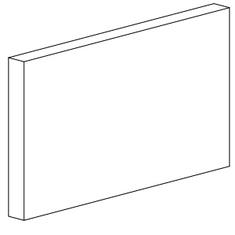
TYPE II



TYPE II END PANEL



TYPE IV



TYPE IV END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

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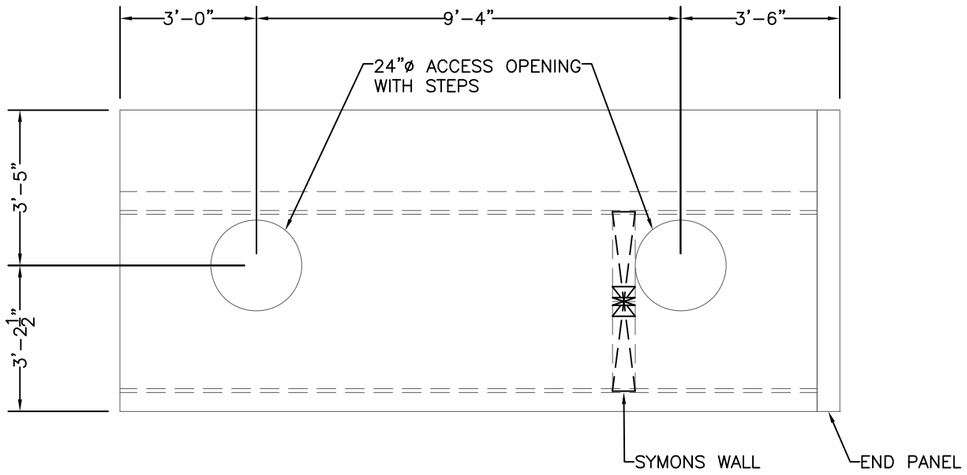
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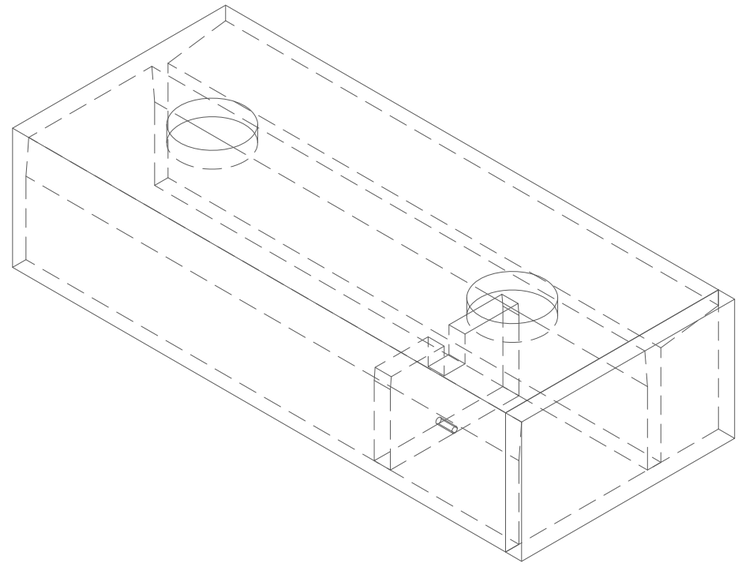
SINGLETRAP
MODULE TYPES

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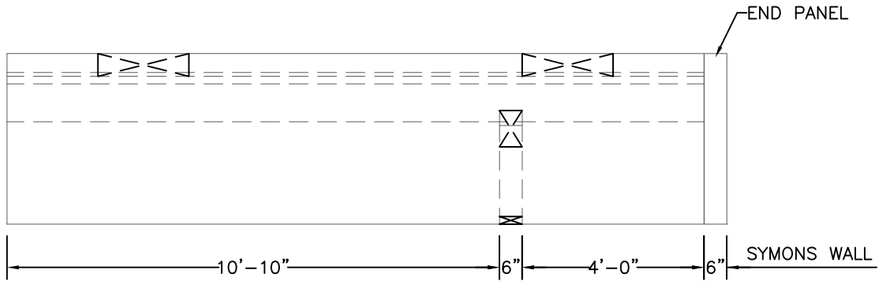
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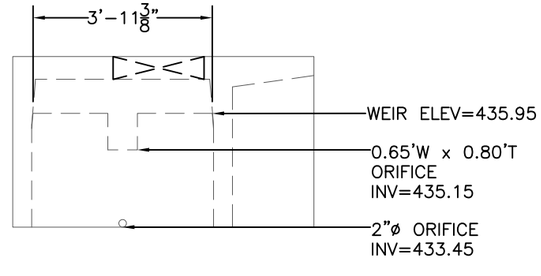
PLAN VIEW



ISOMETRIC VIEW



ELEVATION VIEW



SIDE VIEW

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SHEET TITLE:

OUTLET CONTROL STRUCTURE DETAIL

SHEET NUMBER:

7.0

Attachment E: Geotechnical Report

- Attachment E1: SA Geotechnical Report

SA GEOTECHNICAL
OPTIMIZED SOIL ENGINEERING

May 31, 2024

Project No. 24059-01

To: Meritage Homes
5 Peters Canyon Road, Suite 310
Irvine, California 92606

Attention: Ms. Emma Hill

Subject: Geotechnical Subsurface Exploration, Due Diligence Study, and Preliminary Geotechnical Recommendations, Proposed Residential Development, 95 Argonaut, City of Aliso Viejo, California

At your request, SA Geotechnical, Inc. (SA GEO) has conducted subsurface exploration and geotechnical due diligence study for the proposed residential development located at 95 Argonaut in the City of Aliso Viejo, California (Figure 1). The purpose of this study was to evaluate the geotechnical site conditions in light of the proposed grading and improvements in order to provide a geotechnical summary of conditions and preliminary geotechnical recommendations for project design, grading, and construction. Our evaluation included review of collected geologic and geotechnical engineering reports and maps pertinent to the subject site; a site-specific subsurface exploration; laboratory testing; geotechnical analysis; and preparation of this report.

The subject site is currently developed with a 2-story office building, retaining wall along the westerly property line, at-grade asphalt concrete paved parking lot and associated drive aisles, and hardscape/landscape improvements, all of which will be demolished as part of the proposed project. An approximately 20-foot-high descending slope is present along the easterly property boundary. Based on our review and field exploration, the primary geotechnical constraints include the presence of highly expansive silty/clayey soil that is diatomaceous and seismic shaking during a strong seismic event. The subsurface artificial fill soils at the site are primarily highly plastic silt/clay with minor interlayered clayey/silty sands. The artificial fill soils are generally diatomaceous and derived from Monterey Formation bedrock. Bedrock of the Monterey and Niguel Formations underlie the site at depth. Groundwater was encountered in one boring (H-4) during drilling, at a depth of 55 feet below ground surface. Onsite stormwater infiltration is not feasible considering that the site is underlain by relatively thick artificial fill, which are predominantly silty/clayey, overlying bedrock.

This report presents our findings, conclusions, and preliminary design recommendations for the subject residential development. Based on our review, the proposed grading and development is considered geotechnically feasible provided the recommendations in this report are implemented during design, grading, and construction. Additional evaluation and analysis may need to be performed once the project plans for grading and foundations are developed.

References pertinent to the site are included in Appendix A. Boring and laboratory test data are included in Appendix B and C, respectively. Seismic design parameters are presented in Appendix D. Slope stability analysis is presented in Appendix E. General earthwork and grading specifications are presented in Appendix F.

If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,

SA GEOTECHNICAL, INC.

Anthony Zepeda, CEG 2681
Project Geologist

Reza Saberi, GE 3071
Principal Engineer

Peter Anderson, CEG 2596
Principal Engineering Geologist







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Appendices

Appendix A – References
Appendix B – Boring Logs
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Plates

Plate 1 – Geotechnical Map – Rear of Appendices
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EXECUTIVE SUMMARY

The subject site is underlain by relatively thick artificial fill material as a result of mass grading and development that occurred in the 1980s. Approximately 25 to 75 feet of fill was encountered in all borings which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard/medium dense to dense. The fine-grained fill materials are derived from the Monterey Formation and were found to be diatomaceous. Bedrock of the Monterey and Niguel Formations were encountered during drilling, underlying the artificial fill at depth.

The primary geotechnical constraints at the site include the following:

- Presence of highly expansive silty/clayey soils that are diatomaceous; and
- The potential for seismic shaking during an earthquake event.

Remedial grading for the site should consist of the removal and re-compaction of all weathered/disturbed fill materials. Remedial removals are anticipated to be on the order of 3 to 4 feet below existing grades within the proposed building pads. Remedial grading within the proposed drive areas may be limited to removal and re-compaction of the soils in the upper 1 to 2 feet. Deeper removals may be required where existing trees, utility lines, structures, and foundations are to be abandoned/removed. Considering that the onsite soils predominately consist of silty/clayey soils that are diatomaceous, achieving adequate compaction at acceptable moisture contents during fill placement may require additional mixing and compaction effort.

Groundwater was encountered in one boring (H-4) during our exploration, at a depth of 55 feet bgs (within Niguel Formation). Historic high groundwater is mapped 20 feet below original grades; however, this does not account for the mass grading and fill placement that occurred onsite. In general, we anticipate groundwater to remain at least 20 feet below existing grades upon the completion of grading. However, seepage/groundwater may be present at shallower depth locally and can fluctuate on an annual and seasonal basis.

Considering the relatively minor grading anticipated to achieve design grades, the laboratory test data, building foundations and slabs should be designed to tolerate a total settlement of 2 inches and a differential settlement of 1-inch over a span of 40 feet. Onsite soils are anticipated to have "High" expansion potential at the completion of grading and are considered corrosive to concrete ("S2").

Based on our findings, we conclude that the proposed residential development is feasible from a geotechnical viewpoint, provided it is designed and constructed in accordance with the recommendations presented in this report and the future design/plan review report(s). The site is not considered suitable for infiltration of storm water.

1.0 INTRODUCTION

1.1 Introduction and Scope of Services

At your request, SA Geotechnical, Inc. (SA GEO) has conducted subsurface exploration and geotechnical due diligence study for the proposed residential development located at 95 Argonaut in the City of Aliso Viejo, California (Figure 1). The purpose of our study was to assess the onsite geologic and geotechnical conditions and provide preliminary recommendations for design, grading, and construction of the proposed residential development. A Topographic Survey by X Engineering & Consulting, received on May 15, 2024, has been utilized as the base for our Geotechnical Map (Plate 1).

Our scope of services for this due diligence study included the following tasks:

- Review of available published geologic and geotechnical maps, reports, and data for the subject site and surrounding area, including an archive search of City of Aliso Viejo records. A list of references is included in Appendix A.
- Historic aerial photograph review, dating back to 1931.
- Notification and coordination with DigAlert to identify and clear boring locations of underground utilities.
- Subsurface exploration consisting of excavation, sampling and logging of four hollow-stem auger borings (H-1 through H-4) to depths ranging from 41.5 to 81.5 feet below ground surface (bgs). Boring logs are included in Appendix B.
- Laboratory testing of selected samples to determine engineering properties of onsite soils, including in-situ moisture and density, grain size distribution, Atterberg limits, maximum density and optimum moisture content, consolidation/collapse, shear strength, expansion potential, and soluble sulfate content. Laboratory test results are included in Appendix C.
- Geotechnical evaluation and analysis of the compiled data regarding the proposed grading and development.
- Evaluation of faulting, seismicity, and seismic and static settlement in accordance with the 2022 California Building Code (CBC).
- Preparation of this report including our findings, conclusions, preliminary recommendations, and accompanying illustrations.

SA GEO's expertise and scope of services do not include assessment of potential subsurface environmental contaminants or environmental health hazards.

1.2 Site Condition and History

The subject site is located at 95 Argonaut, Aliso Viejo, California (see Figure 1), and is legally described as Parcel 1 of Parcel Map No. 85-158, Assessor's Parcel Number (APN) 141-521-48. The approximately 2.85-acre site is bound by Glenwood Lane to the north, Argonaut Street to the west and south, a Moulton Niguel Water District reservoir/tank to the east, and other commercial properties to the southeast. The site is currently developed with an approximately 24,879 square-foot two-story commercial building with at-grade asphalt-paved parking lot, drive aisles, and

associated landscaping/hardscaping. The site is primarily flat, with elevations ranging from 440 to 448 feet above mean sea level. A retaining wall is present along the western property line, approximately 3 to 6 feet in height, with an ascending 3- to 4-foot-high 2H:1V slope above. There is an approximately 20-foot-high descending 2H:1V slope along the easterly property line extending offsite to the adjacent water reservoir/tank.

Based on our review of available historic aerial photographs dating back to 1931, the earliest land use at the subject site and surrounding areas were for agricultural purposes (ranching). Development of the surrounding area for commercial use began in the early 1980s, although the subject site remained an undeveloped natural drainage/swale. The site was mass graded between 1985 and 1987, concurrent with the construction of the water tank to the east. This mass grading appears to have occurred concurrent with the adjacent geotechnically-observed mass grading (Jack G. Raub Company, 1987), although no documents pertaining to the grading of the subject site were recovered during our archive search of City/County records. The geotechnical maps/report associated with the adjacent graded commercial lots overlap with the western portion of the subject site and detail a historical (pre-grading) topography ranging from 390 to 412 feet above sea level (Jack G. Raub Company, 1987); however, topography for the eastern and southern portion of the subject site were not included. This suggests a minimum of 30 to 60 feet of design fill associated with mass grading, although this does not account for any remedial grading/removal of alluvium during grading. The streets in the industrial complex were constructed by 1988, along with some of the other commercial buildings in the area. The existing two-story commercial building at the subject site was constructed by 1990. No significant changes were observed on the subject site since initial development and construction of the existing commercial building.

1.3 Proposed Grading and Improvements

Prior to any site development or grading, the existing structures, pavements, utilities, and hardscape will be demolished. Considering the site is relatively flat, we anticipate design grading to consist of cuts and fills on the order of 1 to 3 feet to reach pad grades and provide proper site drainage. Locally, deeper cuts/fills may be required were retaining structures are proposed.

The proposed project is anticipated to include grading/construction for residential development. Based on our review of the Site Plan provided by you, dated March 2024, we understand that the proposed project will consist of 8 multifamily buildings totaling 62 residential units. We anticipate the proposed structures will be 3- to 4-story and consist of wood-framed construction. The development will also include infrastructure improvements, parking/drive aisles, stormwater filtration devices and landscape/hardscape improvements.

1.4 Subsurface Exploration

Our field exploration was performed on April 22, 2024, and included excavation of four hollow stem auger borings (H-1 through H-4) to depths ranging from 41.5 to 81.5 feet bgs.

The borings were geologically logged, and samples were obtained at selected intervals. After completion of drilling, the excavations were backfilled with soil cuttings and tamped. Pavement at the boring locations was repaired with cold patch asphalt. The approximate boring locations are shown on Plate 1 (Geotechnical Map). Boring logs are included in Appendix B.

Soil sampling was performed using a Modified California ring sampler. Relatively undisturbed ring samples were obtained from the borings at various depths with a 2.5-inch inside-diameter, split-barrel sampler. The sampler was driven with a 140-pound, automatic trip hammer, free falling 30 inches. The sampling was used to assess the soil beneath the site as well as to obtain a measure of resistance of the soil to penetration (recorded as blows-per-foot on the geotechnical boring logs). Representative bulk samples of onsite soils were also collected from soil cuttings and used for additional soil identification purposes and laboratory testing.

1.5 Laboratory Testing

Representative samples of onsite soils collected during our field exploration were tested to characterize the engineering properties. Laboratory tests performed on selected relatively undisturbed and bulk soil samples included:

- Moisture content and dry density;
- Grain size analysis;
- Atterberg limits;
- Direct shear;
- Consolidation;
- Maximum density and optimum moisture content;
- Expansion potential; and
- Soluble sulfate.

Laboratory tests were conducted in general conformance with applicable ASTM International standards. The laboratory test results are provided in Appendix C.

2.0 GEOTECHNICAL FINDINGS

2.1 Geologic Setting and Earth Units

The subject site is located in the eastern foothills of the San Joaquin Hills, within the Peninsular Ranges geomorphic province of Southern California. The site is mapped by the U.S. Geological Survey (USGS, 2006) as underlain by sedimentary bedrock of the Monterey and Niguel Formations that is successively overlain by unconsolidated alluvium. Based on our subsurface exploration and understanding of the site history, the subject site was mass graded in the 1980's resulting in thick artificial fill materials placed over bedrock. No alluvium was encountered in any of our borings and is assumed to have been removed during mass grading. The earth unit distribution and our interpretation of the subsurface conditions are shown on the Geotechnical Map (Plate 1) and Geotechnical Cross-Sections A-A' and B-B' (Plates 2 and 3).

Our subsurface exploration encountered compacted **Artificial Fill (Af)** underlying the site as a result of original mass grading. Approximately 25 to 75 feet of artificial fill was encountered in all borings which generally consisted of olive gray, olive brown, bluish gray, brown, and black clayey silt, clay, silty/sandy clay, clayey sand, and silty sand that was moist to wet and medium stiff to hard. The fine-grained fill materials appear to be derived from the Monterey Formation and were found to be diatomaceous.

We encountered sedimentary bedrock of the **Monterey Formation (Tm)** and **Niguel Formation (Tn)** underlying the fill materials in all borings. Based on our review of the regional geologic mapping, the earth units are in fault contact below the site (see Figure 2). The fault is inactive/pre-Quaternary. The **Monterey Formation** bedrock generally consisted of olive gray, olive brown, brown, pale yellow, and white siltstone that was very moist to wet, very stiff to hard, and highly diatomaceous. Bedding was observed to be massive to well bedded with thin to laminated bedding.

The **Niguel Formation** was encountered in one boring (H-4) and the bedrock generally consisted of yellowish brown to yellowish gray sandstone that was saturated and very dense. The sandstone was observed to be massive, weakly indurated, and slightly friable.

2.2 Geotechnical Conditions

Based on our geotechnical exploration and laboratory testing, the site geotechnical conditions are generally as follows:

Soil Moisture Content and Dry Density: Onsite artificial fill materials had in-situ moisture contents and dry densities ranging from 10.9 to 84.2 percent and 50.6 to 117.9 pounds per cubic foot (pcf), respectively. Bedrock of the Monterey Formation had in-situ moisture contents ranging from 26.7 to 86.7 percent and dry densities ranging from 51.1 to 96.9 pcf. Please note that the high moisture contents and low densities in the artificial fill and Monterey Formation are typical of diatomaceous materials. Niguel Formation bedrock had in-situ moisture contents ranging from 15.4 to 23.8 percent and dry densities ranging from 96.6 to 115.2 pcf.

Blow counts (blows-per-foot of penetration) in the artificial fill generally ranged from 11 to 66 blows per foot. Blow counts in bedrock ranged from 22 blows per foot to 50 blows for 3.5 inches.

Soil Properties: Grain-size distribution tests were conducted on three bulk samples collected from the uppermost 5 feet. The samples were classified in accordance with the Unified Soil Classification System (USCS) as highly plastic silt (MH) with fines contents (passing No. 200 sieve) ranging from 64 to 73 percent.

Soil plasticity testing was performed on three bulk samples collected from the uppermost 5 feet. The samples were classified as highly plastic silt (MH) with Plasticity Indices ranging from 31 to 37 and Liquid Limits ranging from 70 to 83 percent.

Maximum dry density testing of one near surface sample (collected from the uppermost 5 feet) indicates that the silty soil (MH) has a maximum dry density of 94.1 pcf at optimum moisture content of 20.5 percent.

Shear Strength: Two direct shear tests (relatively undisturbed samples) were performed on samples collected at depths of 2.5 and 5 feet, representative of existing fill materials. The undisturbed direct shear test results indicate that the samples had ultimate internal friction angles of 24 and 26 degrees at cohesions of 400 and 450 pounds per square foot (psf), respectively. The peak internal friction angles were 28 and 29 degrees with cohesions of 450 and 775 psf, respectively.

Consolidation: Tests were performed on four samples collected at depths ranging from 2.5 to 15 feet, representative of existing fil materials. The testing showed that the diatomaceous fill materials are moderately compressible. However, the pre-consolidation pressures are relatively high (higher than 5 ksf). The samples generally had negligible collapse and swell upon the addition of water at a load of 3.2 ksf.

Expansion Potential: Expansion index testing was performed on two samples collected in the upper 5 feet. The results indicate a "High" expansion potential (EI = 91 and 104).

Soluble Sulfate: Soluble sulfate testing was performed on two bulk samples collected from the uppermost 5 feet. The results indicate negligible soluble sulfate content; however, per our experience with the Monterey Formation and review of the laboratory testing from the adjacent development (Jack G. Raub Company, 1987), we anticipate the soluble sulfate content of the onsite soils to be classified as "S2" per Table 19.3.1.1 of ACI-318-14.

2.3 Groundwater

Groundwater was encountered during our subsurface exploration in one boring (H-4) at a depth of 55 feet below ground surface (bgs) within the Niguel Formation. Groundwater was not encountered in boring drilled within the Monterey Formation to a depth of 81.5 feet bgs. The presence of the fault contact between Monterey and Niguel formations may act as a barrier for groundwater migration.

Historic high groundwater mapping indicates high groundwater is greater than 20 feet bgs (CDMG, 2001a). Please note that this is below original grades prior to mass grading and significantly raising grade across the site. Groundwater is anticipated to fluctuate both seasonally and annually, but it is expected to remain deep below the site.

2.4 Regional Faulting and Seismicity

Regional Faults: The site is not located within a fault-rupture hazard zone as defined by the Alquist-Priolo Special Studies Zones Act (CGS, 2018). Also, based on mapping by the State (Jennings and Bryant, 2010), there are no active faults mapped at the site. As discussed previously, the Monterey and Niguel Formations are in fault contact deep below the site; however, the fault is considered inactive (Pre-Quaternary). Regional Faults are presented on Figure 3.

Seismicity: Properties in southern California are subject to seismic hazards of varying degrees depending upon the proximity, degree of activity, and capability of nearby faults. These hazards can be primary (i.e., directly related to the energy release of an earthquake) or secondary (i.e., related to the effect of earthquake energy on the physical world). Since there are no active faults at the site, the potential for primary ground rupture is considered very low. The primary seismic hazard for this site is ground shaking during a future earthquake.

Using the USGS deaggregation computer program (USGS, 2024) and the site coordinates of 33.5946 north latitude and –117.7243 west longitude, the closest major active faults include the Newport-Inglewood and San Joaquin Hills Faults. The maximum moment magnitude for the controlling fault is 7.1 M_W, which would be generated from the San Joaquin Hills Fault; however, numerous other regionally active faults could also produce ground shaking at the site during an earthquake.

The site is not located within a mapped potential liquefaction hazard zone, as defined by the State's Seismic Hazard Mapping (CDMG, 2001b). Other secondary seismic hazards, such as tsunami and seiche are considered nil due to site elevation and distance from the ocean or other confined body of water (CGS, 2021).

2.5 Slope Stability

The site geologic/geotechnical conditions are generally favorable for overall stability of the existing slope along the eastern perimeter. The existing fill slope is approximately 20 feet in total height at an inclination of 2H:1V (horizontal:vertical). We prepared cross-section B-B' (Plate 3) depicting the existing descending slope at the site. Slope stability analysis was performed for a 2H:1V slope with a maximum height of 25 feet, using artificial fill soil strength parameters that were developed during this study and based on the direct shear test results. For our analysis, we used an internal friction angle of 24 degrees and a cohesion of 400 psf. For pseudo-static analysis, we applied a seismic horizontal coefficient (k_h) of 0.29 in accordance with Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California (CGS, 2008).

The results of the slope stability analysis are presented in Appendix E. The existing fill slope at the site was found to be grossly stable with a factor of safety of well over 1.5 under static conditions and a factor of safety of over 1.1 for pseudo-static conditions.

2.6 Settlement and Foundation Considerations

In general, the anticipated settlements depend upon the building loads, type of foundations, and the geotechnical properties of the supporting subgrade. Considering the subsurface soil conditions and laboratory test data, and relatively lightly loaded residential structures, we estimate the total static settlement to be on the order of 2 inches and the differential static settlement to be on the order of 1-inch over a 40-foot span. This assumes remedial grading measures recommended in Section 3.2 of this report are implemented during site grading.

2.7 Stormwater Infiltration Feasibility

The site is underlain by thick (25 to 75 feet) silty/clayey artificial fill materials overlying bedrock. In accordance with County of Orange WQMP guidelines, stormwater infiltration should not be performed in compacted artificial fill and bedrock (OCPW, 2013). Furthermore, the fine-grained soils will not be conducive to infiltration. Also, considering the presence of slopes along the property boundaries and deep canyon fill, infiltration of stormwater can result in seepage or springs in locations where previously none existed, potentially impacting offsite properties and slopes. Stormwater infiltration is not considered feasible from a geotechnical viewpoint.

2.8 Shrinkage and Bulking

The shrinkage and bulking (reduction or increase in volume of excavated materials on recompaction as fill) varies by soil type and location. The volume change primarily depends on in-situ density and the maximum dry density of the soil type. Considering the site is underlain by compacted fill materials, we anticipated that shrinkage of site soils will be relatively low and less than 5 percent. Ground subsidence at the site is estimated to be on the order of 0.1 foot. These values exclude losses due to removal of pavement, vegetation and debris and are dependent on the accuracy of the site topographic survey and type of equipment and compaction method used by the contractor.

2.9 Existing Utilities and Pavement Section

Existing onsite utilities consisting of sewer, water, and gas/electric lines are present onsite supporting the existing office building and associated improvements. We anticipate that the existing utilities will be demolished as part of the proposed improvements and that new utilities and service connections will be established.

The existing pavement section was measured in Borings H-1 through H-4 excavated during this study. The pavement section consisted of 4 inches of asphalt concrete (AC) over 6 to 8 inches of aggregate base (AB).

3.0 CONCLUSION AND PRELIMINARY RECOMMENDATIONS

3.1 General Conclusion and Recommendation

Based on our review, construction of the proposed residential development, as described herein, is considered geotechnically feasible provided the preliminary recommendations in this report are implemented during design, grading, and construction. Grading, foundation, structural and wall plans for the project should be reviewed by the geotechnical consultant during the design phase. Updated recommendations should be provided once the project plans are finalized and as needed.

The recommendations in this report should be considered minimum and may be superseded by more restrictive requirements of others. In addition to the following recommendations, General Earthwork and Grading Specifications are provided in Appendix F.

3.2 Site Preparation and Earthwork

Site preparation and grading should be performed in accordance with the recommendations herein and the requirements of the City of Aliso Viejo/County of Orange.

3.2.1 Site Demolition and Clearing

Prior to remedial grading, the existing structures, foundations, hardscape/landscape, and utilities to be abandoned should be demolished and removed. Deleterious materials and debris should be cleared from the site and disposed of offsite. Concrete material may be mixed with onsite soils and placed as compacted fill provided it is broken into pieces that are smaller than 6 inches in the largest diameter. Asphalt concrete may also be used in compacted fill materials; however, it should not be placed under the residential pads. Placement of concrete and asphalt as compacted fill should be approved by the project environmental consultant. Excavations for the removal of existing foundations, utilities, and vegetation, including onsite trees, should be observed by the geotechnical consultant. Large roots, highly organic soils, and existing utilities should be removed and should not be incorporated into new fills.

Soil that is disturbed as part of excavations or removal of trees or underground utilities should be evaluated by the geotechnical consultant. Excavations that require backfill should be properly documented and compacted under the observation and testing of the geotechnical consultant in accordance with the recommendations provided in Section 3.2.4.

3.2.2 Protection of Existing Improvements and Utilities

Existing improvements, and utilities on or adjacent to the site that are to be protected in place should be located and visually marked prior to grading operations. Excavations adjacent to improvements to be protected in-place or any utility easement should be performed with care, so as not to undermine existing foundations or destabilize the adjacent ground.

Stockpiling of soils more than 5 feet in height at or near existing structures and over utility lines should not be allowed. If deeper removals are required, shoring or other special measures (i.e., setback or laybacks) to provide safety and mitigate the potential for lateral/vertical movements may be required.

3.2.3 Remedial Grading Measures

Remedial grading at the site should consist of removal of weathered/unsuitable fill materials. In general, we recommend that remedial grading for the proposed building pads consist of removal and recompaction of soils in the upper 3 to 4 feet (from existing grade) to remove any unsuitable/disturbed artificial fill material. The removals for building pads should extend a minimum of 4 feet laterally, beyond the building footprint. Removals within the proposed drive areas may be limited to removal and re-compaction of the upper 1 to 2 feet, below existing grades. Where deeper unsuitable material is encountered, the removals should be extended to the bottom of unsuitable materials to competent, unweathered/undisturbed artificial fill.

The geotechnical consultant should review and approve the removal bottoms prior to fill placement and should provide additional specific recommendations based on actual conditions, if necessary.

Excavations deeper than 4 feet will need to be laid back at a minimum inclination of 1:1 or provided with shoring. Shallow, unconfined excavations (4 feet or less) may consist of near-vertical excavation, locally, and upon review by the geotechnical consultant. Trench excavations should be performed in accordance with Cal/OSHA requirements for Soil Type "B". The contractor's qualified person should verify compliance with Cal/OSHA requirements. Excavations near existing structures (within a 1:1 projection) should be provided with shoring that is designed to support the surcharge load of the existing structure. Otherwise, excavations may need to be performed in sections (A/B/C slot cuts). Slot cuts should not exceed more than 20 feet in length. The conditions should be reviewed in the field by the project geotechnical consultant. Additional recommendations should be provided based on the actual conditions encountered during excavation and grading, as needed.

3.2.4 Fill Placement

Upon the completion of remedial grading measures, the approved removal bottoms should be scarified a minimum of 6 inches. The removal bottoms and fill materials should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM Test Method D1557. Fill materials should be placed in loose lifts no thicker than 8 inches.

Fill materials should be relatively free of deleterious material. The existing fill materials are considered suitable for re-use as compacted fill provided any deleterious material is removed. Considering that the onsite soils predominately consist of silty/clayey soils that are diatomaceous, achieving adequate compaction at acceptable moisture contents during fill placement may require additional effort. The moisture content of the fill materials should be above the optimum moisture content but within the compactable levels.

Concrete material may be mixed with onsite soils and placed as compacted fill if it is broken into pieces that are smaller than 6 inches in the largest diameter. Asphalt concrete may also be used in compacted fill materials; however, it should not be placed under the residential pads. Placement of concrete and asphalt as compacted fill should be approved by the project environmental consultant.

3.2.5 Import

The geotechnical consultant should evaluate and accept any import soils prior to transportation to the subject site. We recommend that import soils have similar or better engineering properties to onsite soils. At minimum, the import materials should have an Expansion Index of less than 90 and a Plasticity Index of less than 25.

3.3 Settlement Potential

The amount of settlement will depend upon the type of foundation(s) selected and future loading by additional fill and structures. Based on our review of the subsurface data, considering the remedial grading recommendations provided in this report are implemented during grading, and structural loads typically associated with the anticipated 3- to 4-story residential units, we estimate that total and differential post-construction settlement will be on the order of 2 inches and 1-inch over a span of 40 feet, respectively.

SA GEO should be provided with the foundation plans and structural loads, once available, in order to further evaluate the potential for post-construction settlement of the proposed buildings and associated improvements. The parameters provided herein will then be confirmed/updated based on the planned foundations and loads and additional testing and/or analysis.

3.4 Foundation Design

The slab and foundations should be designed by the project structural engineer based on the proposed structure type and the anticipated loading conditions. The foundation soils are anticipated to have expansive soil conditions ("High" expansion potential) and will be subject to climatic and landscape moisture fluctuations. Post-tensioned slab should be anticipated for the proposed residential buildings. The following foundation recommendations are provided with the assumption that the recommendations included in Section 3.2 of this report are implemented during site grading. Caisson design parameters are provided in Section 3.5 of this report.

The recommended net allowable bearing capacity for continuous and isolated footings may be calculated based on the following equation:

$q_{all} = 500\ D + 150\ B + 1{,}500$ (but not to exceed 3,500 psf, see below for post-tensioned/mat slabs)

where:
D = embedment depth of footing, in feet
B = width of footing, in feet

Also, the following parameters may be used for design of foundation and slabs:

- Soil unit weight = 110 pcf
- Soil internal friction angle = 25 degrees
- Coefficient of Friction = 0.30
- Subgrade modulus (k) of 50 pci (corrected for large slabs)
- Soil elastic modulus (Es) of 1,000 psi
- Effective Plasticity Index (upper 15 feet) = 35

The allowable bearing capacity of 1,000 psf may be used for design of post-tensioned/mat foundation.

The dead load of concrete below adjacent grades (buried concrete foundations) may be neglected. The allowable bearing pressure and friction coefficient may be increased by one-third for wind and seismic loading.

We recommend that strip and isolated footings for the buildings have a minimum embedment depth of 18 inches below the lowest adjacent grade. Continuous footings should be at least 12 inches wide and isolated column footings should be at least 24 inches wide. The footings of freestanding and isolated structures, such as walls and pilasters, should have a minimum embedment depth of 18 inches into approved soils.

The following table provides our general guidelines and preliminary recommendations for design of post-tensioned foundations and slabs on expansive soil in accordance with the 2022 California Building Code (CBC) and Post-Tension Institute (PTI) DC 10.5 Edition provisions.

GEOTECHNICAL GUIDELINES
FOR DESIGN OF POST-TENSIONED SLABS

Parameter	Recommendation
Center Lift	
Edge Moisture Variation Distance, e_m	7.50 feet
Center Lift, y_m	0.90 inches
Edge Lift	
Edge Moisture Variation Distance, e_m	4.00 feet
Edge Lift, y_m	1.25 inch
Presaturation, as needed, to obtain the minimum moisture down to the minimum depth	1.3 x optimum down to 18 inches

We recommend that post-tensioned slabs have a thickened edge such that the slab is embedded a minimum of 18 inches below the lowest adjacent grade.

In addition, as indicated in the DC 10.5 Edition of PTI, shape factor calculations should be performed by the project structural engineer in order to determine if strengthening/modification of foundations are necessary. Per PTI guidelines, modifications to the foundations design should be considered if the shape factor (ratio of square of foundation perimeter over foundation area) exceeds 24.

If non-post-tensioned slabs-on-grade and foundations are considered at the site, an effective Plasticity Index of 35 is considered appropriate for the upper 15 feet of soil materials, in accordance with Wire Reinforcement Institute (WRI) method (per the 2022 California Building Code). For non-post-tensioned slabs, we recommend a minimum embedment of 18 inches below the lowest adjacent grade for the perimeter footings. Also, the upper 18 inches of subgrade soil should be pre-saturated to 130 percent of optimum moisture content prior to placement of moisture barrier and concrete.

The foundations and slabs should also be designed to tolerate the total and differential settlements discussed in Section 3.3 of this report.

For the design of pole-type foundations (i.e., light poles, shade structures, etc.), an allowable soil-bearing pressure (s_1) of 290 psf/ft may be used for Equation 18-1 (the "pole" equation) of the 2022 California Building Code (CBC) Section 1807.3.2.1 to determine the depth of embedment for the footings, considering level ground conditions. The equation is applicable for designed embedment depths of less than 12 feet for the purpose of computing lateral pressure. Also, for vertical loads on pole-type foundations, an allowable skin friction of 250 pounds per square foot may be used. Pole foundations should have a minimum embedment of 30 inches below adjacent grades. For cast-in-place pole-type foundations, the vertical end bearing pressure should be neglected.

3.5 Caisson Design

All caissons, if any, should have a minimum of 5 feet embedment into competent fill materials. An average skin friction value of 250 pounds per square foot may be utilized to calculate the axial capacity of caissons. The lateral capacity of caissons may be computed using a value of 290 psf/ft but should not exceed 4,400 psf/ft for level conditions. For caissons near the existing descending slope with passive envelope impacted by the slope, the passive pressure should be limited to 170 psf/ft. Passive resistance may be doubled for isolated piles/caissons spaced a minimum of 3 diameters apart center-to-center. The allowable bearing pressure (both axial and lateral) may be increased by one-third for wind or seismic loading. Other minimum footing dimensions should be provided by the Structural Engineer and should comply with Table 1809.7 of the 2022 CBC.

Caissons should be designed in accordance with ACI recommendations and applicable building code requirements. The accepted criteria for caisson installation are detailed below:

- Caissons should be constructed as pre-drilled cast-in-place elements. A representative of the geotechnical consultant should be present during drilling of all caisson excavations in order to verify proper embedment and to geotechnically review appropriate drilling methods.
- Caisson excavations should be cleaned of loose soil, cuttings and groundwater and should be reviewed by the project geologist prior to placement of steel or concrete.
- No caisson boring shall be excavated within 6 feet from the nearest edge of a completed caisson unless the completed caisson has been filled with concrete for more than 24 hours.

3.6 Retaining Walls Design and Lateral Earth Pressures

Recommendations for lateral earth pressures for permanent retaining walls and structures with approved onsite drained soils and above the groundwater table are as follows:

Conditions	*Level (pcf)*	*2:1 Sloping*
Active	40	60
At-Rest	65	85
Passive	290	170 (sloping down)

These parameters are based on a soil internal friction angle of 25 degrees, a cohesion of 100 pounds per square foot (psf) and soil unit weight of 110 pcf.

To design an unrestrained retaining wall, such as a cantilever wall, the active earth pressure may be used. For a restrained retaining wall, the at-rest pressure should be used. Passive pressure is used to compute lateral soils resistance developed against lateral structural movement. The passive pressures provided above may be increased by one-third for wind and seismic loads. The passive resistance is taken into account only if it is ensured that the soil against embedded structure will remain intact with time. Future landscaping/planting and improvements adjacent to the retaining walls should also be taken into account in the design of the retaining walls. Excessive soil disturbance, trenches (excavation and backfill), future landscaping adjacent to footings and over-saturation can adversely impact retaining structures and result in reduced lateral resistance.

For sliding resistance, the friction coefficient of 0.30 may be used at the concrete and soil interface. The coefficient of friction may be increased by one-third for wind and seismic loading. The retaining walls may also need to be designed for additional lateral loads if other structures or walls are planned within a 1H:1V projection.

If slopes above the retaining walls are relatively minor (in height), the additional load associated with the soil above the retaining wall and within the active wedge may be calculated as a **surcharge load** and applied to the retaining wall using a coefficient of active pressure (k_a) of 0.48.

The seismic lateral earth pressure for walls retaining more than 6 feet of soil may be estimated to be an additional 16 pcf for active and at-rest conditions. The earthquake soil pressure has a triangular distribution and is added to the static pressures. For the active and at-rest conditions, the additional earthquake loading is zero at the top and maximum at the base. The seismic lateral earth pressure does not apply to walls retaining less than, or equal to, 6 feet of soil (2022 CBC Section 1803.5.12).

Drainage behind walls retaining more than 30 inches of soil should also be provided in accordance with the attached Figure 4. Specific drainage connections, outlets and avoiding open joints should be considered for the retaining wall design.

3.7 Seismic Design Parameters

The following table summarizes the seismic design criteria for the subject site. The seismic design parameters are developed in accordance with ASCE 7-16 and 2022 CBC. Please note that, considering the proposed structures and anticipated structural periods, site-specific ground-motion hazard analysis was not performed for the site. Per Supplement 3 of ASCE 7-16, the value of S_{M1}, and therefore S_{D1}, have been increased by 50 percent. The seismic response coefficient, Cs, should be determined per the parameters provided below and using equation 12.8-2 of ASCE 7-16.

Selected Seismic Design Parameters from 2022 CBC/ASCE 7-16	*Seismic Design Values*	*Reference*
Latitude	33.5946 North	
Longitude	-117.7243 West	
Controlling Seismic Source	San Joaquin Hills	USGS, 2024
Site Class per Table 20.3-1 of ASCE 7-16	D	
Spectral Acceleration for Short Periods (Ss)	1.218 g	SEA/OSHPD, 2024
Spectral Accelerations for 1-Second Periods (S_1)	0.438 g	SEA/OSHPD, 2024
Site Coefficient F_a, Table 11.4-1 of ASCE 7-16	1.013	SEA/OSHPD, 2024
Site Coefficient F_v, Table 11.4-2 of ASCE 7-16	1.862	
Design Spectral Response Acceleration at Short Periods (S_{DS}) from Equation 11.4-4 of ASCE 7-16	0.822 g	SEA/OSHPD, 2024
Design Spectral Response Acceleration at 1-Second Period (S_{D1}) from Equation 11.4-4 of ASCE 7-16 (Includes 50% increase per Supplement 3)	0.816 g	
T_S, S_{D1} /S_{DS} 11.4.6 of ASCE 7-16	0.992 sec	
T_L, Long-Period Transition Period	8 sec	SEA/OSHPD, 2024
Peak Ground Acceleration Corrected for Site Class Effects (PGA_M) from Equation 11.8-1 of ASCE 7-16	0.566 g	SEA/OSHPD, 2024
Seismic Design Category, Section 11.6 of ASCE 7-16	D	SEA/OSHPD, 2024

3.8 Slope Stability and Slope Setback

No significant modifications to the existing fill slope along the eastern property line are planned as part of this project. The existing slope is composed of compacted artificial fill materials and the proposed improvements are not anticipated to adversely impact the slope. Based on our slope stability analysis (Appendix E), the existing slope was found to be grossly stable. In general, slopes are considered susceptible to surficial instability in the form of erosion, raveling, and slumping. Special care should be taken to ensure that onsite runoff is controlled and directed offsite in a non-erosive manner and that site drainage, and slopes are maintained over the life of the project.

Footings for structures located above descending slopes should be set back from the slope face in accordance with the minimum requirements of the City of Aliso Viejo and section 1808.7.1 of the 2022 CBC, whichever is greater. The setback distance is measured from the outside edge of the footing bottom along a horizontal line to the face of the slope.

The tables below summarize the minimum setback criteria for structures above descending slopes:

Case A – Building and Retaining Wall Footings Above Descending Slopes	
Slope Height [H] (feet)	*Minimum Setback from Slope face (feet)*
Less than 10	5
10 to 20	½ * H
20 to 30	10
Greater than 30	⅓ * H (maximum of 40')

Case B – Freestanding Wall Footings Above Descending Slopes	
Slope Height [H] (feet)	*Minimum Setback from Slope face (feet)*
Less than 10	5
10 to 20	½ * H
Greater than 20	Maximum of 10

For freestanding walls and other structures that are sensitive to lateral movement (e.g., smooth stucco finish, glass screens, etc.), SA GEO recommends that the structural setback requirements in accordance with Case A above be followed or that additional design measures be used to help control the potential for cracking and displacements. Otherwise, typical freestanding walls may have a setback in accordance with Case B.

3.9 Corrosivity

Soluble sulfates exposure in the onsite soils should be classified as "S2" per Table 19.3.1.1 of ACI-318-14. Structural concrete elements in contact with soil include footings and building slabs-on-grade. The flatwork and sidewalk concrete are typically not considered structural elements. Concrete mix for structural elements should be based on the "S2" soluble sulfate exposure class of Table 19.3.2.1 in ACI-318-14. Other ACI guidelines for structural concrete are recommended. Also, onsite soils are anticipated to be corrosive to metals.

3.10 Expansion Potential

At the completion of grading, we anticipate that onsite soils will have "High" expansion potential. The geotechnical recommendations provided in this report including the design parameters for foundations, slab-on-grade and flatwork improvement should be implemented during design and construction. Updated recommendations will be provided upon additional testing at the completion of grading at the site and as needed.

Homeowners and their design/construction team should be familiar with the recommendations in this report as well as principles described in a useful reference published by the California Geotechnical Engineers Association (CalGeo), titled, "Coexisting with Expansive Soil: An Informational Guide for Homeowners." This free booklet can be downloaded at www.calgeo.org.

3.11 Interior Slab Moisture Mitigation

In addition to geotechnical and structural considerations, the project owner should also consider interior moisture mitigation when designing and constructing slabs-on-grade.

The intended use of the interior space, type of flooring, and the type of goods in contact with the floor may dictate the need for, and design of, measures to mitigate potential effects of moisture emission from and/or moisture vapor transmission through the slab. Typically, for human occupied structures, a vapor retarder or barrier is recommended under the slab to help mitigate moisture transmission through slabs. The most recent guidelines by the American Concrete Institute (ACI 302.1R-04) suggest that the vapor retarder be placed directly under the slab (no sand layer). However, the location of the vapor retarder may also be subject to the builder's past successful practice. Placement of 1 or 2 inches of sand over the moisture retardant has been common practice by builders in southern California. Specifying the strength of the retarder to resist puncture and its permeance rating is important. These qualities are not necessarily a function of the retarder thickness. A minimum of 10-mil is typical but some materials, such as 10-mil polyethylene ("Visqueen"), may not meet the desired standards for toughness and permeance.

Vapor retarders, when used, should be installed in accordance with standards such as ASTM E 1643 and/or those specified by the manufacturer.

Concrete mix design and curing are also significant factors in mitigating slab moisture problems. Concrete with lower water/cement ratios results in denser, less permeable slabs that also "dry" faster with regard to when flooring can be installed (reduced moisture emissions quantities and rates). Rewetting of the slab following curing should be avoided since it can result in additional drying time required prior to flooring installation. Proper concrete slab testing prior to flooring installation is also important.

Concrete mix design, the type and location of the vapor retarder should be determined in coordination with all parties involved in the finished product, including the project owner, architect, structural engineer, geotechnical consultant, concrete subcontractors, and flooring subcontractors.

3.12 Exterior Concrete

The sidewalk, patio slabs, driveways and other flatwork elements should be at least 4 inches thick. Driveway approaches should be a minimum of 6 inches thick. We recommend that the concrete flatwork be reinforced with No. 3 bars be placed at 24 inches on center both ways. Concrete slabs should be provided with construction or weakened plane control joints at a maximum spacing of 6 feet. The control joints should have a thickness that is ¼ of the total concrete thickness. Upon the placement and compaction of subgrade soils (per Section 3.2 of these recommendations), the upper 18 inches of the subgrade soils should be pre-saturated to 130 percent of optimum moisture content prior to placement of concrete and reinforcement. We also recommend that 2 to 4 inches of granular materials/aggregate base be placed over the compacted subgrade prior to placement of reinforcement and concrete.

For exterior slabs, the use of a granular sublayer is primarily intended to facilitate presaturation and subsequent construction by providing a better working surface over the saturated soil. It also helps retain the added moisture in the native soil in the event that the slab is not placed immediately.

Exterior concrete elements such as curb and gutter, driveways, sidewalks, and patios are susceptible to lifting and cracking when constructed over expansive soils. With expansive soils, the impacts to flatwork/hardscape can be significant, generally requiring removal and replacement of the affected improvements. Please also note that reducing concrete problems is often a function of proper slab design, concrete mix design, placement, and curing/finishing practices. Adherence to guidelines of the American Concrete Institute (ACI) is recommended. Also, the amount of post-construction watering, or lack thereof, can have a very significant impact on the adjacent concrete flatwork.

On projects with expansive soils, additional measures such as thickened concrete edges/footings, subdrains and/or moisture barriers should be considered where planter or natural areas with irrigation are located adjacent to the concrete improvements. Design and maintenance of proper surface drainage is also very important. If the concrete will be subject to heavy loading from cars/trucks or other heavy objects, thicker pavement section will be required the design of which should be performed by the geotechnical consultant, as needed.

The above recommendations typically are not applied to curb and gutter but should be considered in areas with highly expansive soils.

3.13 Preliminary Asphalt Concrete Pavement Design

Final structural pavement sections should be based on R-value testing after the completion of grading and in accordance with city of Aliso Viejo requirements. Based on an R-value of 5 and estimated traffic indices (TIs), we recommend the following preliminary pavement sections:

Street Location	***Estimated TIs***	***Pavement Section***
Parking Stalls	TI – 4.0	3 inches of AC / 6 inches of AB
General Drives	TI – 5.5	4 inches of AC / 10 inches of AB
AC = Asphalt Concrete, AB = Aggregate Base		

Please note that for two-stage paving operations, we recommend that the final AC cap be a minimum of 0.10 foot thick and the base AC course have a minimum thickness of 0.25 foot.

If pavement repair is needed within the adjacent streets, the section should match the existing section and follow standard City/County guidelines for trench/pavement repair. The new pavement section should at minimum consist of 4 inches of AC over 10 inches of AB.

Asphalt concrete pavement should be placed in accordance with the requirements of Sections 301 and 302 of the Standard Specifications of Public Works Construction (the Greenbook). Prior to construction of pavement sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in-place to a minimum of 90 percent relative compaction (per ASTM D1557). Subgrade should be firm prior to AB placement.

AB materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of any deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557). Asphalt concrete should also be compacted to a minimum relative compaction of 95 percent.

Unpaved median and parkway areas should be provided with vertical moisture barriers.

3.14 Vehicular PCC Pavements

For trash enclosures, we recommend 6 inches of PCC reinforced with No. 4 rebar at 18 inches on-center, both ways, over 4 inches of aggregate base placed over compacted subgrade. For parking stalls, the section may consist of 4 inches of PCC reinforced with No. 4 rebar at 18 inches on-center, both ways, over 4 inches of aggregate base over compacted subgrade.

The subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction (per ASTM D1557).

Aggregate base materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of any deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557).

3.15 Concrete Paver Section

For concrete pavers within **pedestrian** walkways, we recommend 60-millimeter-thick concrete pavers over approximately 1 inch of sand, over a minimum of 6 inches of AB, over compacted subgrade. This should also accommodate the rare maintenance cart or light truck that might drive up on these areas.

For concrete pavers within **vehicular** drive areas, if any, we recommend 80-millimeter-thick concrete pavers over 6 inches of concrete reinforced with No. 3 rebar at 24 inches on-center, over 4 inches of AB. Alternatively, the concrete low pour slab may be replaced with a minimum of 15 inches of AB over compacted subgrade; or 12 inches of AB over a layer of geotextile (e.g., Mirafi 600X or equivalent), over compacted subgrade.

A concrete band along the perimeter of the pavers should be provided for lateral restraint. The concrete band should, at minimum, be 12 inches deep and deepened to below the depth of disturbed soil, if adjacent to landscape/planter areas.

Also, a drainage system consisting of a 2-inch PVC drainage pipe should be installed at the low end of the concrete low pour at 10-foot intervals through the slab and filled with pea gravel. The PVC drainage pipe should drain to a minimum of 6-inch-diameter by 12-inch-deep drain pit filled with pea gravel below the pipe. The paver surfaces should slope away from structures a minimum of 2 percent. The concrete underlayment for the drive areas should be provided with weakened plane joints at maximum 6-foot intervals. If the pavers are to be set in mortar or are underlain with AB, this drainage system is not required.

Prior to construction of the paver sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction (per ASTM D1557). The upper 18 inches of subgrade for pedestrian walkway and patio areas should then be presaturated to 130 percent of optimum moisture content. Subgrade for vehicular pavers need not be pre-saturated.

Aggregate base materials can be crushed aggregate base or crushed miscellaneous base in accordance with the Greenbook (Section 200-2). The materials should be free of deleterious materials. Aggregate base materials should be placed in 6- to 8-inch-thick loose lifts, moisture-conditioned as necessary, and compacted to a minimum of 95 percent relative compaction (per ASTM D1557).

3.16 Trench Excavation and Backfill

Excavations should be performed in accordance with the requirements set forth by Cal/OSHA Excavation Safety Regulations (Construction Safety Orders, Section 1504, 1539 through 1547, Title 8, California Code of Regulations). In general, onsite soils may be classified as Type "B". Cal/OSHA regulations indicate that, for workmen in confined conditions, the steepest allowable slopes in Type "B" soils are 1:1. Locally, Type "C" soils may be encountered (saturated soils, seepage) and require slope layback of 1.5H:1V (horizontal:vertical). These laybacks apply to excavations 20 feet deep or less. Where there is no room for these layback slopes, we anticipate that shoring will be necessary. Adequate shoring (i.e., shields) should be provided, as deemed necessary. The soils within the adjacent streets are anticipated to be similar to onsite soils. Excavations should be reviewed periodically by the contractor's qualified person to confirm compliance with Cal/OSHA requirements.

Onsite soils should be suitable for use as trench backfill with the exception of wet/saturated materials, if encountered. Utility trench backfill should be in accordance with City of Aliso Viejo, County of Orange and/or the governing jurisdiction's specifications. Backfill materials should be compacted to a minimum of 90 percent relative compaction (per ASTM D1557). Rocks greater than 3 inches in largest diameter should generally not be used as trench backfill unless approved by the agency and geotechnical consultant of record. Excavation and backfilling of HDPE pipes (if any) should be in accordance with the manufacturer’s requirement and the Greenbook. Select granular backfill (i.e., clean sand with SE 30 or better) may be used in lieu of native soils but should also be compacted or densified with water jetting and flooding.

Trenches excavated next to structures and foundations should also be properly backfilled and compacted to provide full lateral support and reduce settlement potential.

3.17 Groundwater

Groundwater was encountered during our subsurface exploration at a depth of 55 feet in Boring H-4 (within Niguel Formation). While some saturated soil may be encountered during grading and/or utility trench excavation, we do not anticipate significant seepage or that mitigation measures will be necessary. In general, groundwater is anticipated to remain more than 20 feet below the proposed building foundations. However, shallow, perched water/seepage may occur on an annual and seasonal basis as a result of rainfall, irrigation and/or seepage from adjacent properties.

3.18 Stormwater Infiltration

As discussed previously (Section 2.7), considering the artificial fill thickness, and bedrock directly below the fill materials, and presence of fine-grained expansive soils, stormwater infiltration at the site is not feasible from a geotechnical viewpoint. Other methods of filtration/treatment should be evaluated by the project civil engineer.

3.19 Surface Drainage and Irrigation

Maintaining adequate surface drainage, proper disposal of run-off water, and control of irrigation will help reduce the potential for future moisture-related problems and differential movements from soil heave/settlement.

Surface drainage should be carefully taken into consideration during grading, landscaping, and building construction. Positive surface drainage should be provided to direct surface water away from structures and slopes and toward the street or suitable drainage devices. Ponding of water adjacent to the structures should not be allowed. Buildings should have roof gutter systems and the run-off should be directed to parking lot/street gutters by area drainpipes or by sheet flow over paved areas. Paved areas should be provided with adequate drainage devices, gradients, and curbing to prevent run-off flowing from paved areas onto adjacent unpaved areas.

Considering the climatic conditions in southern California and provided that the recommendations included in this report are implemented during grading and construction, a minimum two-percent slope away from structures is considered acceptable and in substantial compliance with the 2022 CBC. Also, swales with one-percent slopes are acceptable from a geotechnical standpoint and are common practice in this locale.

Construction of planter areas immediately adjacent to structures should be avoided if possible. If planter boxes are constructed adjacent to or near buildings, the planters should be provided with controls to prevent excessive penetration of the irrigation water into the foundation and flatwork subgrades. Provisions should be made to drain excess irrigation water from the planters without saturating the subgrade below or adjacent to the planters. Raised planter boxes may be drained with weepholes. Deep planters (such as palm tree planters) should be drained with below-ground, water-tight drainage lines connected to a suitable outlet. Moisture barriers should also be considered.

It is also important to maintain a consistent level of soil moisture, not allowing the subgrade soils to become overly dry or overly wet. Properly designed landscaping and irrigation systems can help in that regard.

3.20 Slope Maintenance, Lot Drainage, and Erosion Control

Maintenance of proper pad drainage, the design and construction of property improvements in accordance with sound engineering practices, and proper maintenance of landscaping, including regular pad and slope irrigation, should be performed. Irrigation should not be excessive or sporadic; maintaining a relatively constant level of soil moisture around structures and improvements is important. Oversteepening of slopes should be avoided.

Planters and landscape areas adjacent to structures should be avoided or provided with measures to mitigate the potential for water getting under the foundations and slabs. Water should not be allowed to pond and drainage should be maintained away from structures and tops of slopes.

Establishing and maintaining a rodent-control program is also recommended to reduce surficial slope deterioration often associated with rodent burrowing. The improvements at or near the tops of slopes may be subject to varying degrees of slope-creep related movements and should be designed with that in mind, meeting the setback criteria discussed in this report.

3.21 Additional Subsurface Exploration and Laboratory Testing

Additional subsurface exploration during the design phase of the project is not considered necessary unless significant plan changes occur. Additional laboratory testing should be performed during and upon completion of the grading to confirm/update the design parameters provided herein.

3.22 Review of Future Plans

The project grading, foundation, street improvement, wall, and landscape plans should be reviewed and accepted by the geotechnical consultant prior to grading and construction. Additional recommendations should be provided upon the review of the project plans and as needed.

3.23 Observation and Testing during Grading and Construction

Geotechnical observation and testing should be performed by SA GEO during the following phases of grading and construction:

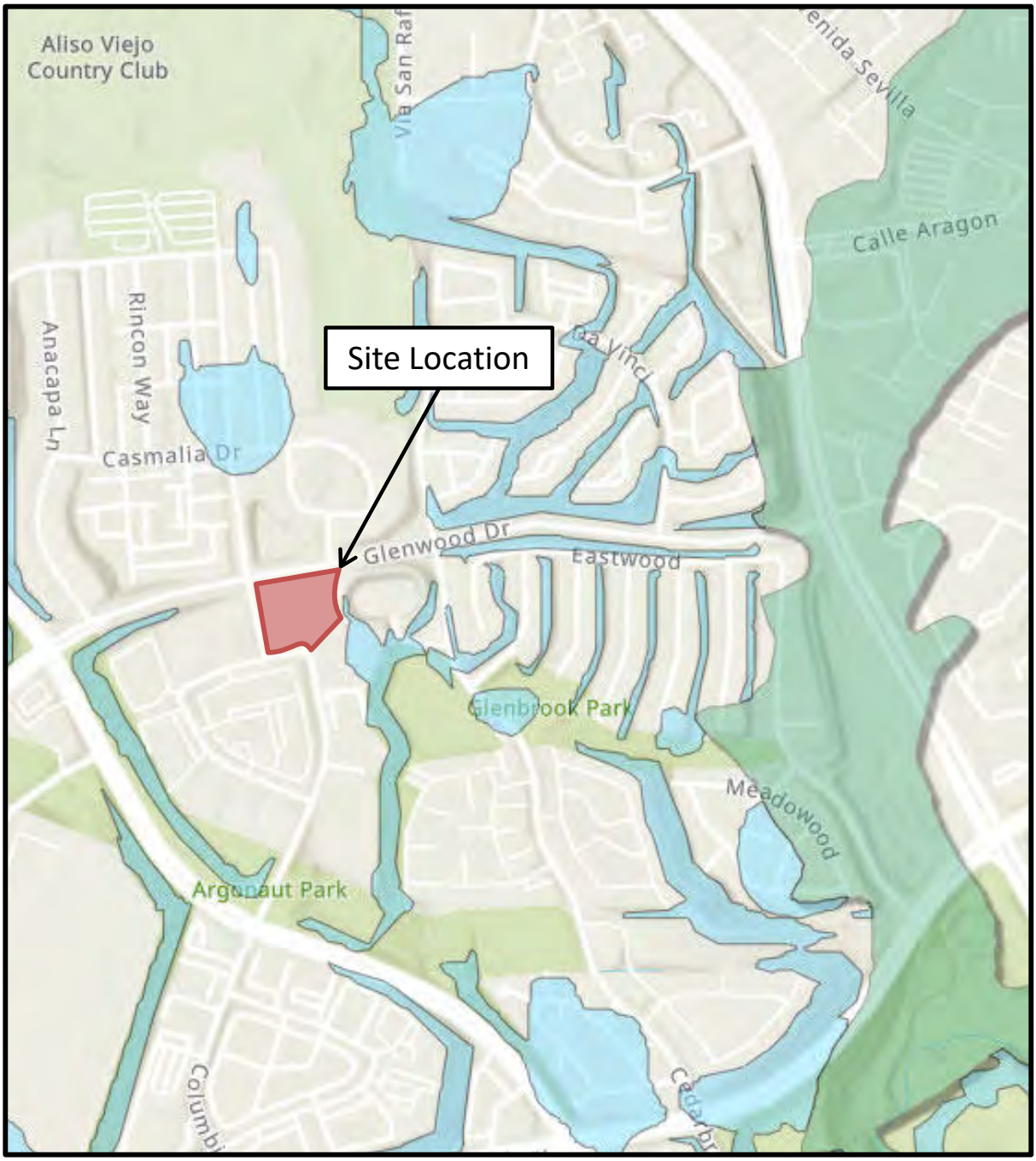
- During site demolition, preparation and clearing;
- During excavations performed for the remedial grading and to relocate or remove existing underground improvements;
- During earthwork, including observation and acceptance of remedial removal bottoms and fill placement, including import material (if any);
- Following the completion of grading, in order to verify soil properties for foundations, slab-on-grade and pavements;
- Upon completion of any foundation or structural excavation, prior to pouring concrete;

- During slab and flatwork subgrade preparation prior to pouring of concrete;
- During placement of backfill for utility trenches;
- During construction of stormwater filtration devices;
- During placement of backfill for retaining structures;
- During installation and backfill of subdrainage systems; and
- When any unusual soil conditions are encountered.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of our client, Meritage Homes, within the scope of services requested for the subject property described herein. This report or its contents should not be used or relied upon for other projects or purposes, or by other parties without the acknowledgement of SA GEO and the consultation of a geotechnical professional. The means and methods used by SA GEO for this study are based on local geotechnical standards of practice, care, and requirements of governing agencies. No warranty or guarantee, expressed or implied, is given.

Our findings, conclusions, and recommendations are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can vary from point to point, can be very different in-between exploration points, and can also change over time. Our conclusions and recommendations are, by nature, preliminary and subject to verification and/or modification during grading and construction when more subsurface data is exposed.

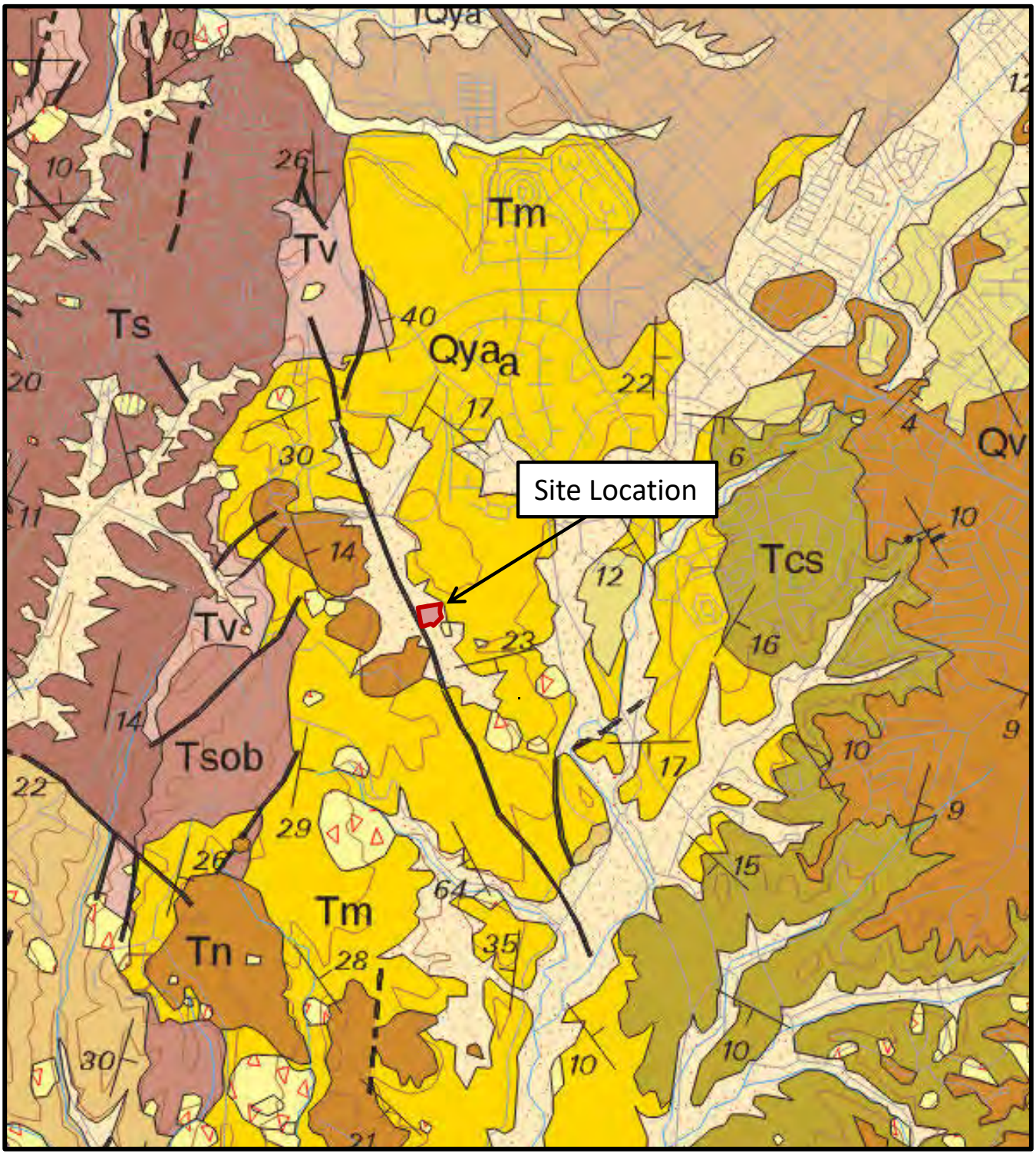


Source: Seismic Hazard Zones, San Juan Capistrano Quadrangle (CDMG, 2001b)

Liquefaction
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resource Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resource Code Section 2693(c) would be required.

Site Location and Seismic Hazard Map		
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 1	S/A



Source: Geologic Map of the San Bernardino and Santa Ana 30' X 60' Quadrangles (USGS, 2006)

Regional Geologic Map		
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 2	S/A



Source: Fault Activity Map of California (Jennings and Bryant, 2010)

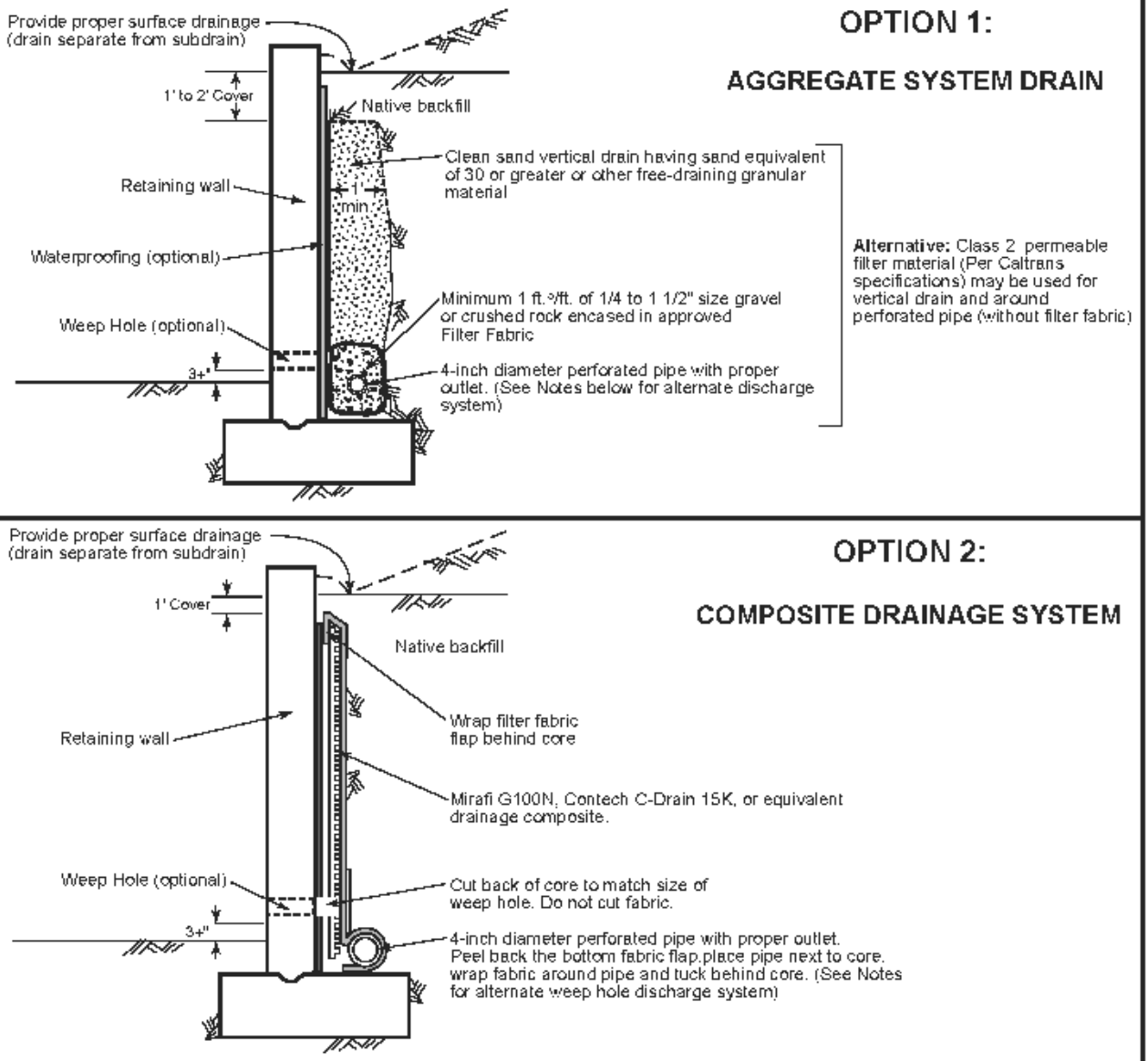
Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissnce nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

Regional Fault Map	
Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Figure 3



NOTES:

1. **PIPE TYPE SHOULD BE PVC OR ABS, SCHEDULE 40 OR SDR35 SATISFYING THE REQUIREMENTS OF ASTM TEST STANDARD D1527, D1785, D2751 , OR D3034.**
2. **FILTER FABRIC SHALL BE APPROVED PERMEABLE NON-WOVEN POLYESTER, NYLON, OR POLYPROPYLENE MATERIAL.**
3. **DRAIN PIPE SHOULD HAVE A GRADIENT OF 1 PERCENT MINIMUM.**
4. **WATERPROOFING MEMBRANE MAY BE REQUIRED FOR A SPECIFIC RETAINING WALL (SUCH AS A STUCCO OR BASEMENT WALL).**
5. **WEEP HOLES MAY BE PROVIDED FOR LOW RETAINING WALLS (LESS THAN 3 FEET IN HEIGHT) IN LIEU OF A VERTICAL DRAIN AND PIPE AND WHERE POTENTIAL WATER FROM BEHIND THE RETAINING WALL WILL NOT CREATE A NUISANCE WATER CONDITION. IF EXPOSURE IS NOT PERMITTED, A PROPER SUBDRAIN OUTLET SYSTEM SHOULD BE PROVIDED.**
6. **IF EXPOSURE IS PERMITTED, WEEP HOLES SHOULD BE 2-INCH MINIMUM DIAMETER AND PROVIDED AT 25-FOOT MAXIMUM SPACING ALONG WALL. WEEP HOLES SHOULD BE LOCATED 3+ INCHES ABOVE FINISHED GRADE.**
7. **SCREENING SUCH AS WITH A FILTER FABRIC SHOULD BE PROVIDED FOR WEEP HOLES/OPEN JOINTS TO PREVENT EARTH MATERIALS FROM ENTERING THE HOLES/JOINTS.**
8. **OPEN VERTICAL MASONRY JOINTS (I.E., OMIT MORTAR FROM JOINTS OF FIRST COURSE ABOVE FINISHED GRADE) AT 32-INCH MAXIMUM INTERVALS MAY BE SUBSTITUTED FOR WEEP HOLES.**
9. **THE GEOTECHNICAL CONSULTANT MAY PROVIDE ADDITIONAL RECOMMENDATIONS FOR RETAINING WALLS DESIGNED FOR SELECT SAND BACKFILL.**

Retaining Wall Drainage Detail

S/A

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Figure 4

Appendix A

APPENDIX A

REFERENCES

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Appendix B

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	*GRAVEL AND GRAVELLY SOILS* MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	*CLEAN GRAVELS* (LITTLE OR NO FINES)	**GW**	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	**GM**	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	*CLEAN SANDS* (LITTLE OR NO FINES)	**SW**	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	**SM**	SILTY SANDS, SAND - SILT MIXTURES
			SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	*SILTS AND CLAYS*	LIQUID LIMIT LESS THAN 50	**ML**	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			**PT**	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Dual symbols are used to indicate gravels or sand with 5-12% fines and soils with fines classifying as CL-ML. Symbols separated by a slash indicate borderline soil classifications.

Sampler and Symbol Descriptions

- Modified California sample (D-#)
- Standard Penetration Test (S-#)
- Shelby tube sample (T-#)
- Large bulk sample (B-#)
- Small bulk sample (SB-#)
- Approximate depth of groundwater during drilling
- Approximate depth of static groundwater

Note: Number of blows required to advance driven sample 12 inches (or length noted).

Laboratory and Field Test Abbreviations

AL	Atterberg limits (plasticity)
CC	Chemical Testing incl. Soluble Sulfate
CN	Consolidation
DS	Direct Shear
EI	Expansion Index
GS	Grain Size Analysis (Sieve, Hydro. and/or -No. 200)
MD	Maximum Density and Optimum Moisture
RV	Resistance Value (R-Value)
SE	Sand Equivalent
UU	Unconsolidated Undrained Shear Strength

Notes:

1. Soil classifications are based on the Unified Soil Classification System and include color, moisture, and relative density or consistency. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate. Bedrock descriptions are based on visual classification and include rock type, moisture, color, grain size, strength, and weathering.
2. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were drilled. They are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO LOG OF BORING

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 1 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB			
0				**Artificial Fill (Af)**			
	B-1						B-1 @ 1-5' GS, AL, MD, EI, CC
	D-1	11	MH	@ 2.5': Mottled olive gray and olive brown clayey SILT, moist, medium stiff, iron staining, trace gravel, diatomaceous.	52.3	68.6	CN
5	D-2	18	MH	@ 5': Mottled olive gray to olive brown clayey SILT, moist, stiff, iron staining, trace caliche, trace gravel, diatomaceous.	47.1	74.1	DS
	D-3	21	MH	@ 7.5': Mottled olive gray and bluish gray clayey SILT, moist, stiff, iron staining, trace gravel and debris, diatomaceous.	47.6	72.9	
10	D-4	14	MH	@ 10': Mottled pale olive gray and pale olive brown clayey SILT, moist, stiff, iron staining, trace caliche, trace gravel, debris, diatomaceous.	72.1	54.3	
15	D-5	17	MH	@ 15': Mottled pale olive gray and pale olive brown clayey SILT, very moist, very stiff, iron staining, trace caliche, diatomaceous.	71.3	57.4	CN
20	D-6	38	CL	@ 20': Mottled black and olive gray silty and fine sandy CLAY, very moist, very stiff to hard, trace organics.	10.9	116.2	
25	D-7	51	CL	@ 25': Mottled black and bluish gray silty/fine sandy CLAY, very moist, hard, trace organics.	13.5	108.3	
30							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 2 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	56	SC	@ 30': Mottled bluish gray and brownish gray clayey silty fine to medium SAND, very moist, dense, trace caliche nodules.	14.4	117.2	
35	D-9	28	CL	@ 35': Bluish gray to black silty/sandy CLAY, very moist to wet, very stiff, trace coarse gravel, diatomaceous.	47.7	72.1	
40	D-10	21	SC	@ 40': Gray clayey SAND, very moist, medium dense.	18.3	108.6	
45	D-11	27	SC	@ 45': Mottled gray and bluish gray clayey SAND, very moist, medium dense.	18.3	107.8	
50	D-12	24	MH	**Monterey Formation (Tm)** @ 50': Mottled olive gray and olive brown clayey/sandy SILTSTONE, very moist, very stiff, diatomaceous, minor interbeds of fine sandstone, well bedded, thinly bedded to laminated.	57.7	70.5	
55	D-13	22	MH	@ 55': Mottled olive gray and olive brown clayey/sandy SILTSTONE, wet, very stiff, diatomaceous, minor interbeds of fine sandstone, well bedded, thinly bedded to laminated, free water/seepage along bedding planes.	50.0	69.3	
60							

Log Of Boring

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Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-1**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10”	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30”)	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 60.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 445
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	50/ 5.5”	MH	@ 60’: Olive brown sandy SILTSTONE, wet, hard, moderately well bedded, thinly laminated, diatomaceous	66.7	59.2	
				Notes: Total Depth: 60.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
65							
70							
75							
80							
85							
90							

Log Of Boring

Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: Groundwater Not Encountered.	
Comments:	

H-2

Total Depth Drilled (ft)	41.5
Approximate Ground Surface Elevation (ft)	442

Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
					Surface: 4" AC, 6" AB			
0					**Artificial Fill (Af)**			
	B	1						B-1 @ 1-5' GS, AL
	D	1	18	MH	@ 2.5': Mottled olive gray and light gray clayey SILT, very moist, stiff, bedrock fragments, iron staining, diatomaceous.	59.3	63.7	
5	D	2	18	MH	@ 5': Mottled olive gray and light gray clayey SILT, very moist, stiff, bedrock fragments, iron staining, diatomaceous.	50.5	70.5	
	D	3	20	MH	@ 7.5': Mottled dark brown and olive gray clayey SILT, moist, stiff, bedrock fragments, diatomaceous.	58.6	65.8	
10	D	4	33	MH	@ 10': UPPER: Olive gray clayey SILT, moist, very stiff, bedrock fragments, diatomaceous.	46.4	74.2	
				SM	@ 10': LOWER: Pale yellowish brown silty fine to medium SAND, moist, medium dense.			
15	D	5	33	MH	@ 15': Light gray clayey SILT, very moist, very stiff, diatomaceous.	77.5	60.3	
20	D	6	35	MH	@ 20': Pale yellow clayey SILT, very moist, very stiff, diatomaceous.	67.6	55.5	
25	D	7	57	ML	**Monterey Formation (Tm)** @ 25': Pale yellow to white clayey SILTSTONE, very moist, hard, fractured.	26.7	96.9	
30								

Log Of Boring

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Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-2**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 2 of 2
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 41.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 442
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	27	MH	@ 30': Pale yellow to yellowish brown clayey SILTSTONE, wet, very stiff, diatomaceous.	76.7	53.7	
35	D-9	24	MH	@ 35': Pale yellow to yellowish brown clayey SILTSTONE, wet, very stiff, diatomaceous.	77.7	52.4	
40	D-10	23	MH	@ 40': Reddish brown to olive gray clayey SILTSTONE, wet, very stiff, iron staining, diatomaceous.	86.7	51.1	
45				Notes: Total Depth: 41.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
50							
55							
60							

Log Of Boring

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Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-3**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 1 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 81.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 441
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 8" AB			
0				**Artificial Fill (Af)**			
	B-1						B-1 @ 1-5' GS
	D-1	24	MH	@ 2.5': Pale olive gray to gray clayey SILT, moist, very stiff, trace coarse sand and fine gravel, diatomaceous.	51.4	71.4	
5	D-2	16	MH	@ 5': Pale olive gray to white clayey SILT, very moist, stiff to very stiff, trace iron staining, diatomaceous.	80.3	51.9	CN
	D-3	15	MH	@ 7.5': Mottled olive gray and black clayey SILT with fine sand, very moist, stiff, diatomaceous.	67.3	66.0	
10	D-4	26	CL	@ 10': Mottled pale olive gray and black silty CLAY with fine sand, very moist to wet, very stiff to hard, diatomaceous.	37.7	86.0	
15	D-5	23	CL	@ 15': Mottled olive gray and black silty CLAY with fine sand, very moist to wet, very stiff, diatomaceous.	37.8	70.9	
20	D-6	22	MH	@ 20': Pale olive gray clayey SILT, very moist to wet, stiff, trace fine gravel, diatomaceous, bedrock fragments up to 3 inches in diameter.	75.8	54.0	
25	D-7	29	CL	@ 25': Mottled olive gray and black silty CLAY, very moist, very stiff, diatomaceous.	38.8	85.0	
30							

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-3**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 81.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 441
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	39	CL	@ 30': UPPER: Mottled pale olive gray and white silty CLAY, very moist, very stiff, diatomaceous.	18.2	108.7	
			SM	@ 30': LOWER: Yellowish brown silty fine SAND, very moist, medium dense, bedrock fragments.			
35	D-9	35	CL	@ 35': UPPER: Mottled pale bluish gray and black silty CLAY, very moist, hard, slightly diatomaceous, trace gravel.	14.9	117.0	
			SM	@ 35': LOWER: Dark brown silty SAND, very moist, medium dense.			
40	D-10	32	MH	@ 40': Mottled bluish gray and dark gray clayey SILT with fine sand, very moist to wet, very stiff, diatomaceous.	58.2	65.1	
45	D-11	38	CL	@ 45': Mottled bluish gray and black fine sandy CLAY, very moist, very stiff.	15.1	110.8	
50	D-12	29	CL	@ 50': Mottled bluish gray and black fine sandy CLAY, wet, very stiff.	28.5	96.5	
55	D-13	45	CL	@ 55': Mottled bluish gray, yellowish brown, and black fine sandy CLAY, wet, hard, bedrock fragments.	24.9	103.6	
60							

Log Of Boring

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-3**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	Page 3 of 3
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 81.5
Approximate Groundwater Depth: Groundwater Not Encountered.		**Approximate Ground Surface Elevation (ft)** 441
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	27	MH	@ 60': Mottled olive gray and gray clayey SILT, very moist, very stiff, diatomaceous.	54.0	66.2	
65	D-15	25	MH	@ 65': Mottled olive gray and gray clayey SILT, very moist to wet, very stiff, diatomaceous.	51.2	66.1	
70	D-16	13	MH	@ 70': UPPER: Mottled olive gray and gray clayey SILT, wet to saturated, stiff, diatomaceous.	65.7	66.5	
			ML	@ 70': LOWER: Dark brown to black SILT, very moist, stiff.			
75	D-17	88/ 11"	MH	**Monterey Formation (Tm)** @ 75': Dark olive brown to dark gray clayey SILTSTONE, wet, hard, laminated, diatomaceous.	68.0	55.8	
80	D-18	94/ 11"	MH	@ 80': Dark olive brown to dark gray clayey SILTSTONE, wet, hard, laminated, trace fine sand, diatomaceous.	63.6	58.8	
85				Notes: Total Depth: 81.5 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
90							

Log Of Boring

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95 Argonaut
Aliso Viejo, California

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: 55 feet.	
Comments:	

H-4

Total Depth Drilled (ft)	76
Approximate Ground Surface Elevation (ft)	443

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
				Surface: 4" AC, 6" AB.			
0				**Artificial Fill (Af)**			
	B-1						B-1 @ 1-4' AL, EI, CC
	D-1	18	MH	@ 2.5': Mottled olive gray and pale gray clayey SILT, moist, stiff, trace caliche, diatomaceous.	61.4	62.3	DS
5	D-2	17	MH	@ 5': Mottled pale olive gray and white clayey SILT, moist, stiff, trace caliche, diatomaceous.	84.2	50.6	
	D-3	13	MH	@ 7.5': Mottled pale olive gray and white clayey SILT, very moist, stiff, trace caliche, diatomaceous.	77.1	51.4	
10	D-4	10	MH	@ 10': Mottled olive gray and white clayey SILT, very moist to wet, medium stiff, diatomaceous.	63.1	56.1	CN
15	D-5	40	CL	@ 15': Mottled dark brown and olive gray silty/fine sandy CLAY, very moist, very stiff.	14.5	110.7	
20	D-6	66	SC	@ 20': Olive gray clayey fine SAND, very moist, dense, trace fine gravel.	14.9	114.1	
25	D-7	31	SC	@ 25': Dark olive gray clayey fine to medium SAND, very moist, medium dense, trace fine gravel.	17.1	109.5	
30							

Log Of Boring

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC	**H-4**
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10"	
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30")	
Sampling Method(s): Modified California, Bulk		**Total Depth Drilled (ft)** 76
Approximate Groundwater Depth: 55 feet.		**Approximate Ground Surface Elevation (ft)** 443
Comments:		

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
30	D-8	33	SC	@ 30': Mottled dark olive gray and black clayey fine SAND, very moist, medium dense.	13.8	115.3	
35	D-9	42	SC	@ 35': Mottled dark olive gray and black clayey fine SAND, very moist, dense.	13.4	117.9	
40	D-10	24	SC	@ 40': Mottled dark olive gray and black clayey fine SAND, very moist, medium dense, trace claystone fragments.	17.1	113.1	
45	D-11	32	SC	@ 45': Bluish gray clayey fine to medium SAND, very moist, medium dense, minor clean sand interbeds up to 0.25-inch thick.	16.1	108.3	
50	D-12	20	CL	@ 50': Black fine sandy CLAY, very moist to wet, stiff, minor clean sand interbeds up to 0.5-inch thick, grass/vegetation fragments.	21.5	103.1	
55	D-13	50/6"	SP	**Niguel Formation (Tn)** @ 55': Yellowish brown fine to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated. @ 55': Groundwater	19.8	101.9	
60							

Log Of Boring

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Appendix B

Date(s)Drilled: 4-22-2024	**Logged By:** AZ/AC
Drilling Method: Hollow Stem	**Drill Bit Size/Type:** 10”
Drill Rig Type: CME 75	**Hammer Type:** Auto (140lbs @ 30”)
Sampling Method(s): Modified California, Bulk	
Approximate Groundwater Depth: 55 feet.	
Comments:	

H-4

Total Depth Drilled (ft)	76
Approximate Ground Surface Elevation (ft)	443

Depth (ft)	SAMPLES Type Number	SAMPLES Blows Per Foot	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	REMARKS
60	D-14	90/ 9”	SP	@ 60’: Yellowish brown fine to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated.	18.3	109.8	
65	D-15	50/ 6”	SP	@ 65’: Yellowish brown medium to coarse SANDSTONE, saturated, very dense, micaceous, weakly indurated.	15.4	115.2	
70							
75	D-16	50/ 3.5”	SP-SM	@ 75’: Yellowish brown to yellowish gray fine to coarse SANDSTONE with silt, saturated, very dense, micaceous, shell fragments, weakly indurated.	23.8	96.6	
80				Notes: Total Depth: 76.0 Feet. Groundwater Not Encountered. Backfilled with Cuttings and Tamped. Asphalt Patched with Cold Patch AC.			
85							
90							

Log Of Boring

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Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01

Appendix B

Appendix C

MATERIALS FINER THAN 75-µm (No. 200) SIEVE by WASHING
ASTM D1140

Client: SA Geotechnical, Inc
Project: 95 Argonaut
Project No.: 24059-01

HAI Project No.: SAG-24-018-2
Performed by: GA
Checked by: KL
Date: 5/6/2024

Boring No.	Sample No.	Depth (ft)	Sample Description (USCS)	Dry Soil before Wash + $W_{Container}$	Dry Soil after #200 Wash + $W_{Container}$	$W_{Container}$	Wt of soil retained on # 200 sieve	Initial wt of dry soil	**Soil % passing 200 sieve**
				g	g	g	g	g	**%**
H-1	B-1	0-5	Olive, Sandy Elastic Silt (MH)	520.19	329.13	221.19	107.94	299.00	**63.90**
H-2	B-1	0-5	Olive Gray, Elastic Silt with Sand (MH)	533.02	305.89	220.07	85.82	312.95	**72.58**
H-3	B-1	0-5	Olive Gray, Elastic Silt with Sand (MH)	466.67	288.21	222.20	66.01	244.47	**73.00**

Liquid Limit, Plastic Limit, and Plasticity Index of Soils

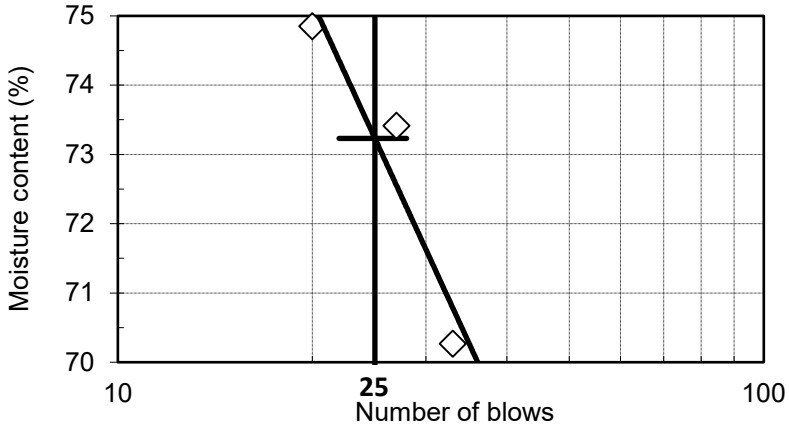
ASTM D4318

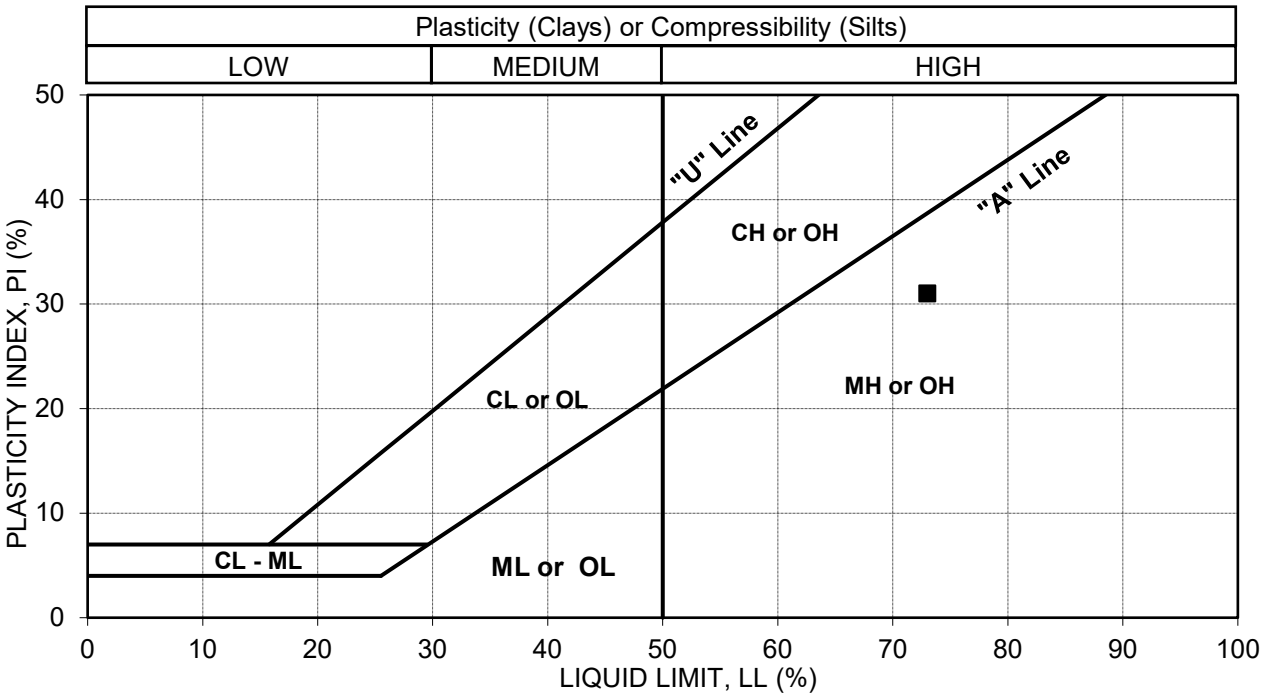
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**33**	**27**	**20**	-	-
Wt. of Wet Soil + Container	(g)	25.83	25.43	25.6	12.89	12.84
Wt. of Dry soil + Container	(g)	19.78	19.41	19.23	10.37	10.32
Wt. of Container	(g)	11.17	11.21	10.72	4.28	4.31
Water content	**(%)**	**70.3**	**73.4**	**74.9**	**41.4**	**41.9**

Liquid Limit (LL)	**73**
Plastic Limit (PL)	**42**
Plasticity Index (PI)	**31**
USCS	**MH**

Remarks:





Liquid Limit, Plastic Limit, and Plasticity Index of Soils

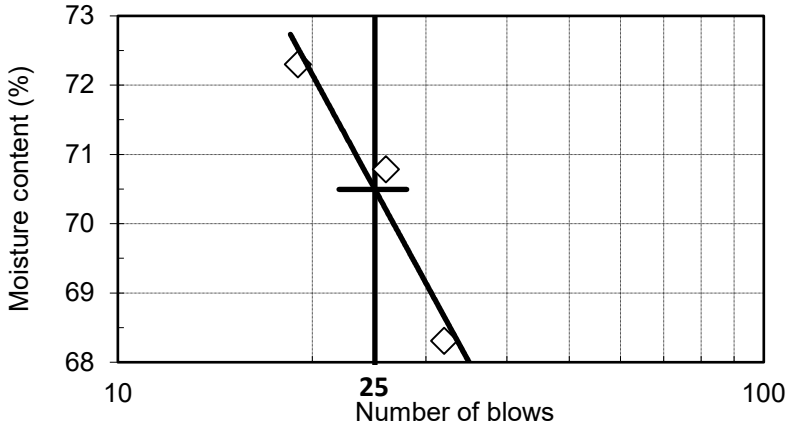
ASTM D4318

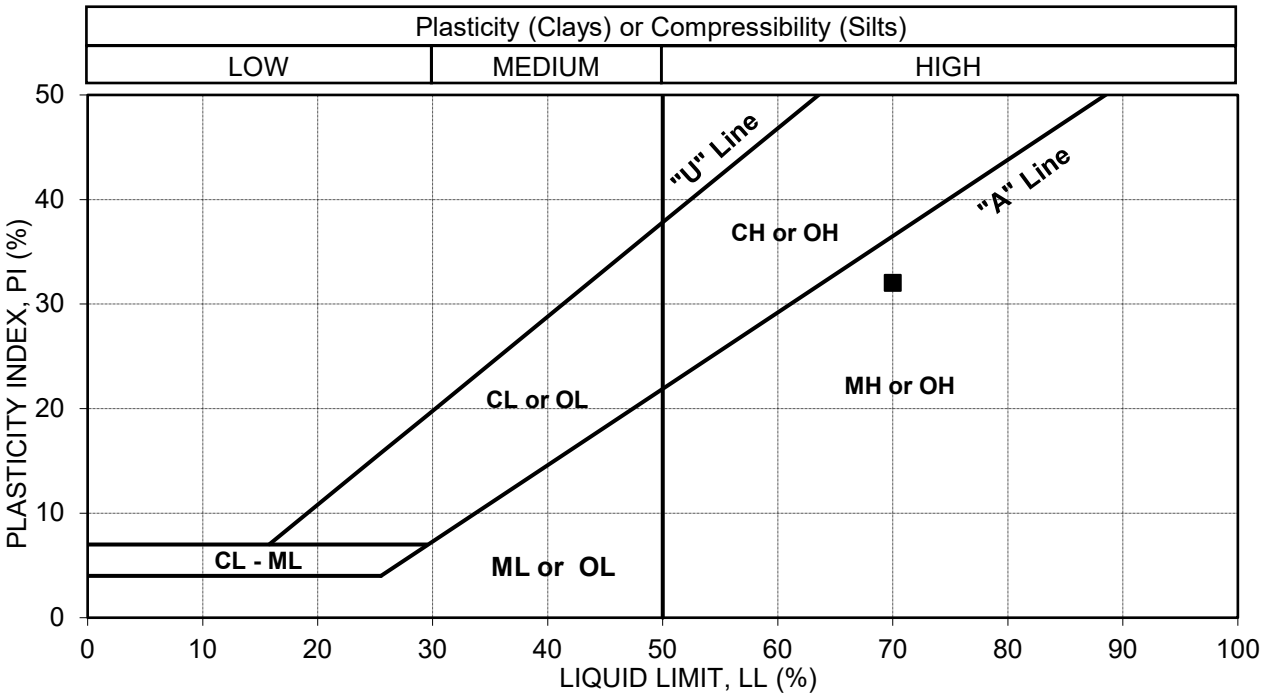
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-2	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**32**	**26**	**19**	-	-
Wt. of Wet Soil + Container	(g)	26.3	26.4	26.47	12.6	12.96
Wt. of Dry soil + Container	(g)	20.2	20.1	19.97	10.29	10.57
Wt. of Container	(g)	11.27	11.2	10.98	4.25	4.18
Water content	**(%)**	**68.3**	**70.8**	**72.3**	**38.2**	**37.4**

Liquid Limit (LL)	**70**
Plastic Limit (PL)	**38**
Plasticity Index (PI)	**32**
USCS	**MH**

Remarks:





Liquid Limit, Plastic Limit, and Plasticity Index of Soils

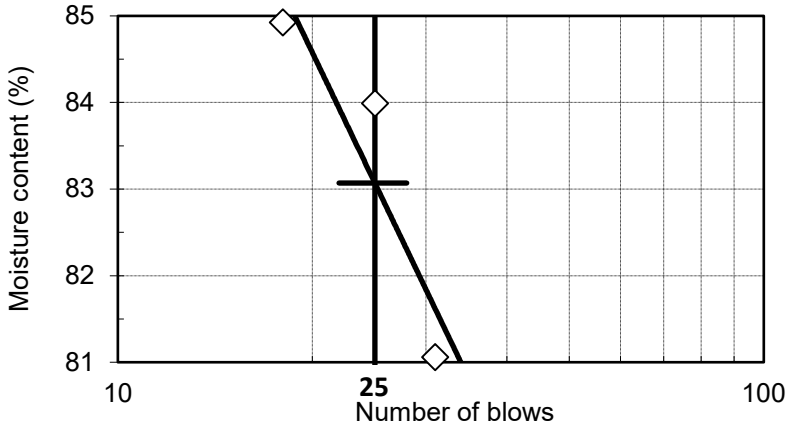
ASTM D4318

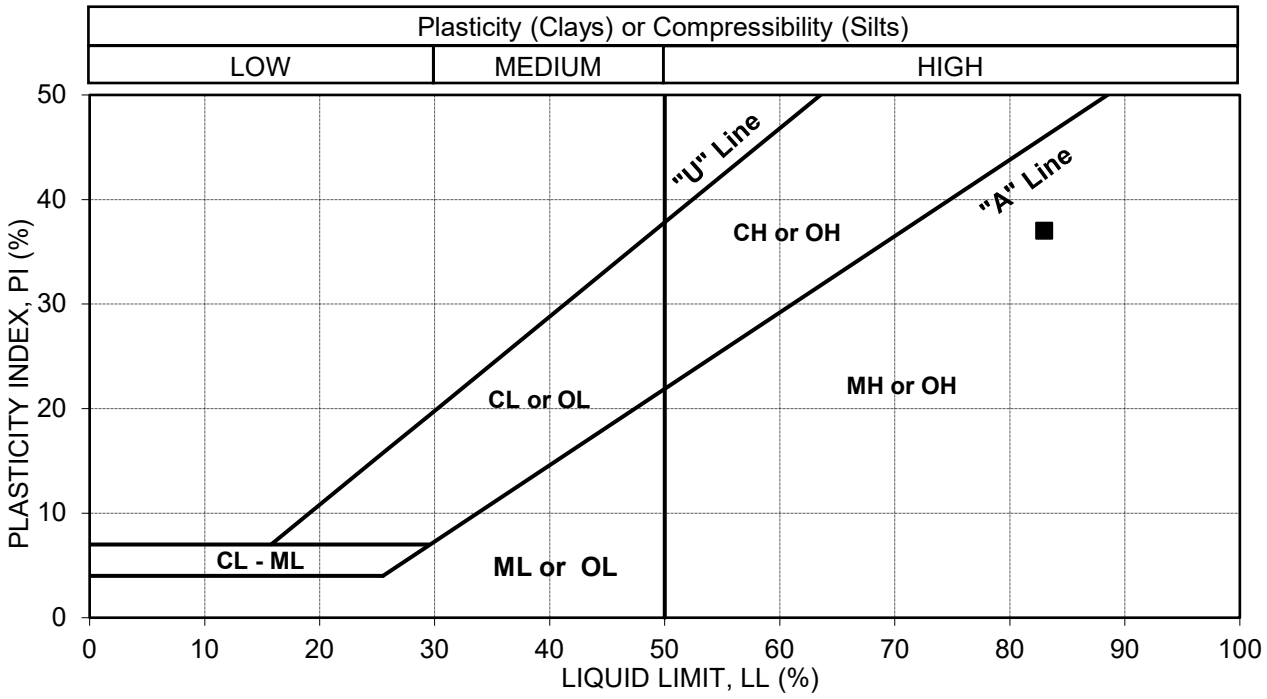
Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	B-1		
Depth (ft):	0-5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Test		LL	LL	LL	PL	PL
No. of blows	**-**	**31**	**25**	**18**	-	-
Wt. of Wet Soil + Container	(g)	26.92	26.3	26.43	12.92	12.79
Wt. of Dry soil + Container	(g)	20.03	19.27	19.5	10.18	10.12
Wt. of Container	(g)	11.53	10.9	11.34	4.22	4.33
Water content	**(%)**	**81.1**	**84.0**	**84.9**	**46.0**	**46.1**

Liquid Limit (LL)	**83**
Plastic Limit (PL)	**46**
Plasticity Index (PI)	**37**
USCS	**MH**

Remarks:





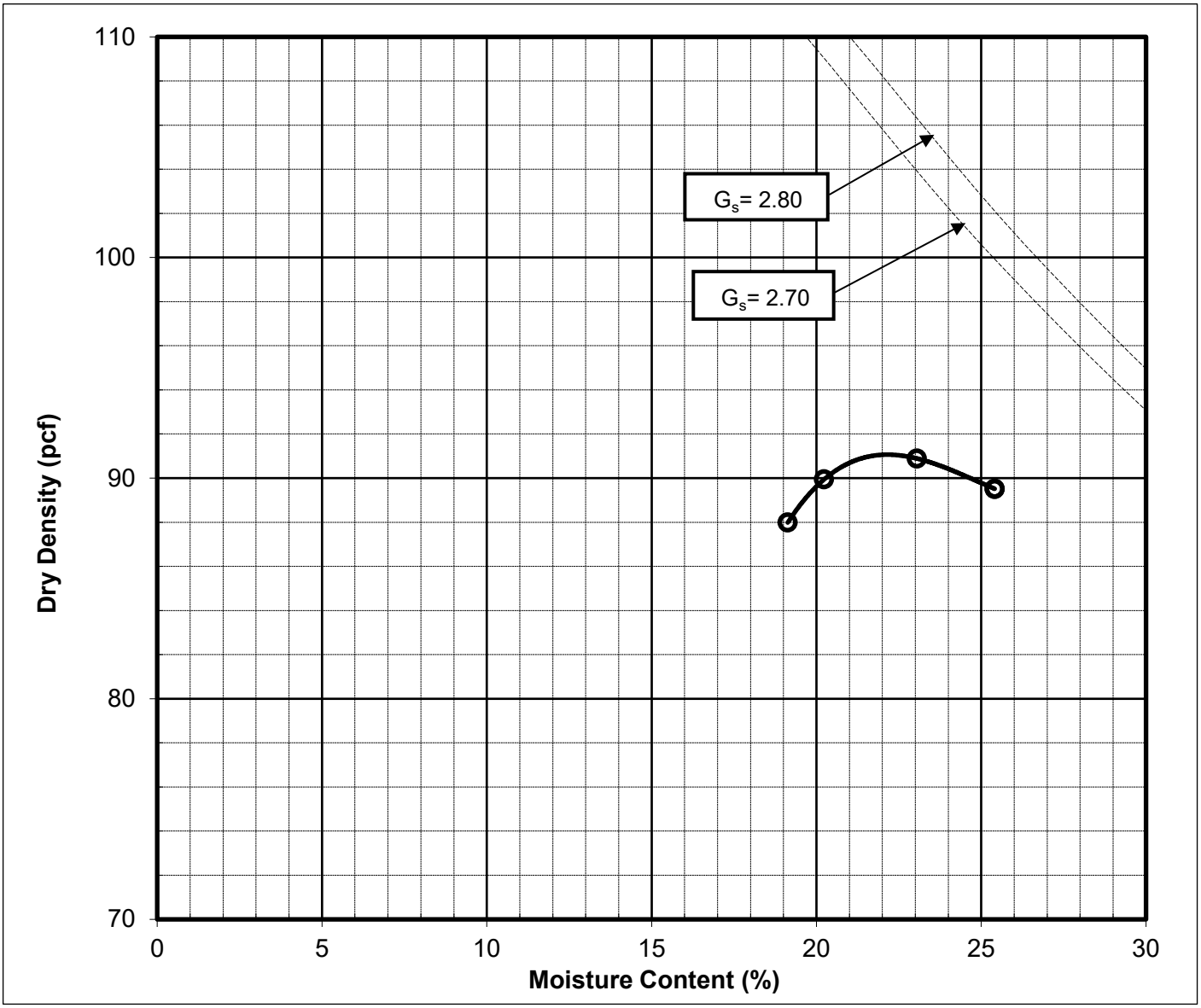
Compaction Characteristics of Soils Using Modified Effort

ASTM D1557

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring Number:	H-1	*Date:*	05/06/24
Sample Number:	B-1		
Depth (ft) :	0-5		
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Mold size (in)	4"
Procedure	B
Weight Retained on:	7.7
Remarks:	

Maximum Dry Density (pcf)	**91.1**
Optimum Moisture Content (%)	**11.7**
Corrected Maximum Dry Density (pcf)	**94.1**
Corrected Optimum Moisture Content (%)	**10.8**



EXPANSION INDEX

ASTM D4829

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-1	*Date:*	5/6/2024
Sample No.:	B-1		
Depth (ft):	0-5	*Apparatus No.:*	1
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Initial Specimen Info		
Wt. of wet soil + cont.	184.51	g
Wt. of dry soil + cont.	156.08	g
Wt. of container	11.29	g
Wt. of water	28.43	g
Wt. of dry soil	144.79	g
Moisture Content	**19.6**	**%**

Final Specimen Info		
Wt. of wet soil + cont.	594.84	g
Wt. of dry soil + cont.	472.51	g
Wt. of container	206.54	g
Wt. of water	122.33	g
Wt. of dry soil	265.97	g
Moisture Content	**46.0**	**%**

Wt. of wet soil + ring	528.85	g
Wt. of ring	206.54	g
Wt. of wet soil	322.31	g
Wet density of soil	98.8	pcf
Dry density of soil	82.6	pcf
Specific gravity of soil	2.68	-
Saturation	**51.4**	**%**

Date & Time	**Elapsed Time (min)**	**Dial Reading**	**Δh, Expansion**
5/17/2024 10:25	0	0	0
5/17/2024 10:35	10	0.0000	0
Add Distilled Water to Sample			
5/18/2024 10:25	1440	0.0909	0.0909

Expansion Index = **91** **High**

EXPANSION INDEX

ASTM D4829

Client:	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	GA
Project No.:	24059-01	*Checked by:*	KL
Boring No.:	H-4	*Date:*	5/6/2024
Sample No.:	B-1		
Depth (ft):	0-5	*Apparatus No.:*	2
Soil Description:	Olive, Sandy Elastic Silt (MH)		

Initial Specimen Info		
Wt. of wet soil + cont.	163.33	g
Wt. of dry soil + cont.	138.46	g
Wt. of container	23.29	g
Wt. of water	24.87	g
Wt. of dry soil	115.17	g
Moisture Content	**21.6**	**%**

Final Specimen Info		
Wt. of wet soil + cont.	582.98	g
Wt. of dry soil + cont.	45395.00	g
Wt. of container	206.33	g
Wt. of water	-44812.02	g
Wt. of dry soil	45188.67	g
Moisture Content	**-99.2**	**%**

Wt. of wet soil + ring	511.95	g
Wt. of ring	206.33	g
Wt. of wet soil	305.62	g
Wet density of soil	95.2	pcf
Dry density of soil	78.3	pcf
Specific gravity of soil	2.68	-
Saturation	**50.9**	**%**

Date & Time	**Elapsed Time (min)**	**Dial Reading**	**Δh, Expansion**
5/17/2024 11:00	0	0	0
5/17/2024 11:10	10	0.0000	0
Add Distilled Water to Sample			
5/18/2024 11:00	1440	0.1036	0.1036

Expansion Index = **104** **High**

DIRECT SHEAR TEST

ASTM D3080

HUSHMAND ASSOCIATES, INC.
Geotechnical and Earthquake Engineers

HAI Project No.: SAG-24-018-2

Client: SA Geotechnical, Inc
Project Name: 95 Argonaut
Project Number: 24059-01
Boring No.: H-1
Sample No.: D-2
Sample Type: Undisturbed Ring
Depth (ft): 5
Soil Description: Olive Gray, Elastic Silt with Sand (MH)

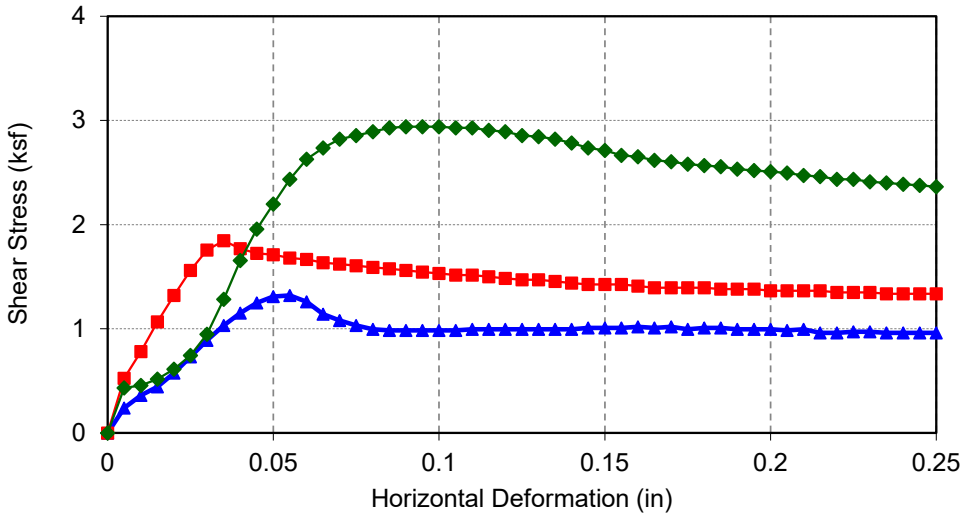
Tested by: GA
Checked by: KL
Date: 5/6/2024

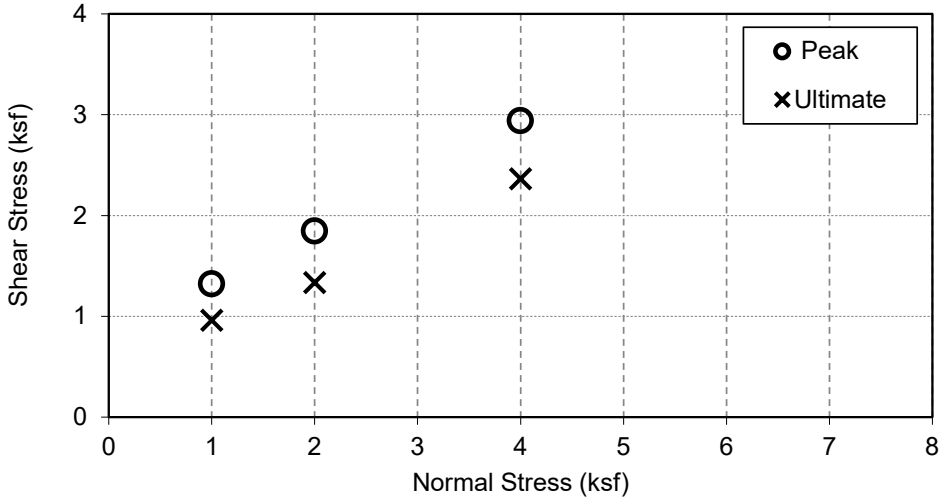
Type of test: **Consolidated, Drained**

Test No.	1	2	3
Symbol	▲	■	◆
Normal Stress (ksf)	**1**	**2**	**4**
Deformation Rate (in/min)	**0.002**	**0.002**	**0.002**

Peak Shear Stress (ksf)	O	**1.32**	**1.85**	**2.94**
Shear Stress @ End of Test (ksf)	X	**0.96**	**1.34**	**2.36**

Initial Height of Sample (in)	1.000	1.000	1.000
Height of Sample before Shear (in)	0.9998	0.9936	0.9883
Diameter of Sample (in)	2.416	2.416	2.416
Initial Moisture Content (%)	**43.8**	**43.8**	**43.8**
Final Moisture Content (%)	**54.3**	**52.5**	**50.4**
Dry Density (pcf)	**71.1**	**71.4**	**72.3**





HUSHMAND ASSOCIATES, INC.
Geotechnical and Earthquake Engineers

DIRECT SHEAR TEST

ASTM D3080

HAI Project No.: SAG-24-018-2

Tested by: GA

Checked by: KL

Date: 5/6/2024

Client: SA Geotechnical, Inc

Project Name: 95 Argonaut

Project Number: 24059-01

Boring No.: H-4

Sample No.: D-1

Sample Type: Undisturbed Ring

Depth (ft): 2.5

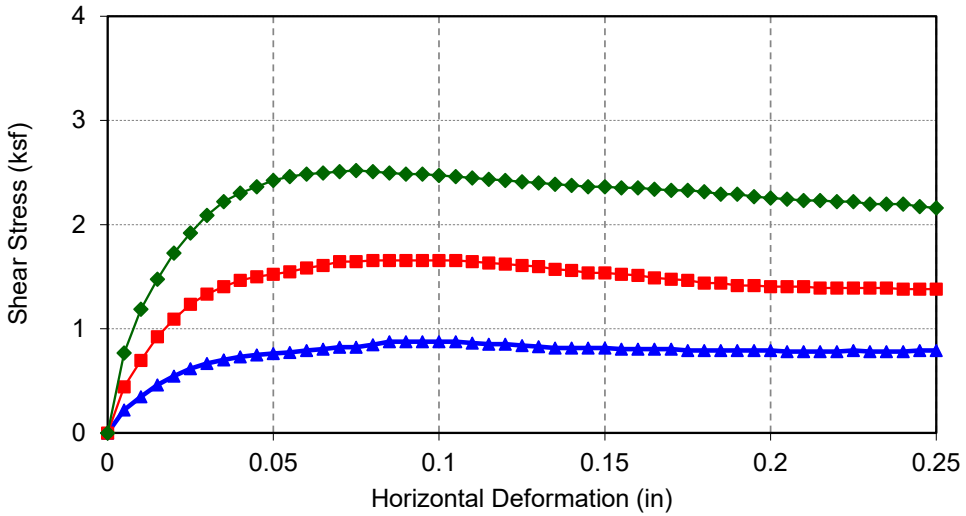
Soil Description: Olive Gray, Elastic Silt with Sand (MH)

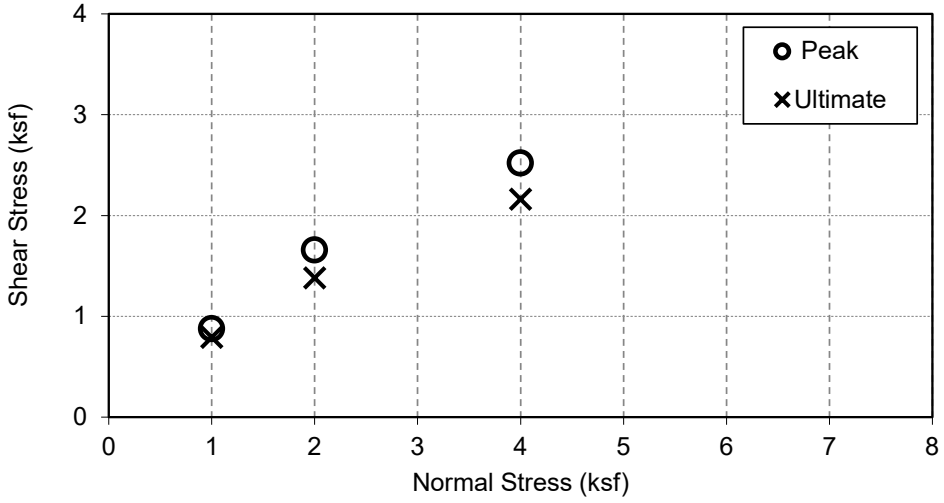
Type of test: **Consolidated, Drained**

Test No.	1	2	3
Symbol	▲	■	◆
Normal Stress (ksf)	**1**	**2**	**4**
Deformation Rate (in/min)	**0.002**	**0.002**	**0.002**

Peak Shear Stress (ksf)	**O**	**0.88**	**1.66**	**2.52**
Shear Stress @ End of Test (ksf)	**X**	**0.79**	**1.38**	**2.16**

Initial Height of Sample (in)	1.000	1.000	1.000
Height of Sample before Shear (in)	1.0004	0.9954	0.9909
Diameter of Sample (in)	2.416	2.416	2.416
Initial Moisture Content (%)	**56.4**	**56.4**	**56.4**
Final Moisture Content (%)	**68.8**	**61.8**	**52.6**
Dry Density (pcf)	**61.0**	**62.8**	**65.8**





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-1		
Type of Sample:	Undisturbed ring		
Depth (ft):	2.5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
112.80	108.29	66.73

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.900
Height of Solids	H_s	(in)	0.324	0.324
Height of Water	H_w	(in)	0.613	0.553
Height of Air	H_a	(in)	0.063	0.023
Dry Density		**(pcf)**	**55.4**	**68.4**
Water Content		**(%)**	**69.0**	**62.3**
Saturation		**(%)**	**90.7**	**96.1**

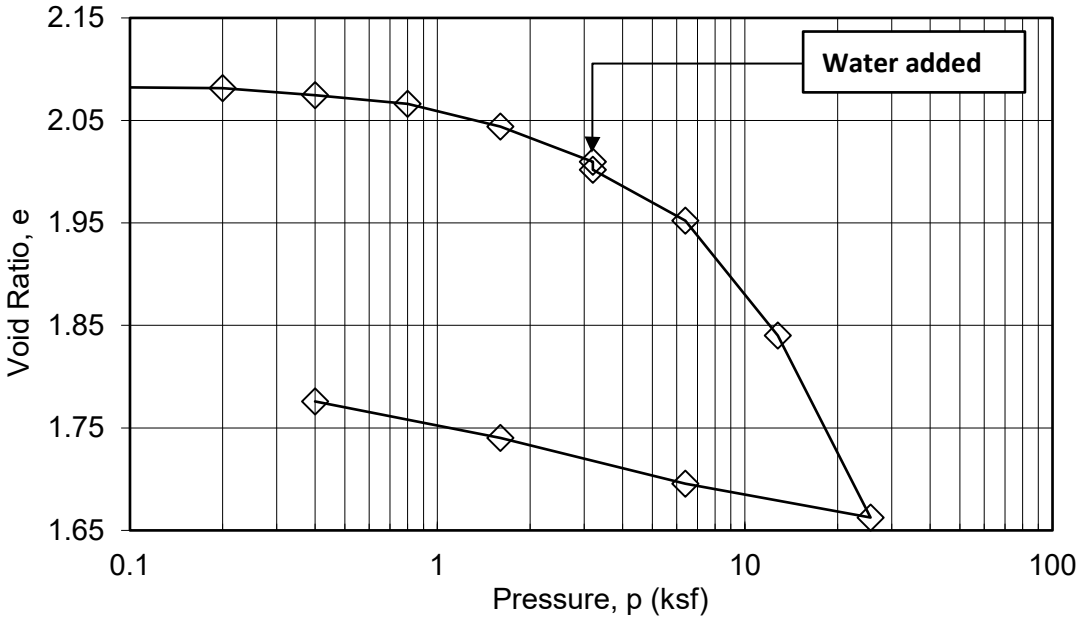
* Saturation is calculated based on Gs= 2.74

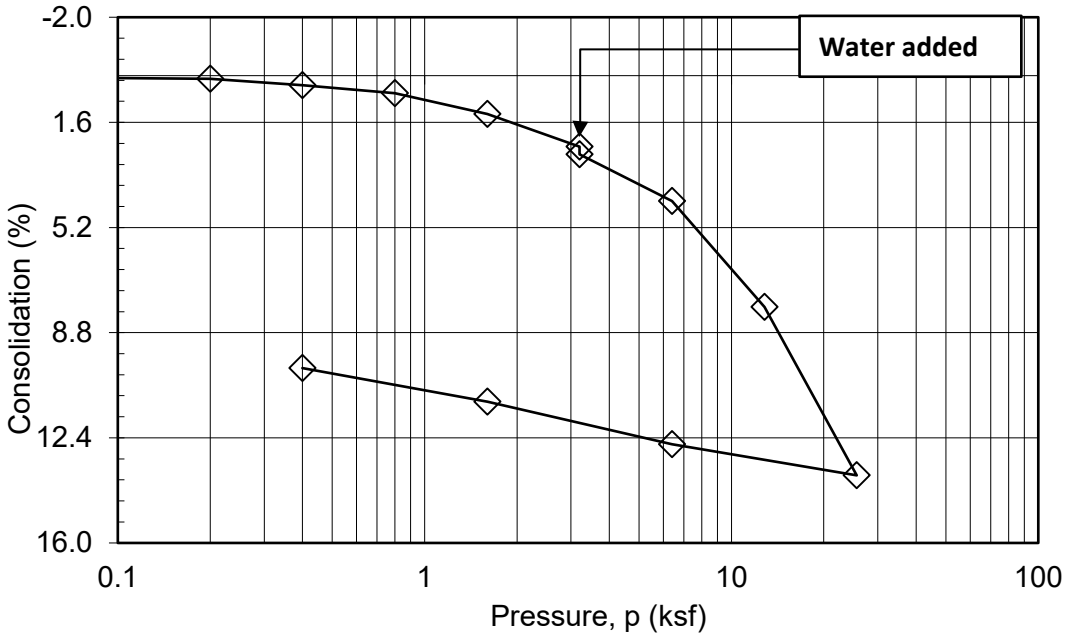
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.676	2.085	0			
0.2	0.0011	0.9990	0.675	2.081	0.1	1.7E-02	5.5E-03	
0.4	0.0033	0.9967	0.673	2.075	0.3	3.5E-02	1.1E-02	
0.8	0.0060	0.9940	0.670	2.066	0.6	2.1E-02	6.8E-03	
1.6	0.0132	0.9869	0.663	2.044	1.3	2.8E-02	9.1E-03	
3.2	0.0244	0.9757	0.651	2.010	2.4	2.2E-02	7.2E-03	
3.2	0.0269	0.9731	0.649	2.002	2.7	Water Added		
6.4	0.0430	0.9571	0.633	1.952	4.3	1.5E-02	5.2E-03	
12.8	0.0793	0.9208	0.597	1.840	7.9	1.7E-02	6.2E-03	
25.6	0.1369	0.8632	0.539	1.663	13.7	1.4E-02	5.2E-03	
6.4	0.1262	0.8739	0.550	1.696	12.6	Unloaded		
1.6	0.1117	0.8884	0.564	1.740	11.2			
0.4	0.1001	0.8999	0.576	1.776	10.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-1		
Type of Sample:	Undisturbed ring		
Depth (ft):	2.5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-5		
Type of Sample:	Undisturbed ring		
Depth (ft):	15		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
117.41	112.21	70.29

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.915
Height of Solids	H_s	(in)	0.341	0.341
Height of Water	H_w	(in)	0.627	0.558
Height of Air	H_a	(in)	0.031	0.015
Dry Density		**(pcf)**	**58.4**	**69.8**
Water Content		**(%)**	**67.0**	**59.6**
Saturation		**(%)**	**95.2**	**97.3**

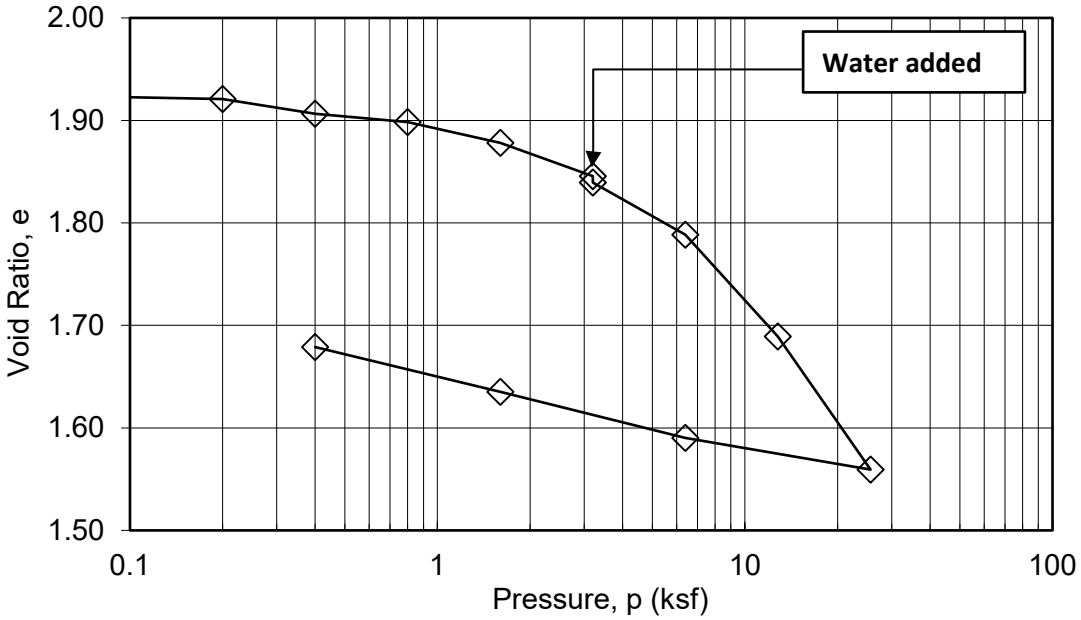
* Saturation is calculated based on Gs= 2.74

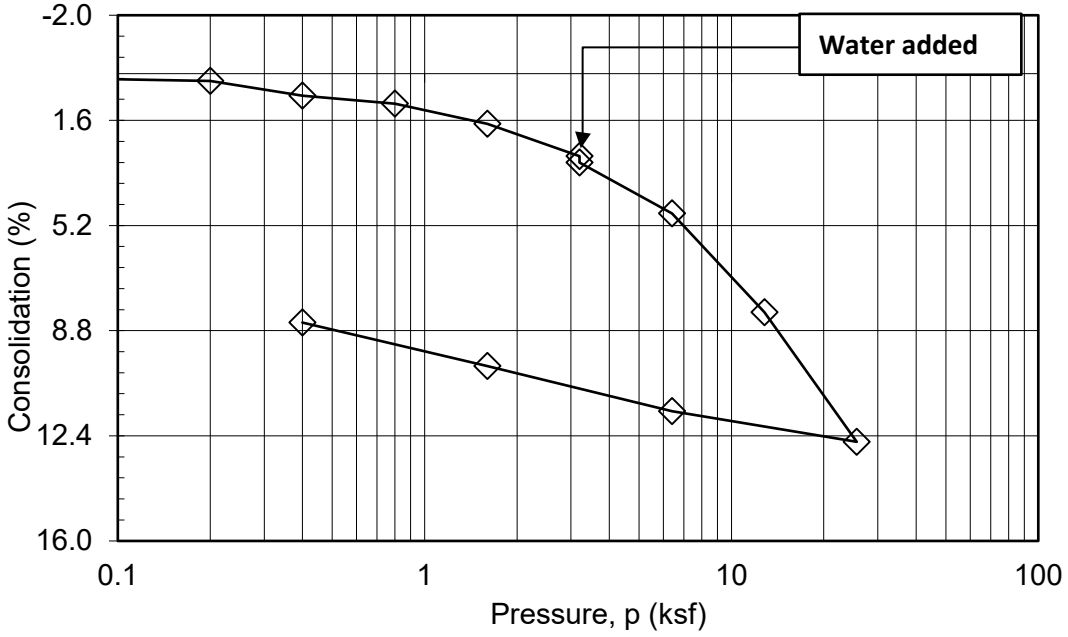
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.659	1.928	0			
0.2	0.0025	0.9975	0.656	1.921	0.3	3.9E-02	1.3E-02	
0.4	0.0075	0.9925	0.651	1.907	0.8	7.2E-02	2.5E-02	
0.8	0.0103	0.9897	0.648	1.898	1.0	2.0E-02	7.1E-03	
1.6	0.0172	0.9828	0.641	1.878	1.7	2.5E-02	8.8E-03	
3.2	0.0283	0.9717	0.630	1.846	2.8	2.0E-02	7.1E-03	
3.2	0.0304	0.9696	0.628	1.839	3.0	Water Added		
6.4	0.0479	0.9522	0.611	1.788	4.8	1.6E-02	5.7E-03	
12.8	0.0818	0.9183	0.577	1.689	8.2	1.6E-02	5.8E-03	
25.6	0.1261	0.8740	0.532	1.559	12.6	1.0E-02	4.0E-03	
6.4	0.1156	0.8845	0.543	1.590	11.6	Unloaded		
1.6	0.1001	0.8999	0.558	1.635	10.0			
0.4	0.0852	0.9148	0.573	1.679	8.5			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-1	*Date:*	05/06/24
Sample No.:	D-5		
Type of Sample:	Undisturbed ring		
Depth (ft):	15		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-3	*Date:*	05/06/24
Sample No.:	D-2		
Type of Sample:	Undisturbed ring		
Depth (ft):	5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
108.17	103.32	58.52

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.900
Height of Solids	H_s	(in)	0.284	0.284
Height of Water	H_w	(in)	0.661	0.596
Height of Air	H_a	(in)	0.055	0.020
Dry Density		**(pcf)**	**48.6**	**60.0**
Water Content		**(%)**	**84.8**	**76.6**
Saturation		**(%)**	**92.3**	**96.8**

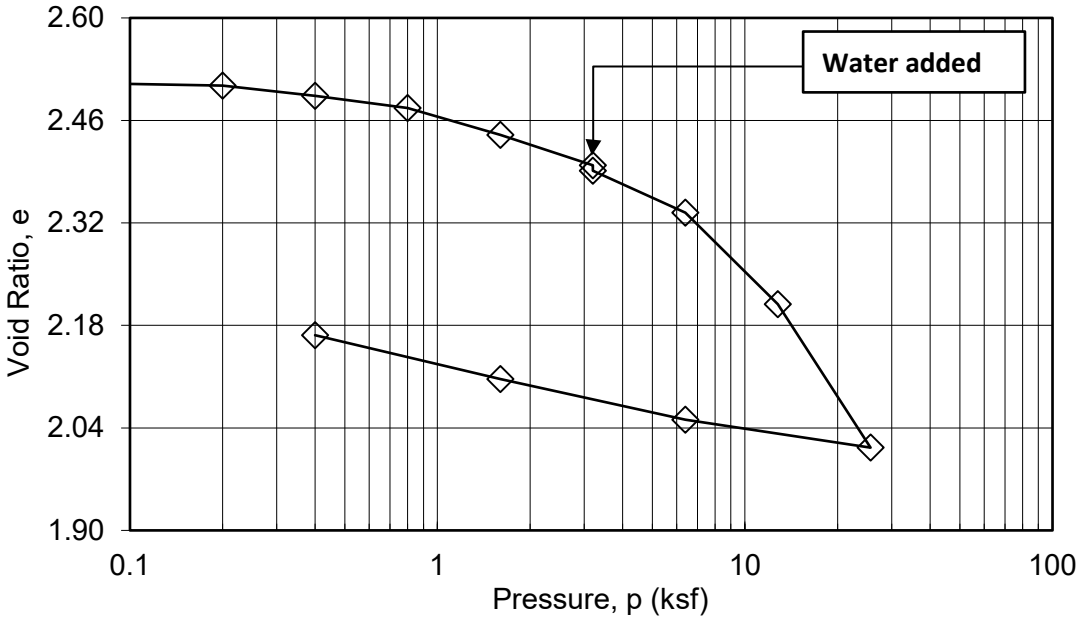
* Saturation is calculated based on Gs= 2.74

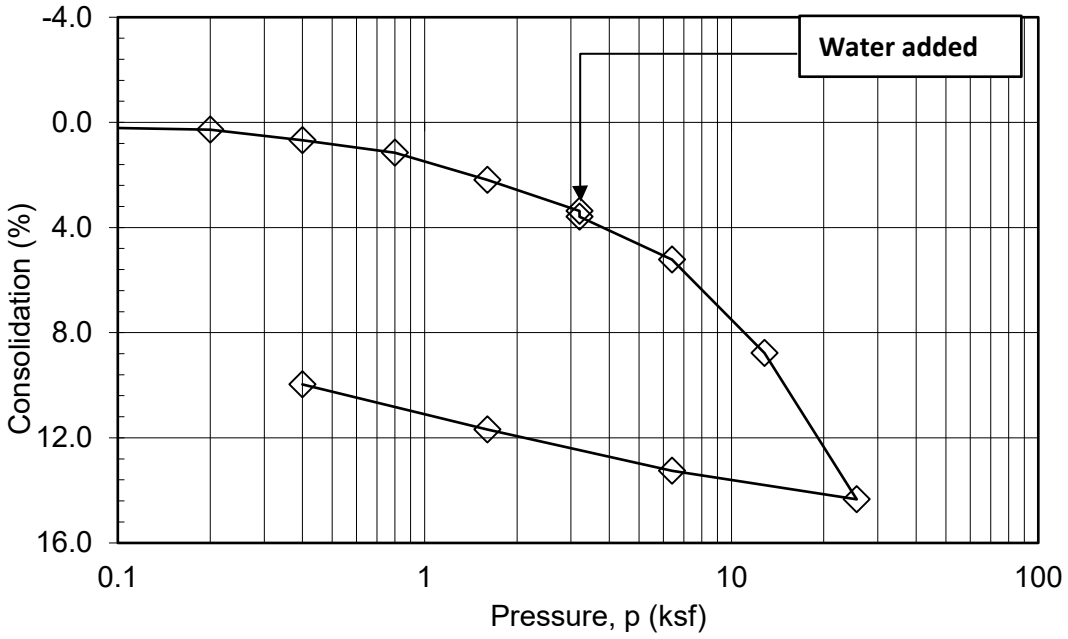
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.716	2.517	0			
0.2	0.0028	0.9972	0.713	2.508	0.3	5.2E-02	1.5E-02	
0.4	0.0068	0.9932	0.709	2.494	0.7	7.0E-02	2.0E-02	
0.8	0.0115	0.9885	0.704	2.477	1.1	4.1E-02	1.2E-02	
1.6	0.0219	0.9781	0.694	2.440	2.2	4.6E-02	1.3E-02	
3.2	0.0338	0.9663	0.682	2.399	3.4	2.6E-02	7.7E-03	
3.2	0.0359	0.9641	0.680	2.391	3.6	Water Added		
6.4	0.0522	0.9479	0.664	2.334	5.2	1.8E-02	5.4E-03	
12.8	0.0878	0.9123	0.628	2.209	8.8	2.0E-02	6.1E-03	
25.6	0.1434	0.8566	0.572	2.013	14.3	1.5E-02	5.1E-03	
6.4	0.1326	0.8675	0.583	2.051	13.3	Unloaded		
1.6	0.1168	0.8832	0.599	2.107	11.7			
0.4	0.0997	0.9003	0.616	2.167	10.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-3	*Date:*	05/06/24
Sample No.:	D-2		
Type of Sample:	Undisturbed ring		
Depth (ft):	5		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	D-4		
Type of Sample:	Undisturbed ring		
Depth (ft):	10		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		

Initial Total Weight	Final Total Weight	Final Dry Weight
(g)	(g)	(g)
111.40	103.94	59.64

			Initial Conditions	Final Conditions
Height	H	(in)	1.000	0.880
Height of Solids	H_s	(in)	0.290	0.290
Height of Water	H_w	(in)	0.689	0.590
Height of Air	H_a	(in)	0.021	0.000
Dry Density		**(pcf)**	**49.5**	**64.0**
Water Content		**(%)**	**86.8**	**74.3**
Saturation		**(%)**	**97.0**	**99.9**

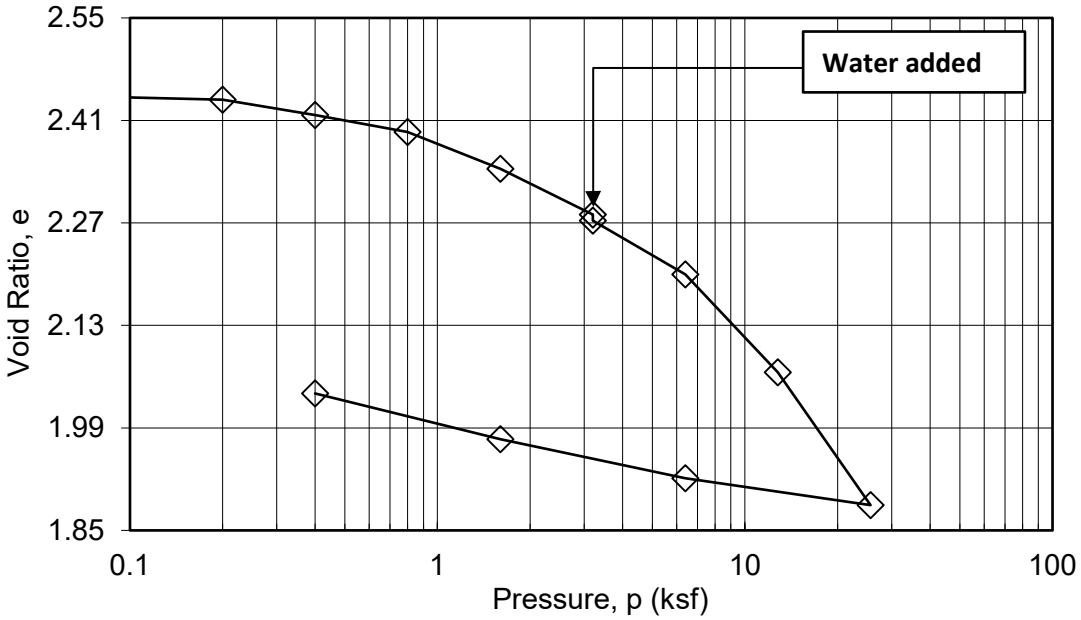
* Saturation is calculated based on Gs= 2.74

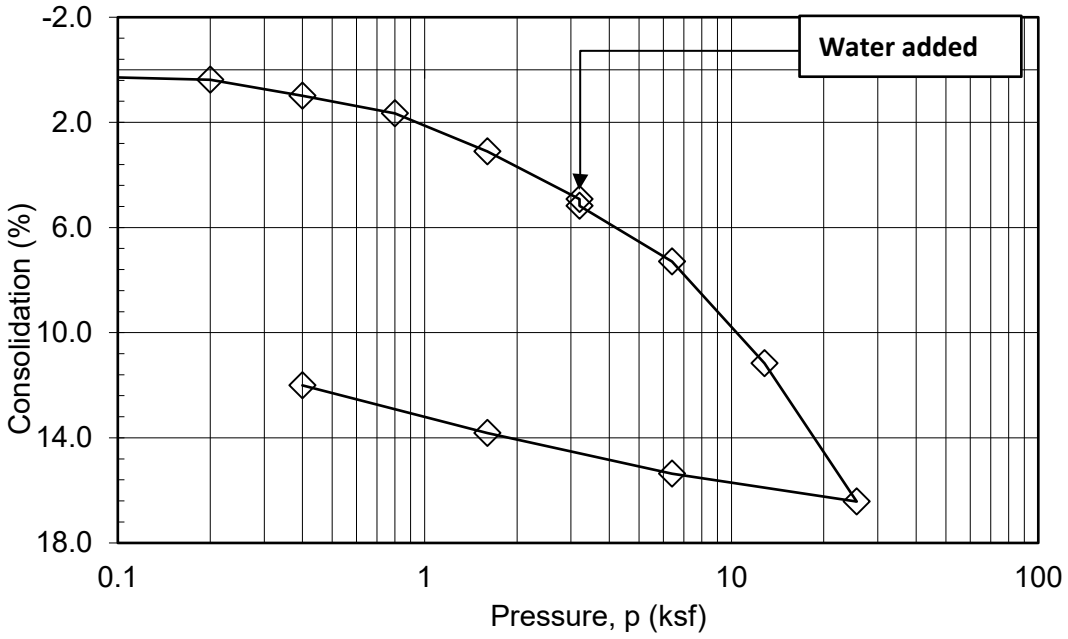
Load (ksf)	**δH (in)**	**H (in)**	**Voids (in)**	**e**	**Consol. (%)**	**a_v (ksf^{-1})**	**M_v (ksf^{-1})**	**Comment**
0.01	-------	1.0000	0.710	2.451	0			
0.2	0.0038	0.9963	0.707	2.438	0.4	6.8E-02	2.0E-02	
0.4	0.0099	0.9901	0.700	2.417	1.0	1.1E-01	3.1E-02	
0.8	0.0166	0.9834	0.694	2.394	1.7	5.8E-02	1.7E-02	
1.6	0.0311	0.9689	0.679	2.344	3.1	6.3E-02	1.9E-02	
3.2	0.0492	0.9508	0.661	2.282	4.9	3.9E-02	1.2E-02	
3.2	0.0517	0.9483	0.659	2.273	5.2	Water Added		
6.4	0.0729	0.9271	0.637	2.200	7.3	2.3E-02	7.1E-03	
12.8	0.1117	0.8883	0.599	2.066	11.2	2.1E-02	6.8E-03	
25.6	0.1643	0.8358	0.546	1.885	16.4	1.4E-02	4.9E-03	
6.4	0.1536	0.8464	0.557	1.921	15.4	Unloaded		
1.6	0.1382	0.8618	0.572	1.974	13.8			
0.4	0.1201	0.8799	0.590	2.037	12.0			

CONSOLIDATION TEST

ASTM D2435

Client :	SA Geotechnical, Inc	*HAI Project No.:*	SAG-24-018-2
Project Name:	95 Argonaut	*Tested by:*	KL
Project Number:	24059-01	*Checked by:*	MV
Boring No.:	H-4	*Date:*	05/06/24
Sample No.:	D-4		
Type of Sample:	Undisturbed ring		
Depth (ft):	10		
Soil Description:	Olive Gray, Elastic Silt with Sand (MH)		





Soil Analysis Lab Results

Client: HAI
Job Name: 95 Argonaut
Client Job Number: SAG-24-018-2 / 24059-01
Project X Job Number: S240515F
May 17, 2024

	Method	ASTM D4327		ASTM D4327	
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-	
	(ft)	**(mg/kg)**	**(wt%)**	**(mg/kg)**	**(wt%)**
H-1 B-1	0-5	768.4	0.0768	156.2	0.0156
H-4 B-1	0-5	713.1	0.0713	82.9	0.0083

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

Note: Sometimes a bad sulfate hit is a contaminated spot. Typical fertilizers are Potassium chloride, ammonium sulfate or ammonium sulfate nitrate (ASN). So this is another reason why testing full corrosion series is good because we then have the data to see if those other ingredients are present meaning the soil sample is just fertilizer-contaminated soil. This can happen often when the soil samples collected are simply surface scoops. This is why it's best to dig in a foot, throw away the top and test the deeper stuff. Dairy farms are also notorious for these items.

If one sample pops up much more corrosive than all others, we would recommend collecting more samples surrounding the problem sample location to determine if the peak is isolated to it. This allows us to conclude it was a contaminated sample and able to declare it an outlier.

Try out our new online forms: SOIL CORROSIVITY & THERMAL RESISTIVITY LAB REQUEST FORM & IN-SITU WENNER 4 PIN QUOTE REQUEST FORM

Appendix D

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

95 Argonaut, Aliso Viejo, CA 92656, USA

Latitude, Longitude: 33.5945973, -117.7242937



Date	4/26/2024, 3:23:29 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.218	MCE_R ground motion. (for 0.2 second period)
S_1	0.438	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.233	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.822	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.013	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.515	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.566	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.218	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.304	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.489	Factored deterministic acceleration value. (0.2 second)
S1RT	0.438	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.468	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.82	Factored deterministic acceleration value. (1.0 second)
PGAd	1.017	Factored deterministic acceleration value. (Peak Ground Acceleration)

Type	Value	Description
PGA_{UH}	0.515	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.934	Mapped value of the risk coefficient at short periods
C_{R1}	0.934	Mapped value of the risk coefficient at a period of 1 s
C_V	1.344	Vertical coefficient

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new USGS Earthquake Hazard Toolbox for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

Input

Edition

Dynamic: Conterminous U.S. 2014 (u…

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

33.5945973

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-117.7242937

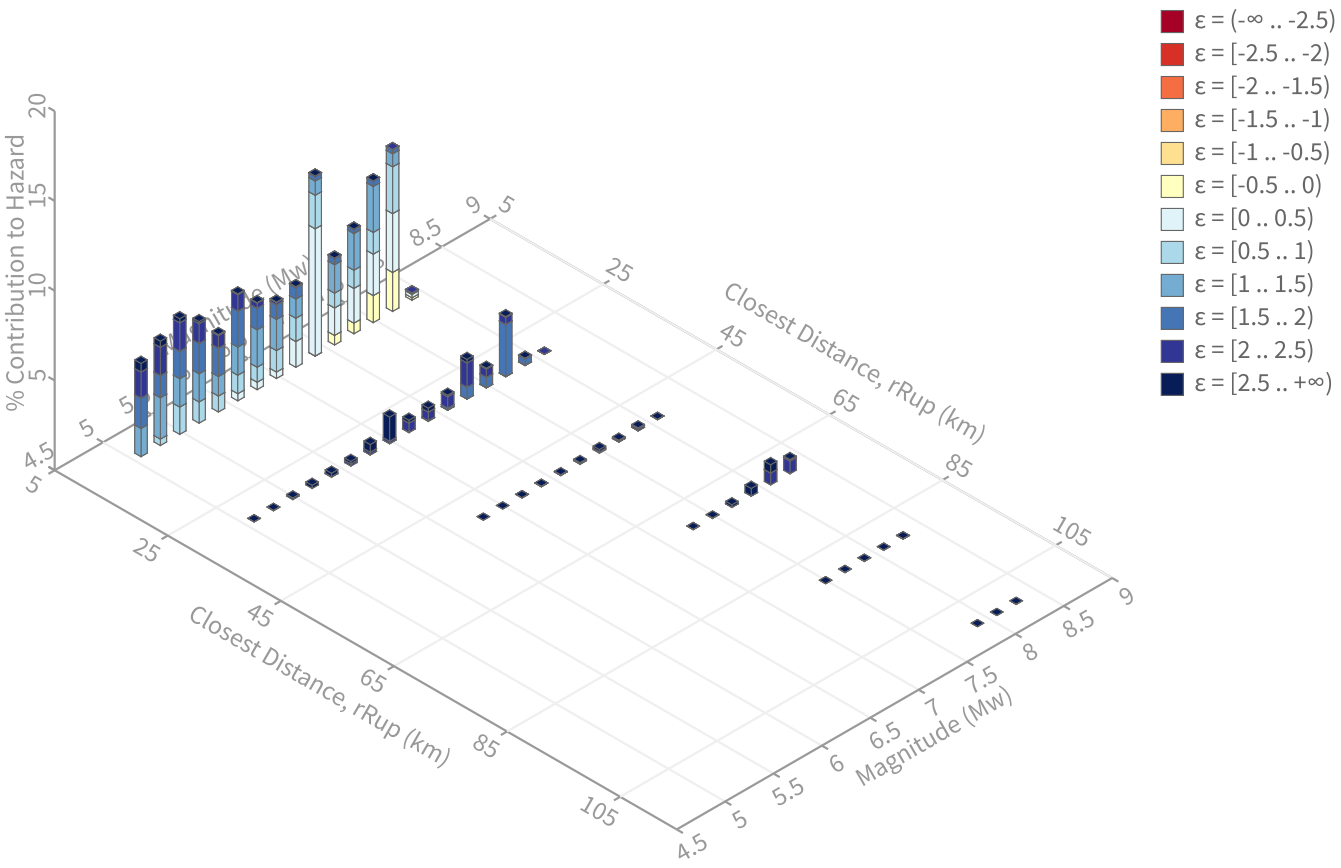
Site Class

259 m/s (Site class D)

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.61392295 g

Recovered targets

Return period: 2880.4914 yrs
Exceedance rate: 0.00034716298 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.07 %

Mean (over all sources)

m: 6.63
r: 12.23 km
ε_0: 1.22 σ

Mode (largest m-r bin)

m: 6.89
r: 4.51 km
ε_0: 0.41 σ
Contribution: 10.02 %

Mode (largest m-r-ε_0 bin)

m: 6.89
r: 3.48 km
ε_0: 0.2 σ
Contribution: 7.08 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM32	System							29.04
San Joaquin Hills [2]		3.26	7.11	0.23	117.713°W	33.600°N	60.23	14.88
Newport-Inglewood (Offshore) [2]		11.85	7.31	1.21	117.806°W	33.513°N	219.82	4.79
Elsinore (Glen Ivy) rev [1]		28.83	7.28	2.11	117.509°W	33.782°N	43.62	2.57
UC33brAvg_FM31	System							25.52
San Joaquin Hills [2]		3.26	7.52	0.18	117.713°W	33.600°N	60.23	9.28
Newport-Inglewood (Offshore) [2]		11.85	7.31	1.21	117.806°W	33.513°N	219.82	5.04
Oceanside alt1 [6]		8.12	7.00	0.62	117.802°W	33.514°N	218.97	3.06
Elsinore (Glen Ivy) rev [1]		28.83	7.26	2.12	117.509°W	33.782°N	43.62	2.52
UC33brAvg_FM31 (opt)	Grid							22.81
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.14
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.14
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.79
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.79
UC33brAvg_FM32 (opt)	Grid							22.63
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.11
PointSourceFinite: -117.724, 33.617		5.63	5.66	1.06	117.724°W	33.617°N	0.00	4.11
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.698		10.89	6.07	1.62	117.724°W	33.698°N	0.00	2.01
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.76
PointSourceFinite: -117.724, 33.662		8.83	5.68	1.55	117.724°W	33.662°N	0.00	1.76

Appendix E

Summary of Slope Stability Analysis

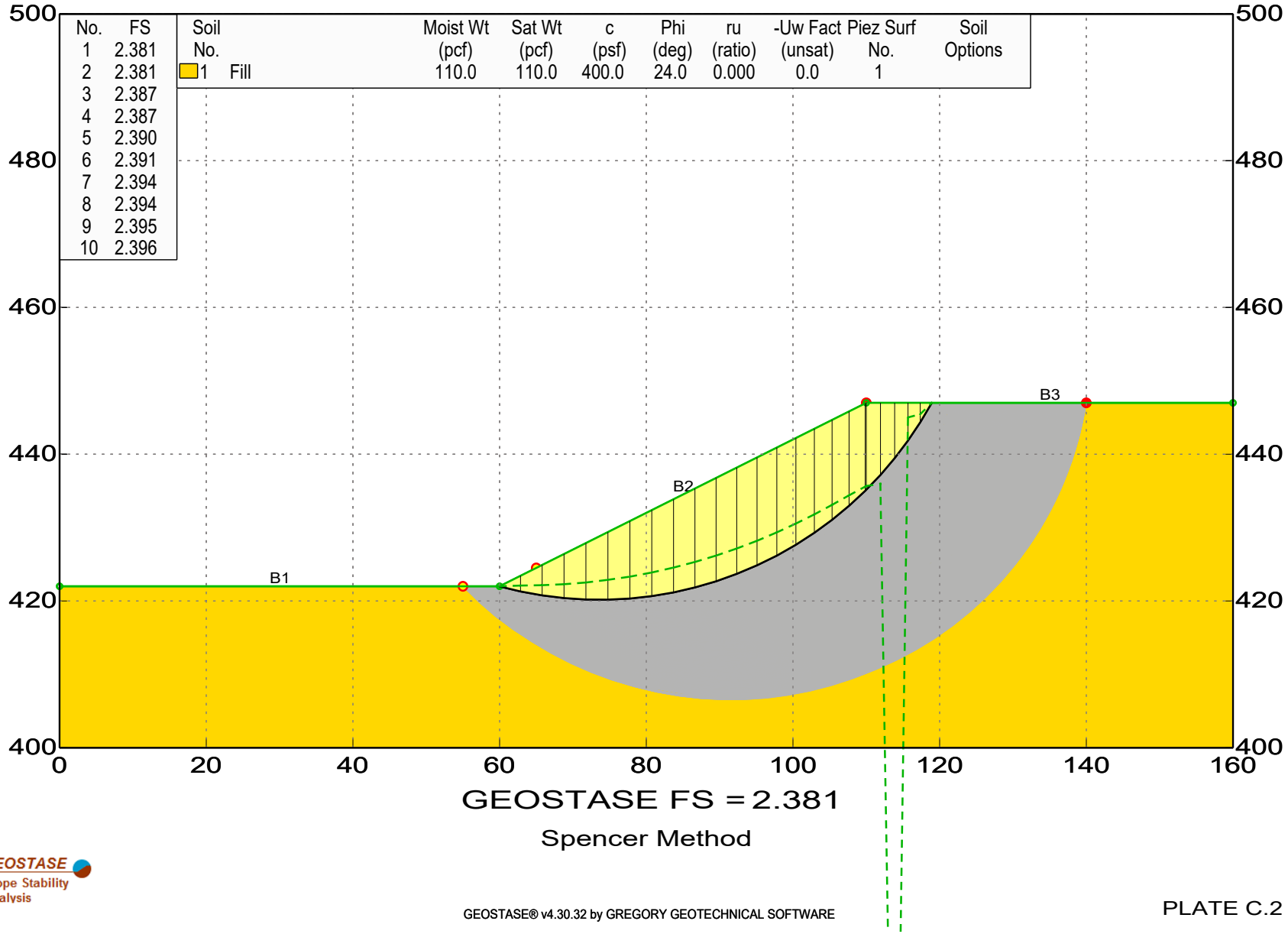
Filename	Description	Factor of Safety (FS)	
		Static	*Pseudostatic*
01, 01p	Global Stability of 25-foot High Fill Slope	2.38	1.46

Project No.: 24059-01

Project Name: Meritage/ 95 Argonaut, Aliso Viejo

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes

SA Geotechnical, Inc\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd



GEOSTASE FS = 2.381

Spencer Method

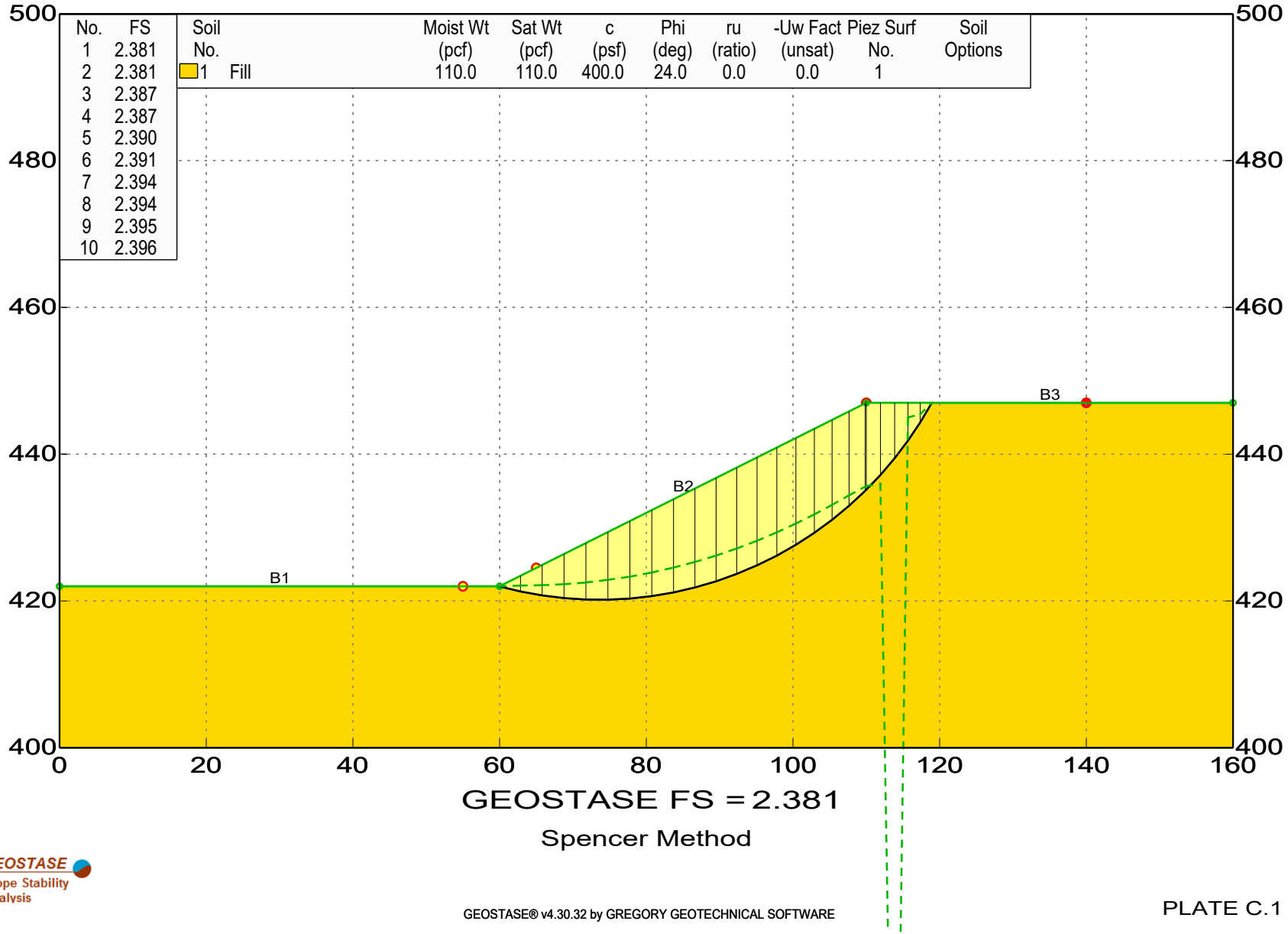
GEOSTASE
Slope Stability Analysis

GEOSTASE® v4.30.32 by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.2

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes

SA Geotechnical, Inc\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd



GEOSTASE FS = 2.381

Spencer Method

GEOSTASE
Slope Stability Analysis

GEOSTASE® v4.30.32 by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D.,P.E.,S.E.,BC.GE **

** Current Version 4.30.32-Double Precision, Sept 2023 **

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****

SLOPE STABILITY ANALYSIS SOFTWARE (2D & 3D)

Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.

(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)

Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads

Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads

Nonlinear Undrained Shear Strength, Curved Strength Envelope,

Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown

2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

****

Analysis Date: 5/ 28/ 2024

Analysis Time:

Analysis By: SA Geotechnical, Inc.

Input File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.gsd

Output File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01.OUT

Unit System: English

PROJECT: 95 Argonaut. Aliso Viejo

DESCRIPTION: Global Stability of 25' High Slopes

PROFILE BOUNDARY DATA

3 Surface Boundaries
3 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	422.000	60.000	422.000	1
2	60.000	422.000	110.000	447.000	1
3	110.000	447.000	160.000	447.000	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 400.000(ft)

SURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD
1	0.000	422.000
2	60.000	422.000
3	110.000	447.000
4	160.000	447.000

SUBSURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD

PROFILE BOUNDARY SLOPES AND ANGLES

BND No.	Slope	Angle(Deg.)
1	0.000	0.000
2	0.500	26.565
3	0.000	0.000

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	(-Uw) Fact.	Water Surface No.	Water Option
1 Fill	110.0	110.0	400.00	24.00	0.000	0.0	1	0

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.0600(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 55.00(ft)
and X = 65.00(ft)

Each Surface ends within a Range Between X = 110.00(ft)
and X = 140.00(ft)

All surfaces are generated left to right for both a left and right sliding slope.

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 400.00(ft)

Specified Maximum Radius = 100000.000(ft)

3.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Constant (1.0)

```
SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS =  1.500
FS tolerance =  0.000001000
Initial estimate of theta(deg) =  15.00
Theta tolerance(radians) =  0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) =  45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance  = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient =  1.00

Specified Tension Crack Water Depth Factor =   0.000

Total Number of Trial Surfaces Attempted = 2000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.


Number of Trial Surfaces with Non-Converged FS = 242

Number of Trial Surfaces With Valid FS = 1758


Percentage of Trial Surfaces With Non-Converged and/or
Non-Valid FS Solutions of the Total Attempted =  12.1 %

Statistical Data On All Valid FS Values:
   FS Max =   7.876   FS Min =   2.381   FS Ave =   2.890
   Standard Deviation =    0.400   Coefficient of Variation =   13.85 %


Critical Surface is Sequence Number     860 of Those Analyzed.


*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****
```

BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 73.583338(ft) ; Y = 471.872496(ft); and Radius = 51.705663(ft)

Circular Trial Failure Surface Generated With 25 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	59.93747	422.00000
2	62.85286	421.29254
3	65.80437	420.75534
4	68.78207	420.39023
5	71.77593	420.19843
6	74.77588	420.18059
7	77.77181	420.33676
8	80.75364	420.66642
9	83.71134	421.16846
10	86.63494	421.84119
11	89.51460	422.68235
12	92.34063	423.68910
13	95.10352	424.85806
14	97.79396	426.18528
15	100.40290	427.66631
16	102.92155	429.29615
17	105.34144	431.06933
18	107.65441	432.97986
19	109.85270	435.02132
20	111.92888	437.18684
21	113.87598	439.46912
22	115.68743	441.86048
23	117.35715	444.35288
24	118.87950	446.93792
25	118.91136	447.00000

Iter. No.	Theta (deg)	FS (Moment)	FS (Force)

	(fx=1.0)			Lambda	Delta FS
1	15.0000	2.446791	2.358132	0.268	0.8865890E-01
2	19.9500	2.277947	2.410070	0.363	0.1321227E+00
3	16.9874	2.389777	2.378405	0.305	0.1137135E-01
4	17.2227	2.382173	2.380855	0.310	0.1318158E-02
5	17.2535	2.381161	2.381176	0.311	0.1509128E-04
6	17.2532	2.381173	2.381173	0.311	0.2018040E-07

Factor Of Safety For The Preceding Specified Surface = 2.381
Theta (fx = 1.0) = 17.25 Deg Lambda = 0.311

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000 (0.00% Filled)

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 11.199(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)
1	60.00	422.00	1.000+	14.21	1.000	17.25	4.2
2	62.85	422.10	0.376	846.01	1.000	17.25	250.9
3	65.80	422.15	0.336	1938.72	1.000	17.25	575.0
4	68.78	422.29	0.316	3153.82	1.000	17.25	935.4
5	71.78	422.53	0.303	4386.02	1.000	17.25	1300.9
6	74.78	422.87	0.292	5547.84	1.000	17.25	1645.5
7	77.77	423.32	0.283	6568.74	1.000	17.25	1948.3
8	80.75	423.88	0.275	7394.31	1.000	17.25	2193.1
9	83.71	424.55	0.266	7985.59	1.000	17.25	2368.5
10	86.63	425.32	0.258	8318.33	1.000	17.25	2467.2
11	89.51	426.18	0.249	8382.18	1.000	17.25	2486.1
12	92.34	427.15	0.239	8179.80	1.000	17.25	2426.1
13	95.10	428.20	0.227	7725.88	1.000	17.25	2291.5
14	97.79	429.33	0.214	7045.96	1.000	17.25	2089.8
15	100.40	430.54	0.198	6175.20	1.000	17.25	1831.5
16	102.92	431.81	0.177	5156.95	1.000	17.25	1529.5
17	105.34	433.11	0.150	4041.22	1.000	17.25	1198.6
18	107.65	434.41	0.111	2883.00	1.000	17.25	855.1
19	109.85	435.58	0.047	1740.49	1.000	17.25	516.2
20	110.00	435.65	0.040	1659.55	1.000	17.25	492.2
21	111.93	435.96	0.000-	735.94	1.000	17.25	218.3
22	113.88	319.35	0.000-	12.72	1.000	17.25	3.8
23	115.69	445.03	0.616	-377.52	1.000	17.25	-112.0
24	117.36	445.45	0.413	-395.07	1.000	17.25	-117.2
25	118.88	446.96	0.419	-13.96	1.000	17.25	-4.1

26	118.91	447.00	0.000	0.00	1.000	17.25	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 26 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	0.06	0.01	59.97	421.99	422.00	-13.64	0.00	0.06
2	2.85	1.07	61.43	421.64	422.71	-13.64	26.57	2.94
3	2.95	3.14	64.33	421.02	424.16	-10.32	26.57	3.00
4	2.98	5.07	67.29	420.57	425.65	-6.99	26.57	3.00
5	2.99	6.85	70.28	420.29	427.14	-3.67	26.57	3.00
6	3.00	8.45	73.28	420.19	428.64	-0.34	26.57	3.00
7	3.00	9.88	76.27	420.26	430.14	2.98	26.57	3.00
8	2.98	11.13	79.26	420.50	431.63	6.31	26.57	3.00
9	2.96	12.20	82.23	420.92	433.12	9.63	26.57	3.00
10	2.92	13.08	85.17	421.50	434.59	12.96	26.57	3.00
11	2.88	13.78	88.07	422.26	436.04	16.28	26.57	3.00
12	2.83	14.28	90.93	423.19	437.46	19.61	26.57	3.00
13	2.76	14.59	93.72	424.27	438.86	22.93	26.57	3.00
14	2.69	14.70	96.45	425.52	440.22	26.26	26.57	3.00
15	2.61	14.62	99.10	426.93	441.55	29.58	26.57	3.00
16	2.52	14.35	101.66	428.48	442.83	32.91	26.57	3.00
17	2.42	13.88	104.13	430.18	444.07	36.23	26.57	3.00
18	2.31	13.22	106.50	432.02	445.25	39.56	26.57	3.00
19	2.20	12.38	108.75	434.00	446.38	42.88	26.57	3.00
20	0.15	11.87	109.93	435.10	446.96	46.21	26.57	0.21
21	1.93	10.82	110.96	436.18	447.00	46.21	0.00	2.79
22	1.95	8.67	112.90	438.33	447.00	49.53	0.00	3.00
23	1.81	6.34	114.78	440.66	447.00	52.86	0.00	3.00
24	1.67	3.89	116.52	443.11	447.00	56.18	0.00	3.00
25	1.52	1.35	118.12	445.65	447.00	59.51	0.00	3.00

26	0.03	0.03	118.90	446.97	447.00	62.83	0.00	0.07

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	59.937469	422.000000
2	60.000000	421.984826
3	62.852858	421.292536
4	65.804370	420.755344
5	68.782070	420.390233
6	71.775932	420.198432
7	74.775879	420.180587
8	77.771811	420.336758
9	80.753644	420.666419
10	83.711338	421.168461
11	86.634937	421.841192
12	89.514599	422.682350
13	92.340630	423.689101
14	95.103517	424.858057
15	97.793958	426.185283
16	100.402896	427.666310
17	102.921548	429.296153
18	105.341437	431.069325
19	107.654415	432.979858
20	109.852695	435.021318
21	110.000000	435.174961
22	111.928879	437.186835
23	113.875975	439.469118
24	115.687431	441.860483
25	117.357147	444.352881
26	118.879503	446.937922
27	118.911365	447.000000

Table 3 - Force and Pore Pressure Data On The 26 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	-Uw (psf)	Earthquake Force Horiz (lbs)	Earthquake Force Vert (lbs)	Distributed Load (psf)
1	0.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
2	337.2	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
3	1019.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
4	1661.9	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
5	2254.3	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
6	2787.9	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
7	3255.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
8	3650.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
9	3968.8	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
10	4207.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
11	4363.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
12	4438.5	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
13	4433.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
14	4351.2	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
15	4196.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
16	3975.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
17	3695.5	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
18	3364.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
19	2992.7	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
20	192.3	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
21	2295.6	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
22	1857.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
23	1262.4	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
24	715.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
25	226.8	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00
26	0.1	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 65504.32(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 65504.32(lbs)

TOTAL AREA OF SLIDING MASS = 595.49(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 26 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	400.00	24.00	
2	1	400.00	24.00	
3	1	400.00	24.00	
4	1	400.00	24.00	
5	1	400.00	24.00	
6	1	400.00	24.00	
7	1	400.00	24.00	
8	1	400.00	24.00	
9	1	400.00	24.00	
10	1	400.00	24.00	
11	1	400.00	24.00	
12	1	400.00	24.00	
13	1	400.00	24.00	
14	1	400.00	24.00	
15	1	400.00	24.00	
16	1	400.00	24.00	
17	1	400.00	24.00	
18	1	400.00	24.00	
19	1	400.00	24.00	
20	1	400.00	24.00	
21	1	400.00	24.00	
22	1	400.00	24.00	
23	1	400.00	24.00	
24	1	400.00	24.00	
25	1	400.00	24.00	
26	1	400.00	24.00	

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH

N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
S = SHANSEP UNDRAINED SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-13.64	59.97	0.06	114.19	0.83	136.820
2	-13.64	61.43	2.94	257.11	118.20	2.175
3	-10.32	64.33	3.00	502.93	345.44	1.456
4	-6.99	67.29	3.00	716.17	558.12	1.283
5	-3.67	70.28	3.00	896.54	752.97	1.191
6	-0.34	73.28	3.00	1046.36	929.33	1.126
7	2.98	76.27	3.00	1167.54	1086.61	1.074
8	6.31	79.26	3.00	1261.74	1224.28	1.031
9	9.63	82.23	3.00	1330.42	1341.87	0.991
10	12.96	85.17	3.00	1374.94	1438.99	0.955
11	16.28	88.07	3.00	1396.55	1515.32	0.922
12	19.61	90.93	3.00	1396.49	1570.59	0.889
13	22.93	93.72	3.00	1375.97	1604.62	0.858
14	26.26	96.45	3.00	1336.22	1617.30	0.826
15	29.58	99.10	3.00	1278.52	1608.58	0.795
16	32.91	101.66	3.00	1204.17	1578.49	0.763
17	36.23	104.13	3.00	1114.58	1527.13	0.730
18	39.56	106.50	3.00	1011.23	1454.68	0.695
19	42.88	108.75	3.00	895.70	1361.38	0.658
20	46.21	109.93	0.21	809.17	1305.15	0.620
21	46.21	110.96	2.79	730.42	1190.10	0.614
22	49.53	112.90	3.00	530.57	953.92	0.556
23	52.86	114.78	3.00	329.81	696.87	0.473
24	56.18	116.52	3.00	136.34	428.26	0.318

25	59.51	118.12	3.00	-47.05	149.01	-0.316
26	62.83	118.90	0.07	-142.16	3.41	-41.635

TABLE 5A - Total Base Force Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-13.64	59.97	0.06	7.35	0.05	140.790
2	-13.64	61.43	2.94	754.77	337.20	2.238
3	-10.32	64.33	3.00	1508.80	1019.57	1.480
4	-6.99	67.29	3.00	2148.50	1661.91	1.293
5	-3.67	70.28	3.00	2689.62	2254.28	1.193
6	-0.34	73.28	3.00	3139.07	2787.94	1.126
7	2.98	76.27	3.00	3502.62	3255.40	1.076
8	6.31	79.26	3.00	3785.22	3650.58	1.037
9	9.63	82.23	3.00	3991.27	3968.84	1.006
10	12.96	85.17	3.00	4124.81	4207.03	0.980
11	16.28	88.07	3.00	4189.65	4363.60	0.960
12	19.61	90.93	3.00	4189.46	4438.53	0.944
13	22.93	93.72	3.00	4127.90	4433.38	0.931
14	26.26	96.45	3.00	4008.67	4351.24	0.921
15	29.58	99.10	3.00	3835.55	4196.67	0.914
16	32.91	101.66	3.00	3612.52	3975.66	0.909
17	36.23	104.13	3.00	3343.75	3695.49	0.905
18	39.56	106.50	3.00	3033.68	3364.64	0.902
19	42.88	108.75	3.00	2687.10	2992.70	0.898
20	46.21	109.93	0.21	172.23	192.26	0.896
21	46.21	110.96	2.79	2035.79	2295.56	0.887
22	49.53	112.90	3.00	1591.72	1857.38	0.857
23	52.86	114.78	3.00	989.42	1262.35	0.784
24	56.18	116.52	3.00	409.02	715.08	0.572
25	59.51	118.12	3.00	-141.15	226.84	-0.622
26	62.83	118.90	0.07	-9.92	0.11	-91.181

TABLE 6 - Effective and Base Shear Stress Data on the 26 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-13.64	59.97	0.06	114.19	450.84	189.33
2	-13.64	61.43	2.94	257.11	514.47	216.06
3	-10.32	64.33	3.00	502.93	623.92	262.02
4	-6.99	67.29	3.00	716.17	718.86	301.89
5	-3.67	70.28	3.00	896.54	799.17	335.62
6	-0.34	73.28	3.00	1046.36	865.87	363.63
7	2.98	76.27	3.00	1167.54	919.82	386.29
8	6.31	79.26	3.00	1261.74	961.76	403.90
9	9.63	82.23	3.00	1330.42	992.34	416.75
10	12.96	85.17	3.00	1374.94	1012.16	425.07
11	16.28	88.07	3.00	1396.55	1021.78	429.11
12	19.61	90.93	3.00	1396.49	1021.76	429.10
13	22.93	93.72	3.00	1375.97	1012.62	425.26
14	26.26	96.45	3.00	1336.22	994.92	417.83
15	29.58	99.10	3.00	1278.52	969.23	407.04
16	32.91	101.66	3.00	1204.17	936.13	393.14
17	36.23	104.13	3.00	1114.58	896.24	376.39
18	39.56	106.50	3.00	1011.23	850.23	357.06
19	42.88	108.75	3.00	895.70	798.79	335.46
20	46.21	109.93	0.21	809.17	760.27	319.28
21	46.21	110.96	2.79	730.42	725.20	304.56
22	49.53	112.90	3.00	530.57	636.23	267.19
23	52.86	114.78	3.00	329.81	546.84	229.65
24	56.18	116.52	3.00	136.34	460.70	193.48
25	59.51	118.12	3.00	-47.05	379.05	159.19
26	62.83	118.90	0.07	-142.16	336.71	141.40

TABLE 6A - Effective and Base Shear Force Data on the 26 Slices

Slice	Alpha	X-Coord.	Base	Effective	Available	Mobilized

No. *	(deg)	Slice Cntr (ft)	Leng. (ft)	Normal Force (lbs)	Shear Force (lbs)	Shear Force (lbs)
1	-13.64	59.97	0.06	7.35	29.01	12.18
2	-13.64	61.43	2.94	754.77	1510.31	634.27
3	-10.32	64.33	3.00	1508.80	1871.76	786.07
4	-6.99	67.29	3.00	2148.50	2156.57	905.68
5	-3.67	70.28	3.00	2689.62	2397.50	1006.86
6	-0.34	73.28	3.00	3139.07	2597.60	1090.89
7	2.98	76.27	3.00	3502.62	2759.47	1158.87
8	6.31	79.26	3.00	3785.22	2885.29	1211.71
9	9.63	82.23	3.00	3991.27	2977.03	1250.24
10	12.96	85.17	3.00	4124.81	3036.48	1275.21
11	16.28	88.07	3.00	4189.65	3065.35	1287.33
12	19.61	90.93	3.00	4189.46	3065.27	1287.29
13	22.93	93.72	3.00	4127.90	3037.86	1275.78
14	26.26	96.45	3.00	4008.67	2984.77	1253.49
15	29.58	99.10	3.00	3835.55	2907.70	1221.12
16	32.91	101.66	3.00	3612.52	2808.40	1179.42
17	36.23	104.13	3.00	3343.75	2688.73	1129.16
18	39.56	106.50	3.00	3033.68	2550.68	1071.19
19	42.88	108.75	3.00	2687.10	2396.38	1006.38
20	46.21	109.93	0.21	172.23	161.82	67.96
21	46.21	110.96	2.79	2035.79	2021.25	848.85
22	49.53	112.90	3.00	1591.72	1908.68	801.57
23	52.86	114.78	3.00	989.42	1640.52	688.95
24	56.18	116.52	3.00	409.02	1382.11	580.43
25	59.51	118.12	3.00	-141.15	1137.16	477.56
26	62.83	118.90	0.07	-9.92	23.49	9.87

Average Effective Normal Stress = 922.6529(psf)
Average Available Shear Strength = 810.7915(psf)
Total Length of Failure Surface = 69.0698(ft)

INPUT PARAMETERS FOR SIMPLIFIED 3D ANALYSIS

Composite Phi (deg)= 41.308
3D Depth (Vertical difference between ends of Slip Surface) = 25.00(ft)

```
     L/D(1): L = 25.00(ft) L/D(2): L = 50.00(ft) L/D(3): L = 75.00(ft)
     L/D(4): L = 100.00(ft) L/D(5): L = 125.00(ft) L/D(6): L = 150.00(ft)

SUM OF MOMENTS =  -0.109727E-03 (ft/lbs);Imbalance (Fraction of Total Weight) =  -0.1675105E-08
SUM OF FORCES = -.762124E-06 (lbs);Imbalance (Fraction of Total Weight) =   -0.1163472E-10

Sum of Available Shear Forces =   56001.19(lbs)

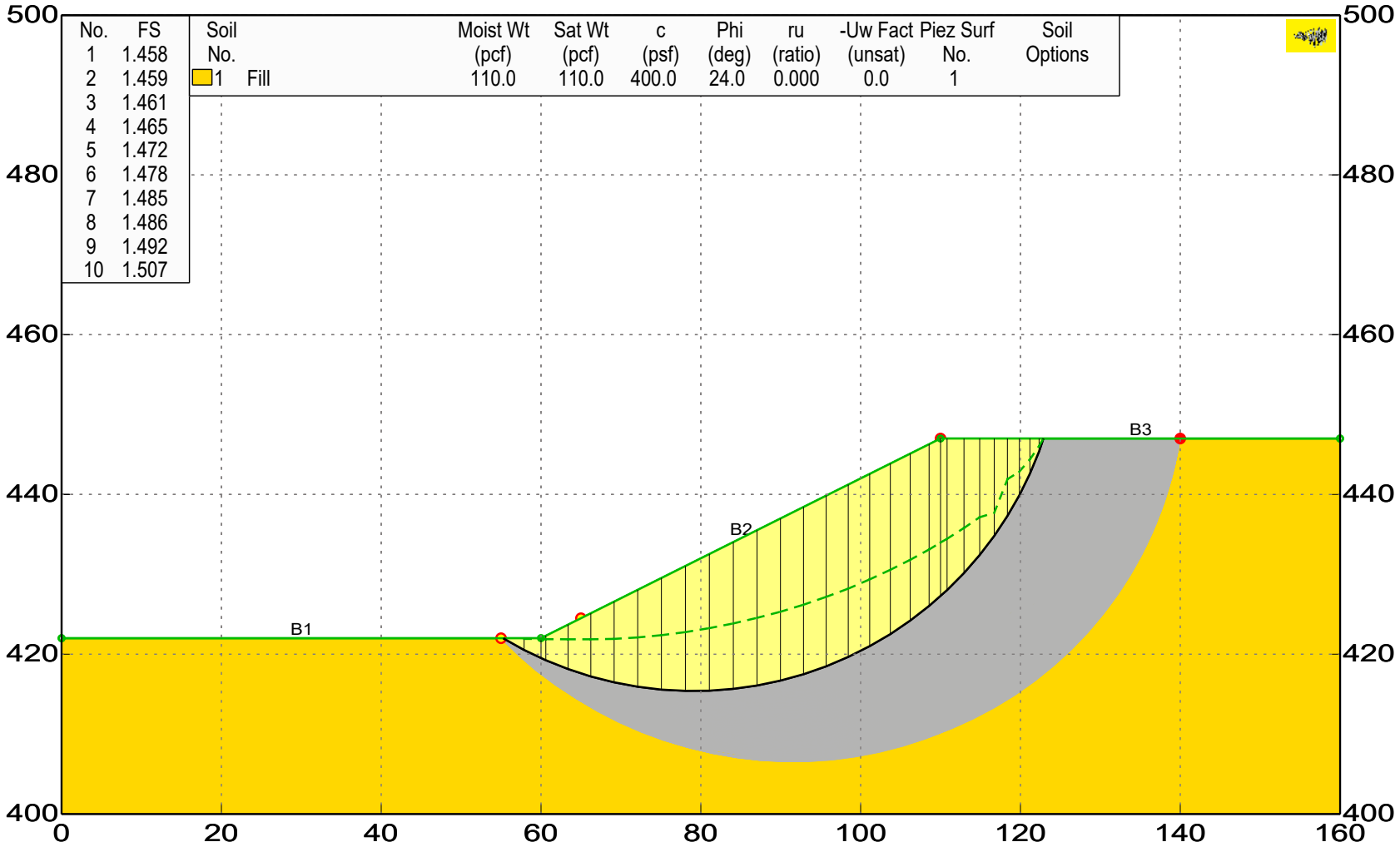
Sum of Mobilized Shear Forces =   23518.32(lbs)

FS Balance Check: FS =  2.381173

                    **** END OF GEOSTASE OUTPUT ****
```

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes (Pseudo-Static)

SA Geotechnical, Inc. \01p.gsd



GEOSTASE FS = 1.458

Spencer Method

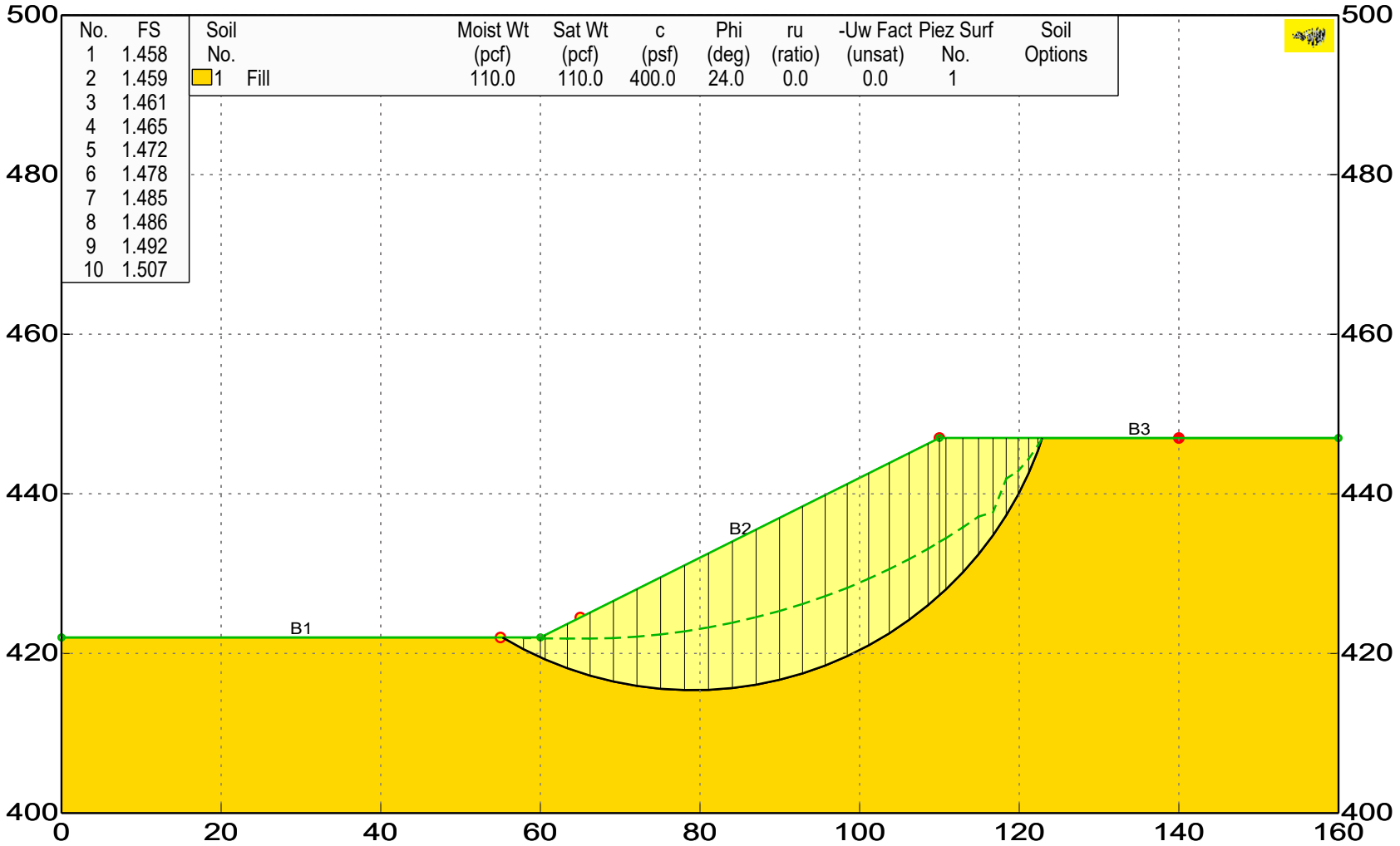
kh = 0.29000

GEOSTASE Slope Stability Analysis

PLATE C.2

95 Argonaut. Aliso Viejo
Global Stability of 25' High Slopes (Pseudo-Static)

SA Geotechnical, Inc. \01p.gsd



GEOSTASE FS = 1.458

Spencer Method

kh = 0.29000

GEOSTASE Slope Stability Analysis

PLATE C.1

*** GEOSTASE(R) ***

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** Current Version 4.30.32-Double Precision, Sept 2023 **

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SLOPE STABILITY ANALYSIS SOFTWARE (2D & 3D)

Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.

(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)

Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads

Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads

Nonlinear Undrained Shear Strength, Curved Strength Envelope,

Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown

2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

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Analysis Date: 5/ 28/ 2024

Analysis Time:

Analysis By: SA Geotechnical, Inc.

Input File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01p.gsd

Output File Name: C:\Users\Reza Saberi\SA Geotechnical, Inc\SA Geotechnical - Projects\2024\24059-01 Meritage - 95 Argonaut, Aliso Viejo\Engineering\Sted\General Slope\01p.OUT

Unit System: English

PROJECT: 95 Argonaut. Aliso Viejo

DESCRIPTION: Global Stability of 25' High Slopes (Pseudo-Static)

PROFILE BOUNDARY DATA

3 Surface Boundaries
3 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	422.000	60.000	422.000	1
2	60.000	422.000	110.000	447.000	1
3	110.000	447.000	160.000	447.000	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 400.000(ft)

SURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD
1	0.000	422.000
2	60.000	422.000
3	110.000	447.000
4	160.000	447.000

SUBSURFACE BOUNDARY POINT COORDINATES
(Information Only-Not Used Directly)

Point No.	X-COORD	Y-COORD

PROFILE BOUNDARY SLOPES AND ANGLES

BND No.	Slope	Angle(Deg.)
1	0.000	0.000
2	0.500	26.565
3	0.000	0.000

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	(-Uw) Fact.	Water Surface No.	Water Option
1 Fill	110.0	110.0	400.00	24.00	0.000	0.0	1	0

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.290(g)
Default Velocity = 1.450(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.29000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.0600(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 55.00(ft)
and X = 65.00(ft)

Each Surface ends within a Range Between X = 110.00(ft)
and X = 140.00(ft)

All surfaces are generated left to right for both a left and right sliding slope.

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 400.00(ft)

Specified Maximum Radius = 100000.000(ft)

3.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Specified Tension Crack Water Depth Factor = 0.000

Total Number of Trial Surfaces Attempted = 2000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.

Number of Trial Surfaces with Non-Converged FS = 1779

Number of Trial Surfaces With Valid FS = 221

Percentage of Trial Surfaces With Non-Converged and/or

Non-Valid FS Solutions of the Total Attempted = 89.0 %

Statistical Data On All Valid FS Values:
FS Max = 1.907 FS Min = 1.458 FS Ave = 1.673
Standard Deviation = 0.100 Coefficient of Variation = 5.97 %

Critical Surface is Sequence Number 8 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 79.072422(ft) ; Y = 461.584595(ft); and Radius = 46.189706(ft)

Circular Trial Failure Surface Generated With 29 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	55.27014	422.00000
2	57.88998	420.53836
3	60.59919	419.24987
4	63.38632	418.13997
5	66.23963	417.21334
6	69.14707	416.47388
7	72.09638	415.92472
8	75.07512	415.56818
9	78.07072	415.40575
10	81.07054	415.43813
11	84.06194	415.66517
12	87.03229	416.08592
13	89.96906	416.69860
14	92.85986	417.50063
15	95.69250	418.48863
16	98.45503	419.65843
17	101.13580	421.00509
18	103.72349	422.52293

19	106.20720	424.20555
20	108.57643	426.04585
21	110.82121	428.03607
22	112.93206	430.16782
23	114.90007	432.43209
24	116.71694	434.81934
25	118.37502	437.31950
26	119.86730	439.92202
27	121.18748	442.61592
28	122.33001	445.38984
29	122.87389	447.00000

Iter. No.	Theta (deg) (fx=1.0)	FS (Moment)	FS (Force)	Lambda	Delta FS
1	15.0000	1.669854	1.332393	0.268	0.3374611E+00
2	19.9500	1.647384	1.378190	0.363	0.2691943E+00
3	39.4653	9.550143	1.745311	0.823	0.7804832E+01
4	19.2530	1.653452	1.371193	0.349	0.2822590E+00
5	18.4988	1.658690	1.363842	0.335	0.2948478E+00
6	36.1598	0.000000	1.641211	0.731	0.1641211E+01
7	21.1879	1.633066	1.391134	0.388	0.2419319E+00
8	23.1140	1.598474	1.412737	0.427	0.1857370E+00
9	29.4789	0.000000	1.501027	0.565	0.1501027E+01
10	23.8147	1.580714	1.421087	0.441	0.1596267E+00
11	24.3602	1.564324	1.427786	0.453	0.1365382E+00
12	27.5854	1.384097	1.471473	0.522	0.8737655E-01
13	26.3271	1.478043	1.453533	0.495	0.2451021E-01
14	26.6029	1.461048	1.457360	0.501	0.3687567E-02
15	26.6518	1.457865	1.458044	0.502	0.1790882E-03
16	26.6495	1.458014	1.458012	0.502	0.1202523E-05
17	26.6495	1.458013	1.458013	0.502	0.3293546E-07

Factor Of Safety For The Preceding Specified Surface = 1.458
Theta (fx = 1.0) = 26.65 Deg Lambda = 0.502

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Constant (1.0)

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 15.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000 (0.00% Filled)

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 11.199(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)

1	57.89	421.93	0.950	3030.29	1.000	26.65	1359.2
2	60.00	421.91	0.965	5333.39	1.000	26.65	2392.2
3	60.60	421.88	0.863	6054.86	1.000	26.65	2715.8
4	63.39	421.85	0.668	9202.53	1.000	26.65	4127.6
5	66.24	421.85	0.586	12349.95	1.000	26.65	5539.3
6	69.15	421.93	0.540	15298.87	1.000	26.65	6862.0
7	72.10	422.10	0.510	17906.63	1.000	26.65	8031.7
8	75.08	422.38	0.488	20071.76	1.000	26.65	9002.8
9	78.07	422.76	0.471	21725.73	1.000	26.65	9744.7
10	81.07	423.25	0.457	22827.80	1.000	26.65	10239.0
11	84.06	423.84	0.445	23361.35	1.000	26.65	10478.3
12	87.03	424.53	0.435	23331.13	1.000	26.65	10464.7
13	89.97	425.32	0.425	22760.74	1.000	26.65	10208.9
14	92.86	426.20	0.416	21690.43	1.000	26.65	9728.8
15	95.69	427.17	0.407	20174.76	1.000	26.65	9049.0
16	98.46	428.23	0.397	18280.37	1.000	26.65	8199.3
17	101.14	429.36	0.387	16083.52	1.000	26.65	7214.0
18	103.72	430.56	0.377	13667.69	1.000	26.65	6130.4
19	106.21	431.82	0.364	11120.94	1.000	26.65	4988.1
20	108.58	433.12	0.350	8533.38	1.000	26.65	3827.5
21	110.00	433.97	0.339	6906.36	1.000	26.65	3097.7
22	110.82	434.45	0.338	6007.06	1.000	26.65	2694.4
23	112.93	435.81	0.335	3761.86	1.000	26.65	1687.3
24	114.90	437.13	0.323	1902.94	1.000	26.65	853.5
25	116.72	437.71	0.237	481.61	1.000	26.65	216.0
26	118.38	441.92	0.476	-468.44	1.000	26.65	-210.1
27	119.87	442.85	0.413	-932.69	1.000	26.65	-418.3
28	121.19	444.38	0.403	-917.26	1.000	26.65	-411.4
29	122.33	446.06	0.415	-450.28	1.000	26.65	-202.0
30	122.87	447.00	0.000	0.00	1.000	26.65	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 30 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	2.62	0.73	56.58	421.27	422.00	-29.16	0.00	3.00
2	2.11	1.96	58.94	420.04	422.00	-25.44	0.00	2.34
3	0.60	2.76	60.30	419.39	422.15	-25.44	26.57	0.66
4	2.79	4.30	61.99	418.69	423.00	-21.71	26.57	3.00
5	2.85	6.73	64.81	417.68	424.41	-17.99	26.57	3.00
6	2.91	9.00	67.69	416.84	425.85	-14.27	26.57	3.00
7	2.95	11.11	70.62	416.20	427.31	-10.55	26.57	3.00
8	2.98	13.05	73.59	415.75	428.79	-6.83	26.57	3.00
9	3.00	14.80	76.57	415.49	430.29	-3.10	26.57	3.00
10	3.00	16.36	79.57	415.42	431.79	0.62	26.57	3.00
11	2.99	17.73	82.57	415.55	433.28	4.34	26.57	3.00
12	2.97	18.90	85.55	415.88	434.77	8.06	26.57	3.00
13	2.94	19.86	88.50	416.39	436.25	11.78	26.57	3.00
14	2.89	20.61	91.41	417.10	437.71	15.51	26.57	3.00
15	2.83	21.14	94.28	417.99	439.14	19.23	26.57	3.00
16	2.76	21.46	97.07	419.07	440.54	22.95	26.57	3.00
17	2.68	21.57	99.80	420.33	441.90	26.67	26.57	3.00
18	2.59	21.45	102.43	421.76	443.21	30.39	26.57	3.00
19	2.48	21.12	104.97	423.36	444.48	34.12	26.57	3.00
20	2.37	20.57	107.39	425.13	445.70	37.84	26.57	3.00
21	1.42	19.97	109.29	426.68	446.64	41.56	26.57	1.90
22	0.82	19.33	110.41	427.67	447.00	41.56	0.00	1.10
23	2.11	17.90	111.88	429.10	447.00	45.28	0.00	3.00
24	1.97	15.70	113.92	431.30	447.00	49.00	0.00	3.00
25	1.82	13.37	115.81	433.63	447.00	52.73	0.00	3.00
26	1.66	10.93	117.55	436.07	447.00	56.45	0.00	3.00
27	1.49	8.38	119.12	438.62	447.00	60.17	0.00	3.00
28	1.32	5.73	120.53	441.27	447.00	63.89	0.00	3.00
29	1.14	3.00	121.76	444.00	447.00	67.61	0.00	3.00
30	0.54	0.81	122.60	446.19	447.00	71.34	0.00	1.70

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	55.270135	422.000000
2	57.889984	420.538361
3	60.000000	419.534845
4	60.599191	419.249872
5	63.386325	418.139971
6	66.239630	417.213338
7	69.147070	416.473882
8	72.096379	415.924724
9	75.075116	415.568179
10	78.070716	415.405751
11	81.070541	415.438127
12	84.061938	415.665168
13	87.032286	416.085918
14	89.969056	416.698602
15	92.859860	417.500635
16	95.692501	418.488633
17	98.455032	419.658429
18	101.135799	421.005088
19	103.723492	422.522929
20	106.207197	424.205550
21	108.576434	426.045852
22	110.000000	427.307986
23	110.821211	428.036073
24	112.932058	430.167815
25	114.900069	432.432088
26	116.716944	434.819339
27	118.375017	437.319497
28	119.867295	439.922017
29	121.187482	442.615918
30	122.330009	445.389838
31	122.873887	447.000000

Table 3 - Force and Pore Pressure Data On The 30 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	-Uw (psf)	Earthquake Force Horiz (lbs)	Earthquake Force Vert (lbs)	Distributed Load (psf)
1	210.6	0.0	0.0	0.0	0.00	0.00	61.1	0.0	0.00
2	455.7	0.0	0.0	0.0	0.00	0.00	132.2	0.0	0.00
3	181.7	0.0	0.0	0.0	0.00	0.00	52.7	0.0	0.00
4	1318.8	0.0	0.0	0.0	0.00	0.00	382.4	0.0	0.00
5	2112.3	0.0	0.0	0.0	0.00	0.00	612.6	0.0	0.00
6	2879.3	0.0	0.0	0.0	0.00	0.00	835.0	0.0	0.00
7	3604.9	0.0	0.0	0.0	0.00	0.00	1045.4	0.0	0.00
8	4274.8	0.0	0.0	0.0	0.00	0.00	1239.7	0.0	0.00
9	4876.7	0.0	0.0	0.0	0.00	0.00	1414.2	0.0	0.00
10	5399.6	0.0	0.0	0.0	0.00	0.00	1565.9	0.0	0.00
11	5834.6	0.0	0.0	0.0	0.00	0.00	1692.0	0.0	0.00
12	6174.7	0.0	0.0	0.0	0.00	0.00	1790.7	0.0	0.00
13	6415.0	0.0	0.0	0.0	0.00	0.00	1860.4	0.0	0.00
14	6553.0	0.0	0.0	0.0	0.00	0.00	1900.4	0.0	0.00
15	6588.1	0.0	0.0	0.0	0.00	0.00	1910.5	0.0	0.00
16	6522.2	0.0	0.0	0.0	0.00	0.00	1891.5	0.0	0.00
17	6359.5	0.0	0.0	0.0	0.00	0.00	1844.2	0.0	0.00
18	6105.9	0.0	0.0	0.0	0.00	0.00	1770.7	0.0	0.00
19	5769.7	0.0	0.0	0.0	0.00	0.00	1673.2	0.0	0.00
20	5360.9	0.0	0.0	0.0	0.00	0.00	1554.7	0.0	0.00
21	3126.7	0.0	0.0	0.0	0.00	0.00	906.7	0.0	0.00
22	1746.0	0.0	0.0	0.0	0.00	0.00	506.3	0.0	0.00
23	4155.8	0.0	0.0	0.0	0.00	0.00	1205.2	0.0	0.00
24	3398.8	0.0	0.0	0.0	0.00	0.00	985.6	0.0	0.00
25	2672.9	0.0	0.0	0.0	0.00	0.00	775.2	0.0	0.00
26	1993.6	0.0	0.0	0.0	0.00	0.00	578.1	0.0	0.00
27	1375.5	0.0	0.0	0.0	0.00	0.00	398.9	0.0	0.00
28	832.3	0.0	0.0	0.0	0.00	0.00	241.4	0.0	0.00
29	376.7	0.0	0.0	0.0	0.00	0.00	109.2	0.0	0.00
30	48.2	0.0	0.0	0.0	0.00	0.00	14.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 106724.37(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 106724.37(lbs)

TOTAL AREA OF SLIDING MASS = 970.22(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 30 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	400.00	24.00	
2	1	400.00	24.00	
3	1	400.00	24.00	
4	1	400.00	24.00	
5	1	400.00	24.00	
6	1	400.00	24.00	
7	1	400.00	24.00	
8	1	400.00	24.00	
9	1	400.00	24.00	
10	1	400.00	24.00	
11	1	400.00	24.00	
12	1	400.00	24.00	
13	1	400.00	24.00	
14	1	400.00	24.00	
15	1	400.00	24.00	
16	1	400.00	24.00	
17	1	400.00	24.00	
18	1	400.00	24.00	
19	1	400.00	24.00	
20	1	400.00	24.00	
21	1	400.00	24.00	
22	1	400.00	24.00	
23	1	400.00	24.00	
24	1	400.00	24.00	
25	1	400.00	24.00	
26	1	400.00	24.00	
27	1	400.00	24.00	
28	1	400.00	24.00	
29	1	400.00	24.00	

30 1 400.00 24.00

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH
N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
S = SHANSEP UNDRAINED SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-29.16	56.58	3.00	906.73	80.39	11.279
2	-25.44	58.94	2.34	978.07	215.97	4.529
3	-25.44	60.30	0.66	1139.32	303.32	3.756
4	-21.71	61.99	3.00	1239.72	473.16	2.620
5	-17.99	64.81	3.00	1469.91	740.28	1.986
6	-14.27	67.69	3.00	1642.62	990.34	1.659
7	-10.55	70.62	3.00	1770.62	1222.27	1.449
8	-6.83	73.59	3.00	1862.02	1435.11	1.297
9	-3.10	76.57	3.00	1922.30	1627.94	1.181
10	0.62	79.57	3.00	1955.35	1799.97	1.086
11	4.34	82.57	3.00	1964.12	1950.46	1.007
12	8.06	85.55	3.00	1950.97	2078.78	0.939
13	11.78	88.50	3.00	1917.86	2184.39	0.878
14	15.51	91.41	3.00	1866.52	2266.84	0.823
15	19.23	94.28	3.00	1798.53	2325.78	0.773
16	22.95	97.07	3.00	1715.40	2360.97	0.727
17	26.67	99.80	3.00	1618.59	2372.25	0.682

18	30.39	102.43	3.00	1509.54	2359.59	0.640
19	34.12	104.97	3.00	1389.75	2323.03	0.598
20	37.84	107.39	3.00	1260.73	2262.72	0.557
21	41.56	109.29	1.90	1133.61	2196.39	0.516
22	41.56	110.41	1.10	1095.16	2126.08	0.515
23	45.28	111.88	3.00	928.35	1968.79	0.472
24	49.00	113.92	3.00	730.90	1727.01	0.423
25	52.73	115.81	3.00	542.25	1471.17	0.369
26	56.45	117.55	3.00	364.05	1202.36	0.303
27	60.17	119.12	3.00	198.18	921.72	0.215
28	63.89	120.53	3.00	46.73	630.41	0.074
29	67.61	121.76	3.00	-87.90	329.68	-0.267
30	71.34	122.60	1.70	-185.03	88.56	-2.089

TABLE 5A - Total Base Force Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-29.16	56.58	3.00	2720.19	210.61	12.916
2	-25.44	58.94	2.34	2285.27	455.71	5.015
3	-25.44	60.30	0.66	755.95	181.75	4.159
4	-21.71	61.99	3.00	3719.16	1318.76	2.820
5	-17.99	64.81	3.00	4409.74	2112.25	2.088
6	-14.27	67.69	3.00	4927.85	2879.35	1.711
7	-10.55	70.62	3.00	5311.86	3604.86	1.474
8	-6.83	73.59	3.00	5586.07	4274.81	1.307
9	-3.10	76.57	3.00	5766.89	4876.67	1.183
10	0.62	79.57	3.00	5866.04	5399.60	1.086
11	4.34	82.57	3.00	5892.36	5834.60	1.010
12	8.06	85.55	3.00	5852.90	6174.70	0.948
13	11.78	88.50	3.00	5753.57	6415.05	0.897
14	15.51	91.41	3.00	5599.56	6552.98	0.855
15	19.23	94.28	3.00	5395.60	6588.10	0.819
16	22.95	97.07	3.00	5146.21	6522.25	0.789
17	26.67	99.80	3.00	4855.76	6359.46	0.764

18	30.39	102.43	3.00	4528.62	6105.89	0.742
19	34.12	104.97	3.00	4169.24	5769.71	0.723
20	37.84	107.39	3.00	3782.18	5360.93	0.706
21	41.56	109.29	1.90	2156.70	3126.71	0.690
22	41.56	110.41	1.10	1201.93	1745.96	0.688
23	45.28	111.88	3.00	2785.05	4155.81	0.670
24	49.00	113.92	3.00	2192.70	3398.77	0.645
25	52.73	115.81	3.00	1626.75	2672.93	0.609
26	56.45	117.55	3.00	1092.16	1993.61	0.548
27	60.17	119.12	3.00	594.53	1375.46	0.432
28	63.89	120.53	3.00	140.18	832.26	0.168
29	67.61	121.76	3.00	-263.70	376.67	-0.700
30	71.34	122.60	1.70	-314.47	48.17	-6.529

TABLE 6 - Effective and Base Shear Stress Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-29.16	56.58	3.00	906.73	803.70	551.23
2	-25.44	58.94	2.34	978.07	835.47	573.02
3	-25.44	60.30	0.66	1139.32	907.26	622.26
4	-21.71	61.99	3.00	1239.72	951.96	652.92
5	-17.99	64.81	3.00	1469.91	1054.45	723.21
6	-14.27	67.69	3.00	1642.62	1131.34	775.95
7	-10.55	70.62	3.00	1770.62	1188.33	815.03
8	-6.83	73.59	3.00	1862.02	1229.03	842.95
9	-3.10	76.57	3.00	1922.30	1255.86	861.35
10	0.62	79.57	3.00	1955.35	1270.58	871.44
11	4.34	82.57	3.00	1964.12	1274.48	874.12
12	8.06	85.55	3.00	1950.97	1268.63	870.11
13	11.78	88.50	3.00	1917.86	1253.88	860.00
14	15.51	91.41	3.00	1866.52	1231.03	844.32
15	19.23	94.28	3.00	1798.53	1200.76	823.56
16	22.95	97.07	3.00	1715.40	1163.75	798.17
17	26.67	99.80	3.00	1618.59	1120.64	768.61

18	30.39	102.43	3.00	1509.54	1072.09	735.31
19	34.12	104.97	3.00	1389.75	1018.76	698.73
20	37.84	107.39	3.00	1260.73	961.31	659.33
21	41.56	109.29	1.90	1133.61	904.72	620.51
22	41.56	110.41	1.10	1095.16	887.60	608.77
23	45.28	111.88	3.00	928.35	813.33	557.83
24	49.00	113.92	3.00	730.90	725.42	497.54
25	52.73	115.81	3.00	542.25	641.42	439.93
26	56.45	117.55	3.00	364.05	562.09	385.52
27	60.17	119.12	3.00	198.18	488.23	334.86
28	63.89	120.53	3.00	46.73	420.80	288.61
29	67.61	121.76	3.00	-87.90	360.86	247.50
30	71.34	122.60	1.70	-185.03	317.62	217.84

TABLE 6A - Effective and Base Shear Force Data on the 30 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-29.16	56.58	3.00	2720.19	2411.11	1653.69
2	-25.44	58.94	2.34	2285.27	1952.06	1338.85
3	-25.44	60.30	0.66	755.95	601.97	412.87
4	-21.71	61.99	3.00	3719.16	2855.88	1958.75
5	-17.99	64.81	3.00	4409.74	3163.34	2169.63
6	-14.27	67.69	3.00	4927.85	3394.02	2327.84
7	-10.55	70.62	3.00	5311.86	3564.99	2445.10
8	-6.83	73.59	3.00	5586.07	3687.08	2528.84
9	-3.10	76.57	3.00	5766.89	3767.59	2584.06
10	0.62	79.57	3.00	5866.04	3811.73	2614.33
11	4.34	82.57	3.00	5892.36	3823.45	2622.37
12	8.06	85.55	3.00	5852.90	3805.88	2610.32
13	11.78	88.50	3.00	5753.57	3761.65	2579.99
14	15.51	91.41	3.00	5599.56	3693.08	2532.96
15	19.23	94.28	3.00	5395.60	3602.28	2470.68
16	22.95	97.07	3.00	5146.21	3491.24	2394.52
17	26.67	99.80	3.00	4855.76	3361.92	2305.83

18	30.39	102.43	3.00	4528.62	3216.27	2205.93
19	34.12	104.97	3.00	4169.24	3056.27	2096.19
20	37.84	107.39	3.00	3782.18	2883.93	1977.99
21	41.56	109.29	1.90	2156.70	1721.23	1180.53
22	41.56	110.41	1.10	1201.93	974.13	668.12
23	45.28	111.88	3.00	2785.05	2439.98	1673.50
24	49.00	113.92	3.00	2192.70	2176.25	1492.62
25	52.73	115.81	3.00	1626.75	1924.27	1319.79
26	56.45	117.55	3.00	1092.16	1686.26	1156.55
27	60.17	119.12	3.00	594.53	1464.70	1004.59
28	63.89	120.53	3.00	140.18	1262.41	865.84
29	67.61	121.76	3.00	-263.70	1082.59	742.51
30	71.34	122.60	1.70	-314.47	539.80	370.23

Average Effective Normal Stress = 1251.9641(psf)
Average Available Shear Strength = 957.4103(psf)
Total Length of Failure Surface = 82.6995(ft)

INPUT PARAMETERS FOR SIMPLIFIED 3D ANALYSIS

Composite Phi (deg)= 37.406
3D Depth (Vertical difference between ends of Slip Surface) = 25.00(ft)
L/D(1): L = 25.00(ft) L/D(2): L = 50.00(ft) L/D(3): L = 75.00(ft)
L/D(4): L = 100.00(ft) L/D(5): L = 125.00(ft) L/D(6): L = 150.00(ft)

Average Elevation of Point of Application of kh on Sliding Mass = 430.801(ft)

SUM OF MOMENTS = -0.324693E-03 (ft/lbs);Imbalance (Fraction of Total Weight) = -0.3042346E-08
SUM OF FORCES = -.196472E-04 (lbs);Imbalance (Fraction of Total Weight) = -0.1840930E-09

Sum of Available Shear Forces = 79177.39(lbs)

Sum of Mobilized Shear Forces = 54305.01(lbs)

FS Balance Check: FS = 1.458013

**** END OF GEOSTASE OUTPUT ****

Appendix F

APPENDIX E

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

1.0 GENERAL

1.1 **Intent:** These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these general Specifications. Observations of the earthwork by the project Geotechnical Consultant during grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 **Geotechnical Consultant:** Prior to commencement of work, the project owner shall employ a geotechnical consultant. The geotechnical consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all keyway bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of subgrade and fill materials and perform adequate relative compaction testing of fill to determine the attained level of compaction and assess if, in their opinion, if the work was performed in substantial compliance

with the geotechnical report(s) and these specifications. The Geotechnical Consultant shall provide test results to the owner on a routine and frequent basis.

1.3 **The Earthwork Contractor:** The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with applicable grading codes, the project plans, and these specifications.

The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork planned for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are corrected.

2.0 PREPARATION OF FILL AREAS

2.1 **Clearing and Grubbing:** Areas to be excavated and filled shall be cleared and grubbed. Vegetation, such as brush, grass, roots, and other deleterious material, man-made structures, and similar debris shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant. Borrow areas shall be cleared and grubbed to the extent necessary to provide a suitable fill material.

Concrete fragments that are free of reinforcing street may be placed in fills, provided they are placed in accordance with Section 3 and 4. Earth fill material

shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent organic matter. Nesting of organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area. As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, etc.) have chemical constituents that are considered hazardous waste. As such, the indiscriminate dumping or spillage of such fluids may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

The Geotechnical Consultant shall not be responsible for the identification or analysis of potentially hazardous materials; however, if observations, odors, or soil discoloration are suspect, the Geotechnical Consultant may request from the owner the termination of grading operations until such materials are deemed not hazardous as defined by applicable laws and regulations.

2.2 **Evaluation/Acceptance of Fill Areas:** All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

2.3 **Processing:** Ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Ground that is not satisfactory shall be removed/overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction. After scarification, the surface should be moisture conditioned, as necessary, to achieve the proper moisture content and compacted in accordance with Section 4 of these specifications.

2.4 **Overexcavation:** In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured, or otherwise unsuitable ground shall be overexcavated to competent ground as recommended by the Geotechnical Consultant during grading.

2.5 **Benching:** Fills to be placed on ground sloping steeper than 5H:1V (horizontal to vertical units) shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for fill placement.

3.0 FILL MATERIAL

3.1 **General:** Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 **Oversize:** Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 12 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or other underground construction.

3.3 **Import:** If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1 and/or requirements defined in the project geotechnical report(s). The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before import begins so that suitability can be determined, and appropriate laboratory tests performed.

4.0 FILL PLACEMENT AND COMPACTION

4.1 **Fill Layers:** Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 **Fill Moisture Conditioning:** Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with ASTM International (ASTM Test Method D1557).

4.3 **Compaction of Fill:** After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction and uniformity.

Compaction of Fill Slopes: In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.4 **Compaction Testing:** Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.5 **Frequency of Compaction Testing:** Tests shall be taken at intervals required by the governing agency and as deemed necessary by the Geotechnical Consultant in order to adequately qualify the fill material. In general, it should be anticipated that tests will be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill, unless recommended otherwise by the Geotechnical Consultant. In addition, test(s) shall be taken on slope faces and/or each 10 feet of vertical height of slope as deemed necessary by the Geotechnical Consultant. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.6 **Compaction Test Locations:** The Geotechnical Consultant shall document the approximate elevation and location of each compaction test. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided. Alternatively, GPS units may be used to determine the approximate location/coordinates of the field density tests.

5.0 SUBDRAIN INSTALLATION

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and standard details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys. The Contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The Contractor is responsible for the performance of subdrains.

6.0 EXCAVATION

Excavations, including over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical report(s) and plans are estimates. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 TRENCH BACKFILLS

7.1 Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

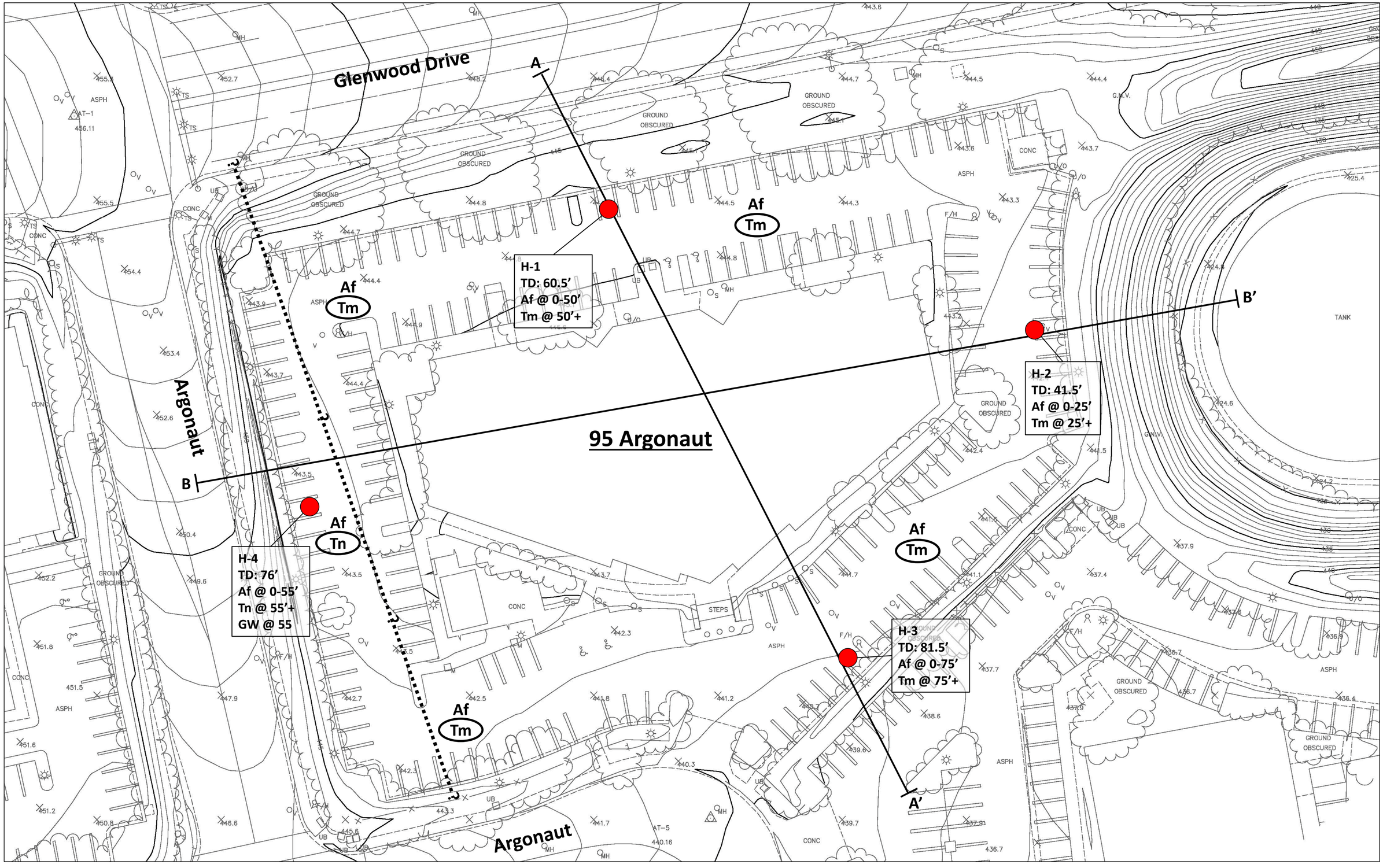
7.2 Bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum 90 percent of maximum from 1 foot above the top of the conduit to the surface, except in traveled ways (see Section 7.6 below).

7.3 Jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

7.4 Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill, unless required differently by the governing agency or the Geotechnical Consultant.

7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

7.6 Trench backfill in the upper foot measured from finish grade within existing or future traveled way, shoulder, and other paved areas (or areas to receive pavement) should be placed to a minimum 95 percent relative compaction.



Basemap Source: X Engineering & Consulting (May 2024)

LEGEND

H-4
TD: 76'
Af @ 0-55'
Tn @ 55'+
GW @ 55'

Approximate Location of Hollow Stem Auger Boring, Showing Total Depth, Depth to Earth Units, and Depth to Groundwater in Feet.

B — **B'** Geotechnical Cross-Section

Earth Units - *Circled Where Buried*

Af Artificial Fill
Tm Monterey Formation
Tn Niguel Formation

Symbols – *Locations are Approximate*

— — ····· Fault, Dotted Where Buried

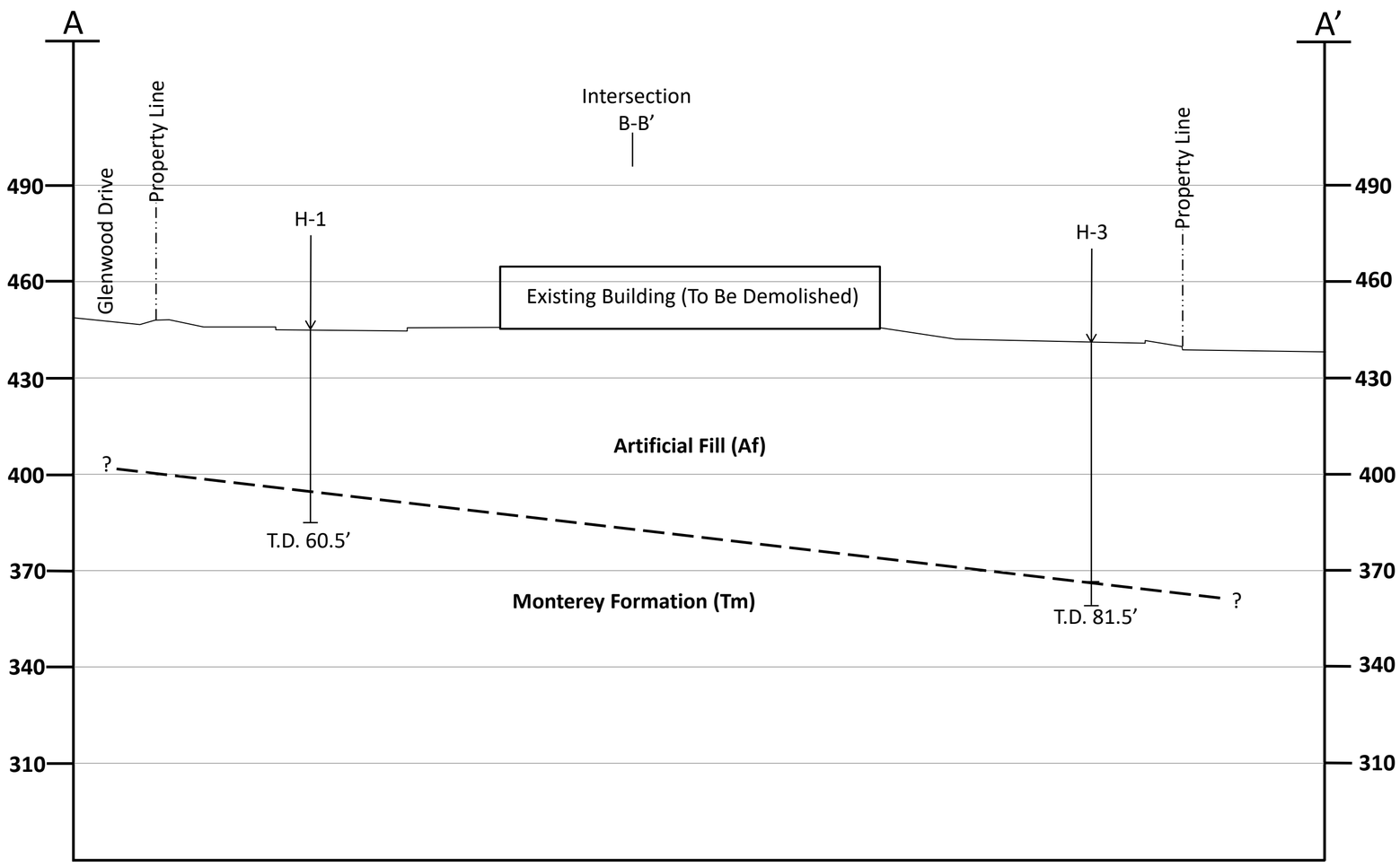
North
Scale: 1" = 30'
(On 18"x24" Plot)

GEOTECHNICAL MAP

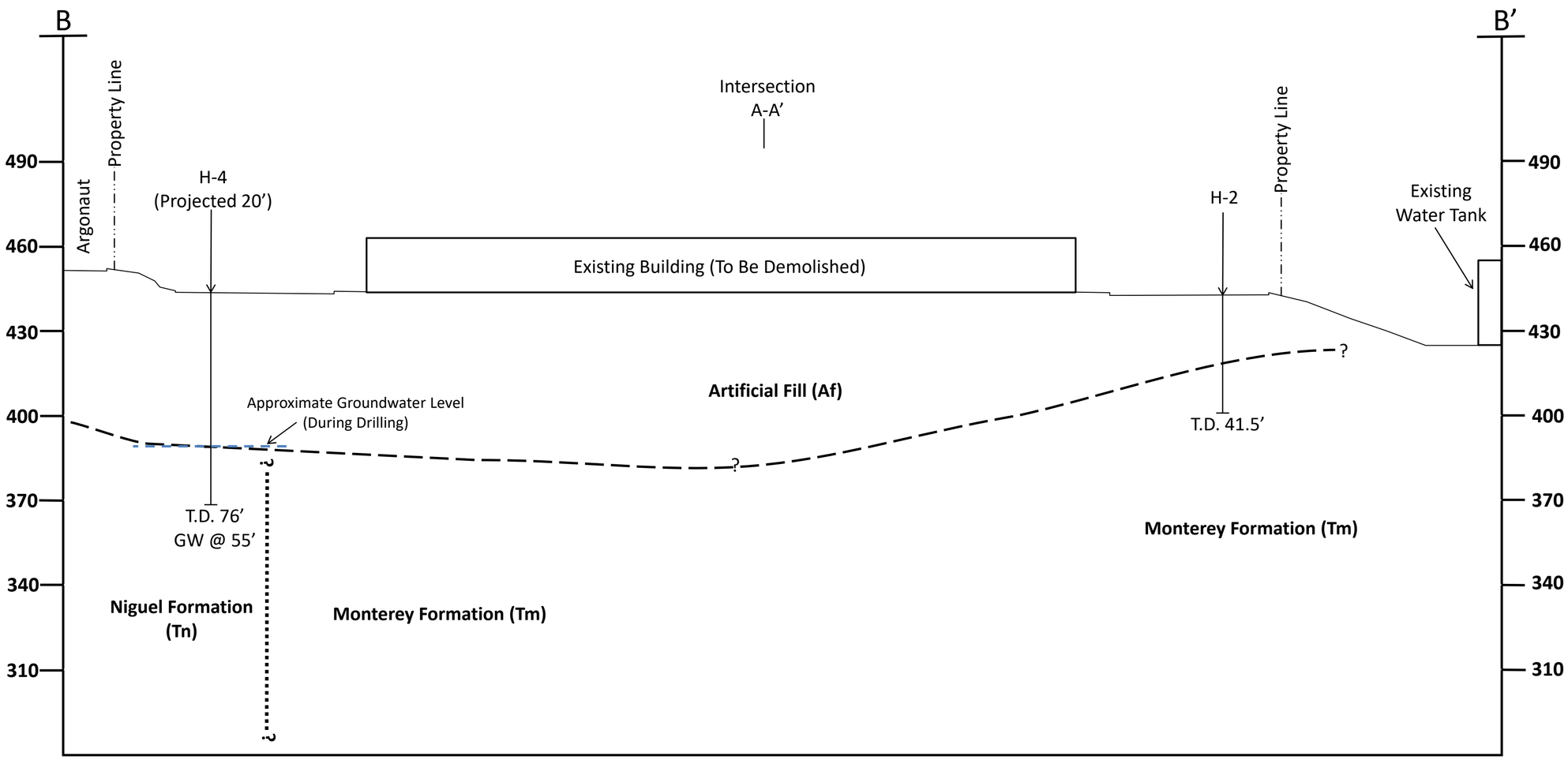
Meritage Homes
Proposed Residential Development
95 Argonaut
Aliso Viejo, California

Project Number: 24059-01
Date: May 31, 2024
Plate 1

S/A



Legend	Geotechnical Cross-Section A-A'	
N27W ←	Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Plate 2
Scale: 1 inch=30 feet		



Legend	Geotechnical Cross-Section B-B'	
N80E →	Meritage Homes Proposed Residential Development 95 Argonaut Aliso Viejo, California	Project Number: 24059-01 Date: May 31, 2024 Plate 3
Scale: 1 inch=30 feet		

APPENDIX G:

Noise Supporting Information

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Mobile Construction Activity Noise Calculation

Receptor:	Receiving residential property line	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 50 ft		Usage	Distance to	Ground	Shielding	Calculated (dBA)		
No.	Equipment Description	Lmax	Quantity	factor[1]	Receptor	Effect[2]	(dBA)[3]	Lmax	Leq	Energy
1	Grader	85	1	40	200	1	3	70.0	60.0	990558.2453
2	Excavator	85	1	40	250	1	3	68.0	57.1	507165.8216
3	Dozer	85	1	40	250	1	3	68.0	57.1	507165.8216
4	Front End Loader	80	1	40	250	1	3	63.0	52.1	160379.9148
5	Backhoe	80	1	40	250	1	3	63.0	52.1	160379.9148
6										
7										
8										
9										
10										
							Lmax[4]	70	Leq	64

Notes:

[1] Percentage of time activity occurs each hour

[2] Soft ground terrain between project site and receptor.

[3] Shielding due to terrain or structures

[4] Calculated Lmax is the Loudest value.

Residential Grade Mechanical Equipment

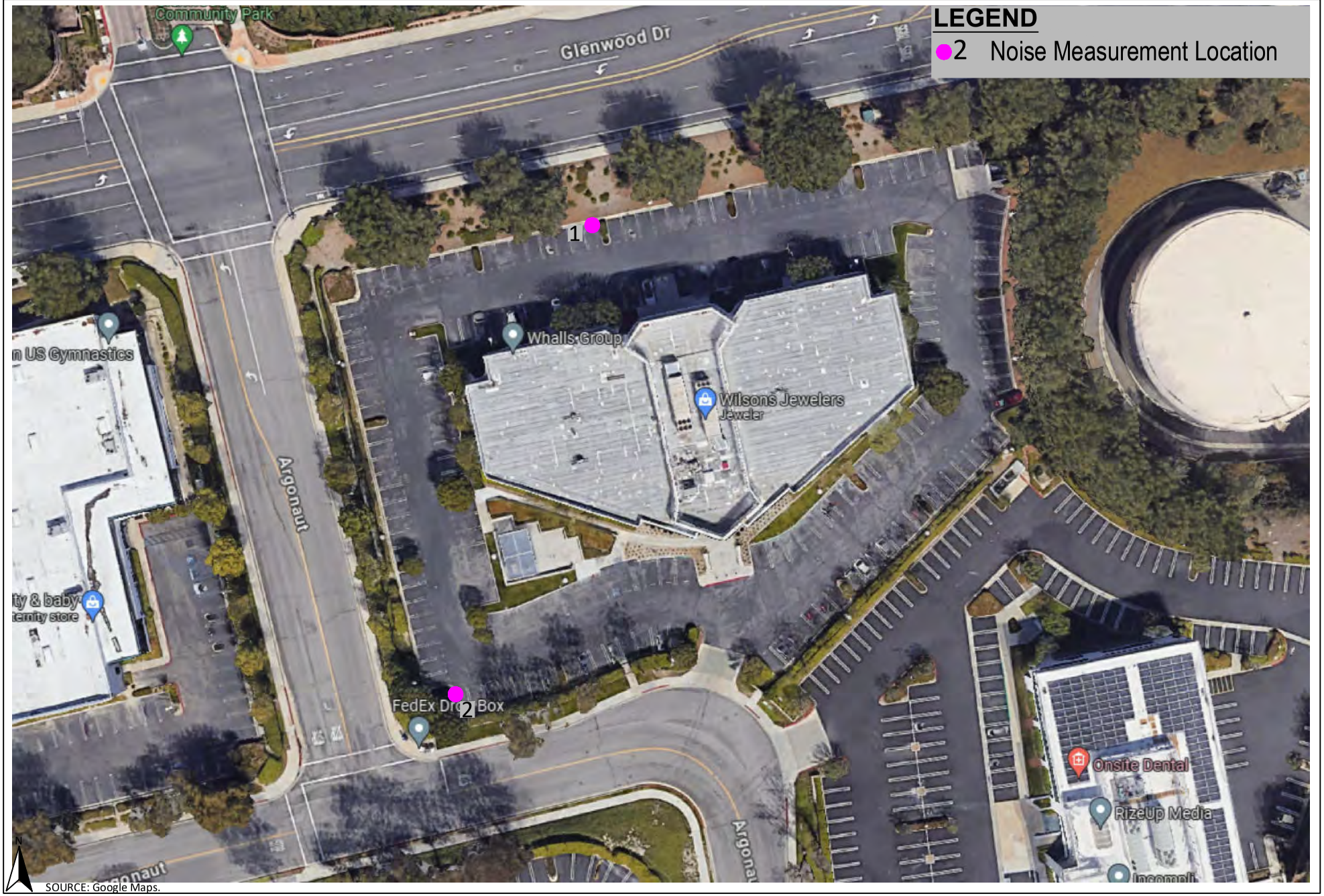
Receptor:	Nearest Residential Receptor	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 3 ft		Usage	Distance to	Ground	Shielding	Calculated (dBA)		
No.	Equipment Description	Lmax	Quantity	factor[1]	Receptor	Effect[2]	(dBA)[3]	Lmax	Leq	Energy
1	Residential grade mechanical ventilation equipment	70	1	80	200	1	3	30.5	11.3	13.53205531
2	Residential grade mechanical ventilation equipment	70	1	80	210	1	3	30.1	10.7	11.68949816
3	Residential grade mechanical ventilation equipment	70	1	80	220	1	3	29.7	10.1	10.16683344
4	Residential grade mechanical ventilation equipment	70	1	80	230	1	3	29.3	9.5	8.897546023
5										
6										
7										
8										
9										
10										
									Leq	16

Notes:

[1] Percentage of time activity occurs each hour

[2] Soft ground terrain between project site and receptor

[3] Shielding due to rooftop parapet/structural shielding



VISTA ENVIRONMENTAL

2495

Figure 1
Field Noise Measurement Locations

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	SLM_0002509_831_Data_001.34.ldbin
Meter	831		
Firmware	2.403		
User	GT	Location	
Description	Aliso Viejo Argonaut		
Note	On north side of the project site, approximately 90 ft south of Glenwood Dr CL		
Start Time	2024-05-06 12:23:20	Duration	0:15:00.0
End Time	2024-05-06 12:38:20	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	57.9 dB		
LAE	87.4 dB	SEA	--- dB
EA	61.0 µPa²h		
LZ_{peak}	103.0 dB	2024-05-06 12:23:20	
LAS_{max}	72.0 dB	2024-05-06 12:34:54	
LAS_{min}	44.0 dB	2024-05-06 12:26:26	
LA_{eq}	57.9 dB		
LC_{eq}	68.2 dB	LC_{eq} - LA_{eq}	10.4 dB
LAI_{eq}	60.3 dB	LAI_{eq} - LA_{eq}	2.4 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	5	0:00:26.0
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
57.9 dB	57.9 dB	0.0 dB

LDEN	LDay	LEve	LNight
57.9 dB	57.9 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	57.9 dB		68.2 dB		76.9 dB	
$LS_{(max)}$	72.0 dB	2024-05-06 12:34:54	82.6 dB	2024-05-06 12:24:21	91.7 dB	2024-05-06 12:23:20
$LF_{(max)}$	78.9 dB	2024-05-06 12:34:54	84.1 dB	2024-05-06 12:24:21	97.4 dB	2024-05-06 12:23:20
$LI_{(max)}$	82.6 dB	2024-05-06 12:34:54	84.9 dB	2024-05-06 12:24:21	100.7 dB	2024-05-06 12:23:20
$LS_{(min)}$	44.0 dB	2024-05-06 12:26:26	58.6 dB	2024-05-06 12:26:28	63.4 dB	2024-05-06 12:26:44
$LF_{(min)}$	43.1 dB	2024-05-06 12:26:25	56.2 dB	2024-05-06 12:26:26	61.2 dB	2024-05-06 12:26:41
$LI_{(min)}$	43.5 dB	2024-05-06 12:26:24	59.9 dB	2024-05-06 12:26:27	64.7 dB	2024-05-06 12:26:44
$L_{Peak(max)}$	93.6 dB	2024-05-06 12:34:54	92.1 dB	2024-05-06 12:34:54	103.0 dB	2024-05-06 12:23:20

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	63.8 dB
LAS 10.0	61.9 dB
LAS 33.3	56.8 dB
LAS 50.0	54.8 dB
LAS 66.6	52.4 dB
LAS 90.0	48.8 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.002	Computer's File Name	SLM_0002509_831_Data_002.28.ldbin
Meter	831		
Firmware	2.403		
User	GT		Location
Description	Aliso Viejo Argonaut		
Note	Near Southwest Corner of Project Site, approximately 70 ft east & 60 ft north of Argonaut CLs		
Start Time	2024-05-06 12:41:52	Duration	0:15:00.0
End Time	2024-05-06 12:56:52	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	56.0 dB		
LAE	85.5 dB	SEA	--- dB
EA	39.8 µPa²h		
LZ_{peak}	99.9 dB	2024-05-06 12:41:52	
LAS_{max}	73.1 dB	2024-05-06 12:54:30	
LAS_{min}	43.2 dB	2024-05-06 12:51:10	
LA_{eq}	56.0 dB		
LC_{eq}	66.1 dB	LC_{eq} - LA_{eq}	10.1 dB
LAI_{eq}	58.5 dB	LAI_{eq} - LA_{eq}	2.5 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	3	0:00:34.3
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
56.0 dB	56.0 dB	0.0 dB

LDEN	LDay	LEve	LNight
56.0 dB	56.0 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	56.0 dB		66.1 dB		70.0 dB	
$LS_{(max)}$	73.1 dB	2024-05-06 12:54:30	75.1 dB	2024-05-06 12:53:40	92.6 dB	2024-05-06 12:41:52
$LF_{(max)}$	78.1 dB	2024-05-06 12:54:30	78.8 dB	2024-05-06 12:42:05	94.7 dB	2024-05-06 12:41:52
$LI_{(max)}$	79.6 dB	2024-05-06 12:54:30	81.5 dB	2024-05-06 12:42:05	97.5 dB	2024-05-06 12:41:52
$LS_{(min)}$	43.2 dB	2024-05-06 12:51:10	58.0 dB	2024-05-06 12:51:00	61.4 dB	2024-05-06 12:51:10
$LF_{(min)}$	42.6 dB	2024-05-06 12:51:09	56.3 dB	2024-05-06 12:51:09	59.0 dB	2024-05-06 12:51:07
$LI_{(min)}$	43.0 dB	2024-05-06 12:51:09	59.0 dB	2024-05-06 12:51:00	62.6 dB	2024-05-06 12:51:07
$L_{Peak(max)}$	91.3 dB	2024-05-06 12:54:30	89.0 dB	2024-05-06 12:54:29	99.9 dB	2024-05-06 12:41:52

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	62.1 dB
LAS 10.0	58.5 dB
LAS 33.3	51.9 dB
LAS 50.0	49.8 dB
LAS 66.6	48.0 dB
LAS 90.0	45.7 dB

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APPENDIX H:

Public Service Letters

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Outlook

95 Argonaut Aliso Viejo / Residential Project CEQA / EIR

From Evans, Eric <EricEvans@ocfa.org>
Date Tue 1/14/2025 3:08 PM
To Henry Welch <hwelch@fcs-intl.com>
Cc Letterman, Todd <ToddLetterman@ocfa.org>; Gomi, Kimberly <KimberlyGomi@ocfa.org>; Stossier, Meghan <MeghanStossier@ocfa.org>; Vicent, Iris <IrisVicent@ocfa.org>; Rivers, Tamy <TamyRivers@ocfa.org>; Alex Ortiz <aortiz@fcs-intl.com>

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Good afternoon Mr. Welch

Henry Welch
ES Analyst
hwelch@fcs-intl.com
Subject: Customer request for OCFA assistance / 95 Argonaut Aliso Viejo / Residential Project CEQA / EIR

Your email request for assistance was sent to me. OCFA will need to formally process and document your request for CEQA / EIR comments. Kim Gomi is our permit supervisor and will be handling the intake process, Todd Letterman is my Assistant Fire Marshal that will be reviewing your request and sending you a formal response. In advance, our comments are as follows:

1. OCFA has the ability to provide fire protection services to this site.
2. This project will require an OCFA Secured Fire Protection Agreement.

Kim Gomi / Permit Supervisor
714-573-6259
kimgomi@ocfa.org

Todd Letterman/ Assistant Fire Marshal / Plan Review Section
714-573-6102
toddletterman@ocfa.org

Respectfully,

Eric Evans
Deputy Fire Marshal – Planning & Development
Orange County Fire Authority
Office: 714.573.6101

In service of others!

Outlook

Re: 95 Argonaut Residential Project – School Services

From Hampton, Clark D. <CDHAMPTON@capousd.org>
Date Tue 12/17/2024 1:06 PM
To Henry Welch <hwelch@fcs-intl.com>
Cc Alex Ortiz <aortiz@fcs-intl.com>

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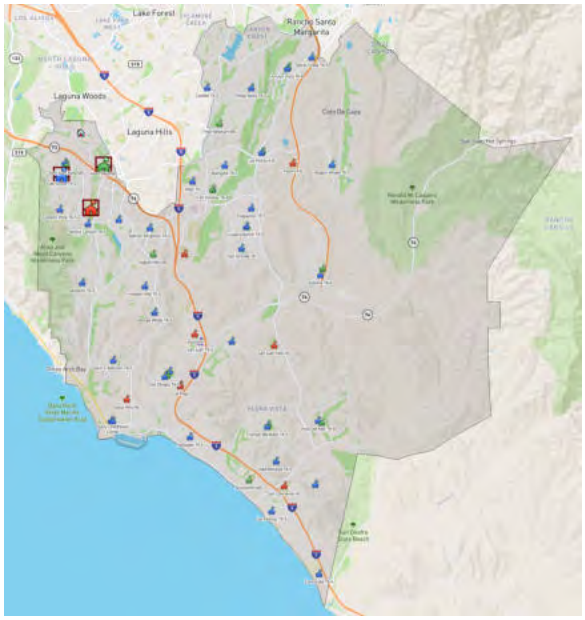
Mr. Welch,

I answered the service questions from the letter below. Please let me know if you have any questions.

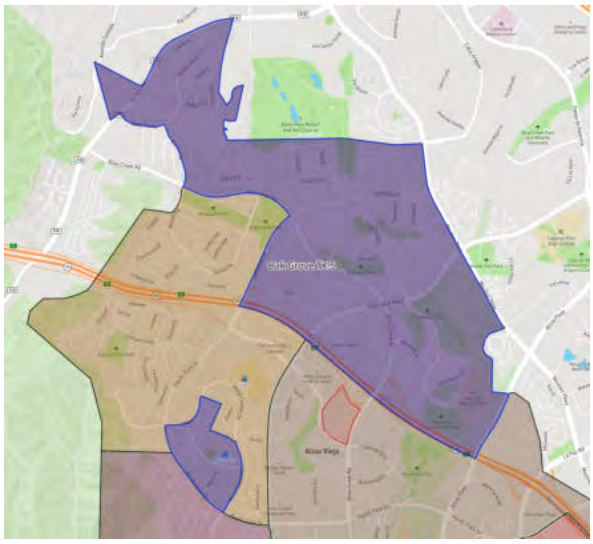
Service Questions

1. Please identify the Capistrano Unified School District's (CUSD) area of enrollment.

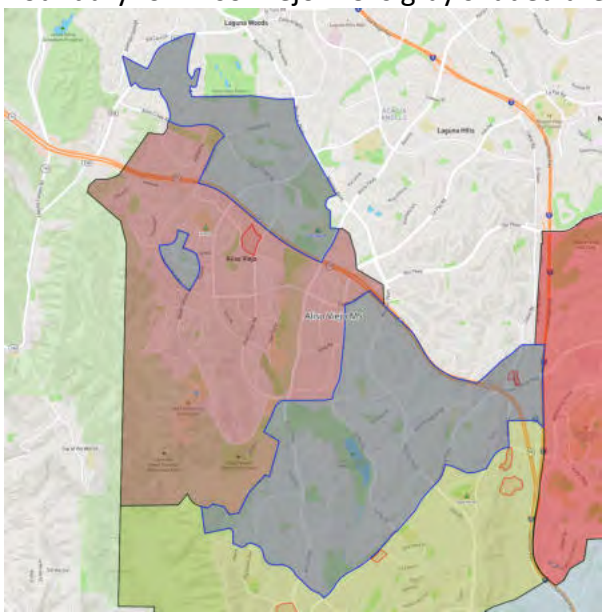
The entire CUSD district is shaded in below map:



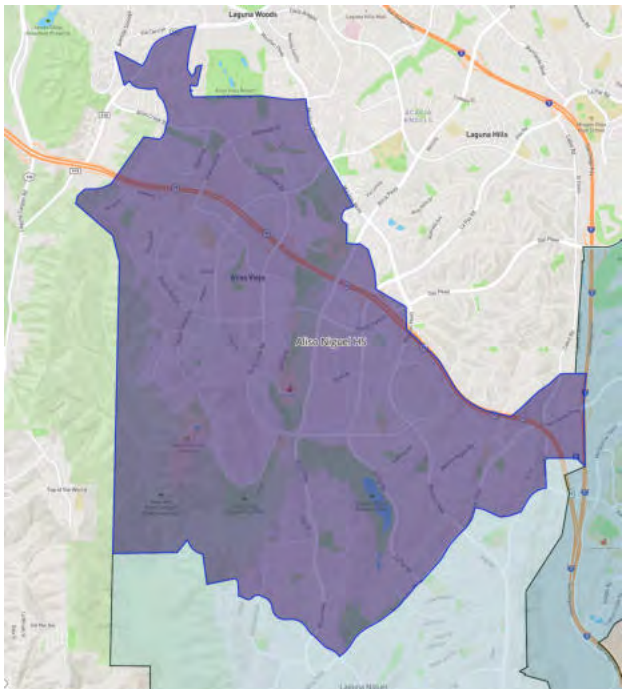
The schools that serve the address (95 Argonaut) are:
Oak Grove Elementary School
Boundary for Oak Grove is purple shaded area



Aliso Viejo Middle School
Boundary for Aliso Viejo MS is gray shaded area



Aliso Niguel High School
Boundary for Aliso Niguel HS is purple shaded area



2. Please provide an estimate of the current standard student generation factors for elementary, middle, and high school students used by the CUSD and the target student enrollment that CUSD would like to achieve.

The student projections for the project are:
TK—5 13
6–8 4
9–12. 5
Total 23

3. Please describe concerns related to potential population growth associated with the Housing Development Project. Please describe any measures that you would recommend to reduce potential concerns/challenges.

CUSD can accommodate the number of students from the development. The developer will be required to pay Level 1 Developer Fees.

Thank you

Clark

| Clark Hampton | Deputy Superintendent, Business and Support Services |

| Capistrano Unified School District | 33122 Valle Road, San Juan Capistrano, CA 92675 | (949) 234-9211

"A school isn't only a building. It's an expression of beliefs and attitudes about ourselves and the generations of young people for whom it is planned. In its silent language of space, scale and shape, the structure stands for what we are, what we think

of ourselves and what we believe we can become."

From: Henry Welch <hwelch@fcs-intl.com>
Sent: Monday, December 16, 2024 9:57 AM
To: Hampton, Clark D. <CDHAMPTON@capousd.org>
Cc: Alex Ortiz <aortiz@fcs-intl.com>
Subject: RE: 95 Argonaut Residential Project – School Services

Dear Deputy Superintendent Clark Hampton,

FirstCarbon Solutions (FCS) is preparing a Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) to identify any potential environmental impacts that would result from implementation of the 95 Argonaut Residential Project in the City of Aliso Viejo, California that requires review under the California Environmental Quality Act (CEQA).

The attached pdf shows the full letter with project description as well as relevant exhibits maps showing the proposed rezoning areas. Inside you will find the Service Questions we have for School Services.

We greatly appreciate your expertise and assistance in this matter. Your responses will help us ensure that our analysis is accurate and complete. To ensure a timely completion of our analysis, please provide your response via e-mail no later than the End of December 2024. I understand the Holidays make for unusual schedules. If you have any questions, please contact me by email at hwelch@fcs-intl.com

Thank you again and I wish you the best during these Holidays.
Sincerely

Henry Welch
ES Analyst
hwelch@fcs-intl.com

Available Working Hours
Monday: 9:00am - 4:30pm
Tuesday -Thursday: 10:30am - 5pm

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An ADEC Innovation

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Outlook

FW: 95 Argonaut Residential Project – Park Services

From So Kim <SKim@avcity.org>
Date Tue 12/17/2024 5:08 PM
To Henry Welch <hwelch@fcs-intl.com>
Cc Lizzy Mendoza <LMendoza@AVCity.org>; Shaun Pelletier <spelletier@AVCity.org>

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Hi Henry,
Provided below are responses from the City.

1. Please identify the current parks and recreational facility centers of the Aliso Viejo Recreation & Community Services. Please describe the existing conditions of these parks and recreational facility centers. The City oversees the operations at the Aliso Viejo Ranch, Iglesia Community Center, the Aliso Viejo Aquatic Center, and the Aliso Viejo Center. The City owns and manages Iglesia Park and Vista Park. All these facilities and parks are in great condition.
2. Please identify current park and recreational facility center usage for the City. Aliso Viejo Ranch hosts all rental and recreational programs for the City. This facility is managed by the Recreation & Community Services Department. The Iglesia Community Center and Park is a space managed by the Boys & Girls Club of Capistrano Valley as an after-school program for youth in the community. The Aliso Viejo Aquatic Center is managed by Premier Aquatics for swimming lessons. The Aliso Viejo Center is managed by Wedgewood Weddings as a banquet center.
3. Please provide an estimate of the current park acres per 1,000 residents and the target ratio that the Aliso Viejo Recreation & Community Services would like to achieve. The City owns and manages Vista Park and Iglesia Park. The total acreage of these two parks is 7.4 acres. The Master Homeowners Association is responsible for 21 parks and 600 acres of landscape. The City's Conservation/Open Space Element states that as of 2003, the City had a ratio of 5.37 acres of parkland per 1,000 residents. It further states that the standard is 5 acres per 1,000 residents and that new development shall provide fees or dedicate land per the City's code.
4. Please describe concerns related to potential population growth associated with the proposed project. Please describe any measures that you would recommend to reduce potential concerns/challenges. The proposed project may have several concerns related to population rise, such as, potential increase to traffic/congestion, strain on infrastructure, change in character of the immediate and larger area, and other environmental impacts, etc. Examples of mitigation measures may include some type of improvement or upgrades to traffic management, infrastructure, police/fire services etc.

So Kim | Director of Community Development

ALISO VIEJO
Live Life Inspired

City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656
T: 949-425-2527
avcity.org

From: Henry Welch <hwelch@fcs-intl.com>
Sent: Monday, December 16, 2024 10:00 AM
To: Lizzy Mendoza <LMendoza@AVCity.org>; Recreation Department <recreation@AVCity.org>
Cc: Alex Ortiz <aortiz@fcs-intl.com>
Subject: RE: 95 Argonaut Residential Project – Park Services

CAUTION: This email originated from outside of our City of Aliso Viejo network. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Recreation & Community Services Manager Lizzy Mendoza,

FirstCarbon Solutions (FCS) is preparing a Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) to identify any potential environmental impacts that would result from implementation of the 95 Argonaut Residential Project in the City of Aliso Viejo, California that requires review under the California Environmental Quality Act (CEQA).

The attached pdf shows the full letter with project description as well as relevant exhibits maps showing the proposed rezoning areas. Inside you will find the Service Questions we have for Park Services.

We greatly appreciate your expertise and assistance in this matter. Your responses will help us ensure that our analysis is accurate and complete. To ensure a timely completion of our analysis, please provide your response via e-mail no later than the End of December 2024. I understand the Holidays make for unusual schedules. If you have any questions, please contact me by email at hwelch@fcs-intl.com

Thank you again and I wish you the best during these Holidays.
Sincerely

Henry Welch

ES Analyst

hwelch@fcs-intl.com

Available Working Hours

Monday: 9:00am - 4:30pm

Tuesday -Thursday: 10:30am - 5pm

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Outlook

RE: Question about total Park Square Footage

From Chris Weaver <cweaver@avca.net>
Date Wed 12/18/2024 4:14 PM
To Henry Welch <hwelch@fcs-intl.com>

> **Caution:** This is an external email and may contain suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, please contact your IT Department

Hi Henry,

Roughly 179 Acres of Parks. (Unverified)

Chris Weaver
Director of Parks & Landscape
Aliso Viejo Community Association

ALISO VIEJO
COMMUNITY ASSOCIATION

130 Vantis Dr., Suite 110
Aliso Viejo, CA 92656
(949) 243-7750 Phone
(949) 425-1372 Fax
www.avca.net

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From: Henry Welch <hwelch@fcs-intl.com>
Sent: Wednesday, December 18, 2024 12:53 PM
To: Chris Weaver <cweaver@avca.net>
Subject: Question about total Park Square Footage

You don't often get email from hwelch@fcs-intl.com. Learn why this is important

Caution: This is an external email. Please be cautious when replying to this email and/or opening attachments. Only open attachments when they are expected and you know the content is safe.

Hello,

My name is Henry Welch and I had a quick question about the total square footage/acres of the 21 parks under the AVCA in Aliso Viejo . On the home page, I see that there is "21 parks and 600 acres of landscape", but I was curious in just park area itself.

I'm researching the current Parkland to resident ratio for the City.
Thank you so much for your assistance and I wish you a lovely Holiday Season.

Henry Welch

ES Analyst

hwelch@fcs-intl.com

Available Working Hours

Monday: 9:00am - 4:30pm

Tuesday -Thursday: 10:30am - 5pm

HOLIDAY Hours

Monday: 9-5

Tuesday: 1pm-4pm

Wed & Thurs: Off

Friday: Available 2-5pm

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Outlook

FW: 95 Argonaut Residential Project – Library Services

From Oakley, Julie <Julie.Oakley@occr.ocgov.com>
Date Fri 12/20/2024 3:14 PM
To Henry Welch <hwelch@fcs-intl.com>

1 attachment (4 MB)
Final Library.pdf;

Caution: This is an external email and may contain suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, please contact your IT Department

Hello Henry,

Per your request, please see the answers below:

Let me know if you have any further questions as the project develops.

Thank you,

Julie A. Oakley
Library Administration
1501 E. St. Andrew Place, Santa Ana, CA 92705
Office: 714-566-3024| **Cell:** 714-788-7312

Service Questions

1. Please identify the Aliso Viejo Library's current library membership for the City.

OC Public Libraries (OCPL) provides library services to the City of Aliso Viejo through its systemwide network of 32 branches across the county. Membership is not specific to individual branches, meaning that residents of Aliso Viejo have access to resources and services throughout the entire OCPL system.

Because the library closed in early 2024 for a tenant enhancement project, statistics provided are from the calendar year 2023. That year the Aliso Viejo Library had 140,931 visitors, with an average daily attendance of 470 people.

2. Please provide an estimate of the current Aliso Viejo Library services demand and the target ratio that the Aliso Viejo Library would like to achieve.

The site is currently closed for tenant enhancements but will reopen in 2025, with services targeting all ages from toddlers to seniors. Based on other remodel projects, upon reopening an increase in usage is expected as the space will be redesigned to include quiet study rooms, more electricity, seating available throughout the branch, and a new program room added for events.

3. Please describe concerns related to potential population growth associated with the project. Please describe any measures that you would recommend to reduce potential concerns/challenges.

The projected increase of 61 townhomes at an average resident count of 3 people per unit (estimate of 183 new residents) would not have a significant impact on the library and its services. The branch is two miles from the proposed project, and we would welcome those in the new community to visit the branch and see what OCPL has to offer.

From: Henry Welch <hwelch@fcs-intl.com>
Sent: Monday, December 16, 2024 9:56 AM
To: alisoviejo, ocpl <ocpl.alisoviejo@occr.ocgov.com>
Cc: Alex Ortiz <aortiz@fcs-intl.com>
Subject: RE: 95 Argonaut Residential Project – Library Services

Attention: This email originated from outside the County of Orange. Use caution when opening attachments or links.

Dear Aliso Viejo Library Staff,

FirstCarbon Solutions (FCS) is preparing a Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) to identify any potential environmental impacts that would result from implementation of the 95 Argonaut Residential Project in the City of Aliso Viejo, California that requires review under the California Environmental Quality Act (CEQA).

The attached pdf shows the full letter with project description as well as relevant exhibits maps showing the proposed rezoning areas. Inside you will find the Service Questions we have for Library Services.

We greatly appreciate your expertise and assistance in this matter. Your responses will help us ensure that our analysis is accurate and complete. To ensure a timely completion of our analysis, please provide your response via e-mail no later than the End of December 2024. I understand the Holidays make for unusual schedules. If you have any questions, please contact me by email at hwelch@fcs-intl.com

Thank you again and I wish you the best during these Holidays.
Sincerely

Henry Welch

ES Analyst

hwelch@fcs-intl.com

Available Working Hours

Monday: 9:00am - 4:30pm

Tuesday -Thursday: 10:30am - 5pm

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APPENDIX I:

Transportation Supporting Information

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MEMORANDUM

URBAN | CROSSROADS

DATE: June 4, 2025
TO: Johanna Crooker, Meritage Homes
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 16039-01 VMT

ARGONAUT RESIDENTIAL VEHICLE MILES TRAVELED (VMT) SCREENING EVALUATION

Urban Crossroads, Inc. has completed a Vehicle Miles Traveled (VMT) Screening Evaluation for the Argonaut Residential development (**Project**), which is located at 95 Argonaut (on the southeast corner of Glenwood Drive and Argonaut) in the City of Aliso Viejo.

PROJECT OVERVIEW

The Project site is located at 95 Argonaut which is currently developed with a 49,975-square-foot office building. The existing office building is currently occupied. The Project includes demolition of the existing structures on-site for the development of 61 3-story (12 2-bedroom, 26 3-bedroom, and 24 4-bedroom units) townhomes on approximately 2.85 acres. A site plan for the proposed Project is found in Attachment A.

BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to adopt VMT as the measure for identifying transportation impacts for land use projects. To comply with CEQA, the City of Aliso Viejo adopted Transportation Impact Guidelines for CEQA and General Plan Consistency (May 2022) (1) (**City Guidelines**). This VMT screening has been prepared based on the adopted City Guidelines.

VMT SCREENING

City Guidelines outline appropriate screening criteria for identifying when a proposed land use project is expected to have a less-than-significant impact, thus avoiding the need for a more detailed analysis.

The screening criteria are divided into the following:

- Step 1: Transit Priority Areas (TPA) Screening
- Step 2: Low VMT Area Screening

- Step 3: Project Type Screening

A land use project needs only to meet one of the above screening criteria to result in a less than significant impact.

STEP 1: TRANSIT PRIORITY AREAS (TPA) SCREENING

Consistent with guidance identified in the City Guidelines, projects located within a Transit Priority Area (TPA) or High-Quality Transit Area (HQTA) (i.e., within ½ mile of an existing "major transit stop"[1] or an existing stop along a "high-quality transit corridor"[2]) may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Consistent with City Guidelines, Aliso Viejo does not have any TPAs within the City.

TPA screening criteria is not met.

STEP 2: LOW VMT AREA SCREENING

As noted in the City Guidelines, projects located in low VMT areas (below the City of Aliso Viejo General Plan Buildout average) are presumed to be less than significant. The sub-regional Orange County Transportation Analysis Model (OCTAM) version 5.1 was used to measure VMT performance within individual traffic analysis zones (TAZs) in the Orange County region. The Project's physical location in OCTAM was used to determine VMT generated by the existing TAZ as compared to the City's impact threshold of General Plan Buildout average VMT per service population. Based on the OCTAM model results, the City's General Plan Buildout average is 26.2 VMT per service population is shown in Table 1.

TABLE 1: CITY OF ALISO VIEJO VMT PER CAPITA

	General Plan Buildout
Service Population	73,056
Total VMT	1,914,152
Threshold VMT per Service Population	26.2

The TAZ containing the proposed Project (TAZ 1542) was selected, and the OCTAM base year (2019) and horizon year (2050) models were used to calculate the baseline (2025) VMT per service population measure using straight-line interpolation, as shown in Table 2.

[1] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").
[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

TABLE 2: EXISTING TAZ 1542 VMT PER SERVICE POPULATION

	Baseline
Service Population	3,398
Total VMT	96,124
VMT per Service Population	28.3
City Threshold VMT per Service Population	26.2
Is TAZ 1542 in a Low VMT Area?	No

The Project's TAZ 1542 was shown to generate 28.3 VMT per service population, exceeding the General Plan buildout VMT per service population. Therefore, the Project is not located within a low VMT-generating area.

Low VMT Area screening criteria is not met.

STEP 3: PROJECT TYPE SCREENING

The City Guidelines state that local serving uses such as; day care centers, non-destination hotels, affordable housing, places of worship, municipal services, and other local essential services may also be presumed to have a less than significant impact as local serving in nature and would tend to shorten vehicle trips. The Project does not include any local serving uses.

The City Guidelines also consider small projects that generate fewer than 110 net new daily vehicle trips to have a less than significant VMT impact. The Argonaut Residential Trip Generation Assessment (Urban Crossroads, June 2025) estimates the Project to generate a net increase of 79 daily vehicle trips, which does not exceed the 110 daily vehicle trip threshold.

Small Projects screening criteria is met.

CONCLUSION

Based on our review of the City's VMT screening types, the Project meets the Project Type screening criteria and is considered to have a less than significant VMT impact; no additional VMT analysis is required.

If you have any questions, please contact me directly at aso@urbanxroads.com.

REFERENCES

1. **City of Aliso Viejo.** *Transportation Impact Guidelines for CEQA and General Plan Consistency.* May 2020.

ATTACHMENT A
PROJECT SITE PLAN


GLENWOOD DRIVE
ARGONAUT
ARGONAUT
ALLEY A
ALLEY B
ALLEY C
ALLEY D
ALLEY E
ALLEY F
BLDG 1
BLDG 2
BLDG 3
BLDG 4
BLDG 5
BLDG 6
BLDG 7
BLDG 8
EXISTING WATER TANK
EXISTING BUILDING
22'-2"
24'-0"
29'-6"
30'-0"
32'-0"
13'-6"

MEMORANDUM

URBAN | CROSSROADS



DATE: June 4, 2025
TO: Johanna Crooker, Meritage Homes
FROM: Charlene So, Urban Crossroads, Inc.
JOB NO: 16039-06 TG Memo

ARGONAUT RESIDENTIAL TRIP GENERATION ASSESSMENT

Urban Crossroads, Inc. is pleased to provide the following Trip Generation Assessment for the Argonaut Residential development (**Project**), located at 95 Argonaut (on the southeast corner of Glenwood Drive and Argonaut) in the City of Aliso Viejo. This trip generation assessment describes the proposed Project trip generation and determines whether any traffic operations analysis is required based on the City's Transportation Impact Guidelines for CEQA and General Plan Consistency (**City Guidelines**), dated May 2020. The purpose of the following trip generation assessment is to determine if any additional peak hour intersection operations analysis is required based on the City Guidelines.

PROPOSED PROJECT

The Project site is located at 95 Argonaut which is currently developed with a 49,975-square-foot office building. The existing office building is currently occupied (the occupancy rate at the time of the driveway counts in May 2024 was 45 percent). The Project includes demolition of the existing structures on-site for the development of 61 3-story (12 2-bedroom, 26 3-bedroom, and 24 4-bedroom units) townhomes on approximately 2.85 acres. A preliminary site plan for the proposed Project is shown in Exhibit 1. As indicated in Exhibit 1, access to the site will be accommodated via Argonaut.

EXHIBIT 1: PRELIMINARY SITE PLAN



TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to, and produced by, a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to, and produced by, specific land uses being proposed for a given development.

EXISTING USE

As noted previously, the site is currently developed with an occupied 49,975-square-foot office building. In an effort to understand the existing traffic associated with the existing uses, traffic counts were collected at all applicable driveways on Tuesday, May 7, 2024, through Thursday, May 9, 2024. Table 1 below summarizes the average existing trip generation based on the count data collected over the three consecutive days for the existing used located at 95 Argonaut. The existing site generates an average of 150 two-way trips per day, with 17 trips during the AM peak hour and 11 trips during the PM peak hour. A detailed summary of the count data collected at 95 Argonaut is provided in Attachment A.

TABLE 1: EXISTING OFFICE TRIP GENERATION SUMMARY (EMPIRICAL DATA)

	AM Peak Hour			PM Peak Hour			
Existing Surveyed Site	In	Out	Total	In	Out	Total	Daily
Existing Use: 95 Argonaut[1]							
Passenger Cars:	15	2	17	3	8	11	142
2-axle Trucks:	0	0	0	0	0	0	6
3-axle Trucks:	0	0	0	0	0	0	2
Average Total Trips (45% Occupancy)	**15**	**2**	**17**	**3**	**8**	**11**	**150**

[1] Average data presented based on driveway counts conducted on May 7th through May 9th, 2024.

At the time the driveway counts were conducted for the existing office use, the building was not fully occupied. The building was approximately 45 percent occupied at the time the driveway counts were conducted in May 2024. As such, in order to consider the by-right office use trip generation associated with the existing use, the trip generation in Table 1 was increased to account for the 55 percent vacancy. Table 2 summarizes the existing office use trip generation, which is anticipated to generate 333 two-way trips per day with 38 AM peak hour trips and 24 PM peak hour trips at full occupancy.

Table 2: Existing Office Trip Generation Summary (100% Occupancy)

	AM Peak Hour			PM Peak Hour			
Existing Surveyed Site	In	Out	Total	In	Out	Total	Daily
Existing Use: 95 Argonaut[1]							
Passenger Cars:	33	5	38	6	19	24	316
2-axle Trucks:	0	0	0	0	0	0	13
3-axle Trucks:	0	0	0	0	0	0	4
Average Total Trips (100% Occupancy)	**33**	**5**	**38**	**6**	**19**	**24**	**333**

[1] Average May 7th through May 9th, 2024 count data increased for full occupancy.

PROPOSED PROJECT

The proposed Project includes the redevelopment of the site to accommodate 62 3-story townhomes. Trip generation estimates for the proposed Project have been developed using data from the ITE Trip Generation Manual (11th Edition, 2021) for Multifamily (Low-Rise) Housing (ITE Land Use Code 220). Table 3 summarizes the ITE trip generation rates and the resulting Project trip generation. The proposed Project is anticipated to generate 418 two-way trips per day with 25 AM peak hour trips and 32 PM peak hour trips.

TABLE 3: PROPOSED PROJECT TRIP GENERATION SUMMARY

Land Use	ITE LU Code	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Trip Generation Rates:[2]									
Multifamily Housing (Low-Rise)	220	DU	0.10	0.30	0.40	0.32	0.19	0.51	6.74

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Trip Generation Summary:									
Multifamily Housing (Low-Rise)	61	DU	6	19	25	20	12	32	412

[1] DU = Dwelling Units

[2] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

TRIP GENERATION COMPARISON

The trip generation for the proposed Project and the net change in trips as compared to the existing office use (assuming 100% occupancy) are summarized in Table 4. As shown in Table 4, the proposed Project is anticipated to result in a net increase of 79 two-way trips per day with a net reduction of 13 AM peak hour trips and a net increase of 8 PM peak hour trips as compared to the existing office use (per Table 2).

TABLE 4: TRIP GENERATION COMPARISON

	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Existing Use: Office (Table 2)	49.975	TSF	33	5	38	6	19	24	333
Proposed Project: Residential	62	DU	6	19	25	20	12	32	412
Net Change in Trips			**-27**	**14**	**-13**	**14**	**-7**	**8**	**79**

[1] TSF = Thousand Square Feet; DU = Dwelling Units

FINDINGS

The City Guidelines require a Traffic Impact Analysis (TIA) if a project generates more than 100 vehicle trips during either the AM or PM peak hours, generate more than 1,600 vehicles per day (ADT), or if a project adds more than 51 peak hour trips to either the AM or PM peak hours to any intersection. As shown in both Table 4, the Project is anticipated to generate fewer than 1,600 net new daily trips and fewer than 50 net new peak hour trips. As such, additional traffic analysis is not required for this Project based on the City Guidelines. The City reserves the right to require additional traffic analysis in the event there are safety concerns, a project is located in a sensitive area, access/operational issues, presence of nearby substandard intersection or roadway segment, and/or request from an affected agency.

If you have any questions or comments, I can be reached at cso@urbanxroads.com.

ATTACHMENT A: DRIVEWAY COUNTS

TABLE A-1: TRIP GENERATION SUMMARY BY DAY

Land Use	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Tuesday, May 7, 2024							
Passenger Cars:	12	1	13	0	11	11	127
2-axle Trucks:	0	0	0	0	0	0	0
3-axle Trucks:	0	0	0	0	0	0	0
Tuesday Total Trips	**12**	**1**	**13**	**0**	**11**	**11**	**127**
Wednesday, May 8, 2024							
Passenger Cars:	14	1	15	7	4	11	143
2-axle Trucks:	0	0	0	0	0	0	11
3-axle Trucks:	0	0	0	0	0	0	0
Wednesday Project Trips	**14**	**1**	**15**	**7**	**4**	**11**	**154**
Thursday, May 9, 2024							
Passenger Cars:	18	5	23	1	10	11	154
2-axle Trucks:	0	0	0	0	0	0	2
3-axle Trucks:	0	0	0	0	0	0	2
Thursday Project Trips	**18**	**5**	**23**	**1**	**10**	**11**	**158**

City: Aliso Viejo
Location: 95 Argonaut
Date: Tuesday, May 7, 2024
Count Type: Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	1	0	0	0	1
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	1	0	0	0	1
7:00	0	0	0	0	0
7:15	0	0	0	0	0
7:30	4	0	0	0	4
7:45	2	0	0	0	2
8:00	4	0	0	0	4
8:15	2	0	0	0	2
8:30	1	0	0	0	1
8:45	0	0	0	0	0
9:00	2	0	0	0	2
9:15	1	0	0	0	1
9:30	1	0	0	0	1
9:45	1	0	0	0	1
10:00	1	0	0	0	1
10:15	0	0	0	0	0
10:30	4	0	0	0	4
10:45	4	0	0	0	4
11:00	3	0	0	0	3
11:15	1	0	0	0	1
11:30	2	0	0	0	2
11:45	3	0	0	0	3

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	1	0	0	0	1
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	0	0	0	0	0
5:45	1	0	0	0	1
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	0	0	0	0	0
7:15	0	0	0	0	0
7:30	0	0	0	0	0
7:45	1	0	0	0	1
8:00	0	0	0	0	0
8:15	0	0	0	0	0
8:30	0	0	0	0	0
8:45	0	0	0	0	0
9:00	0	0	0	0	0
9:15	1	0	0	0	1
9:30	1	0	0	0	1
9:45	0	0	0	0	0
10:00	2	0	0	0	2
10:15	1	0	0	0	1
10:30	1	0	0	0	1
10:45	2	0	0	0	2
11:00	1	0	0	0	1
11:15	2	0	0	0	2
11:30	1	0	0	0	1
11:45	5	0	0	0	5

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City:	Aliso Viejo
Location:	95 Argonaut
Date:	Tuesday, May 7, 2024
Count Type:	Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	2	0	0	0	2
12:15	1	0	0	0	1
12:30	1	0	0	0	1
12:45	1	0	0	0	1
13:00	3	0	0	0	3
13:15	1	0	0	0	1
13:30	1	0	0	0	1
13:45	2	0	0	0	2
14:00	1	0	0	0	1
14:15	0	0	0	0	0
14:30	1	0	0	0	1
14:45	0	0	0	0	0
15:00	2	0	0	0	2
15:15	5	0	0	0	5
15:30	0	0	0	0	0
15:45	0	0	0	0	0
16:00	0	0	0	0	0
16:15	0	0	0	0	0
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	1	0	0	0	1
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	1	0	0	0	1
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	2	0	0	0	2
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	**63**	**0**	**0**	**0**	**63**

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	2	0	0	0	2
12:15	1	0	0	0	1
12:30	1	0	0	0	1
12:45	2	0	0	0	2
13:00	3	0	0	0	3
13:15	1	0	0	0	1
13:30	2	0	0	0	2
13:45	3	0	0	0	3
14:00	0	0	0	0	0
14:15	1	0	0	0	1
14:30	2	0	0	0	2
14:45	0	0	0	0	0
15:00	1	0	0	0	1
15:15	3	0	0	0	3
15:30	2	0	0	0	2
15:45	0	0	0	0	0
16:00	0	0	0	0	0
16:15	6	0	0	0	6
16:30	2	0	0	0	2
16:45	2	0	0	0	2
17:00	1	0	0	0	1
17:15	0	0	0	0	0
17:30	2	0	0	0	2
17:45	1	0	0	0	1
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	1	0	0	0	1
19:15	1	0	0	0	1
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	1	0	0	0	1
21:30	0	0	0	0	0
21:45	2	0	0	0	2
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	1	0	0	0	1
23:00	0	0	0	0	0
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
	64	**0**	**0**	**0**	**64**

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

2530

City:	Aliso Viejo
Location:	95 Argonaut
Date:	Wednesday, May 8, 2024
Count Type:	Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	1	0	0	0	1
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	1	0	0	0	1
7:00	1	0	0	0	1
7:15	1	0	0	0	1
7:30	2	0	0	0	2
7:45	3	0	0	0	3
8:00	2	0	0	0	2
8:15	6	0	0	0	6
8:30	2	0	0	0	2
8:45	4	0	0	0	4
9:00	2	0	0	0	2
9:15	0	0	0	0	0
9:30	2	1	0	0	3
9:45	1	0	0	0	1
10:00	0	0	0	0	0
10:15	0	0	0	0	0
10:30	3	0	0	0	3
10:45	1	0	0	0	1
11:00	3	0	0	0	3
11:15	2	0	0	0	2
11:30	1	0	0	0	1
11:45	1	1	0	0	2

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	0	0	0	0	0
5:45	1	0	0	0	1
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	0	0	0	0	0
7:15	0	0	0	0	0
7:30	1	0	0	0	1
7:45	0	0	0	0	0
8:00	0	0	0	0	0
8:15	1	0	0	0	1
8:30	0	0	0	0	0
8:45	0	0	0	0	0
9:00	2	0	0	0	2
9:15	1	0	0	0	1
9:30	1	0	0	0	1
9:45	0	0	0	0	0
10:00	1	0	0	0	1
10:15	0	0	0	0	0
10:30	0	0	0	0	0
10:45	3	0	0	0	3
11:00	4	0	0	0	4
11:15	0	0	0	0	0
11:30	1	0	0	0	1
11:45	3	1	0	0	4

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City:	Aliso Viejo
Location:	95 Argonaut
Date:	Wednesday, May 8, 2024
Count Type:	Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	2	0	0	0	2
12:15	0	0	0	0	0
12:30	3	0	0	0	3
12:45	1	0	0	0	1
13:00	1	1	0	0	2
13:15	0	1	0	0	1
13:30	1	0	0	0	1
13:45	2	0	0	0	2
14:00	0	0	0	0	0
14:15	1	0	0	0	1
14:30	2	0	0	0	2
14:45	0	1	0	0	1
15:00	0	0	0	0	0
15:15	1	0	0	0	1
15:30	0	0	0	0	0
15:45	0	0	0	0	0
16:00	0	0	0	0	0
16:15	1	0	0	0	1
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	0	0	0	0	0
17:15	1	0	0	0	1
17:30	1	0	0	0	1
17:45	5	0	0	0	5
18:00	2	0	0	0	2
18:15	0	1	0	0	1
18:30	1	0	0	0	1
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	1	0	0	0	1
20:45	3	0	0	0	3
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	1	0	0	0	1
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	1	0	0	0	1
22:45	0	0	0	0	0
23:00	1	0	0	0	1
23:15	0	0	0	0	0
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	**71**	**6**	**0**	**0**	**77**

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	1	0	0	0	1
12:15	3	0	0	0	3
12:30	1	0	0	0	1
12:45	1	0	0	0	1
13:00	1	1	0	0	2
13:15	1	0	0	0	1
13:30	0	1	0	0	1
13:45	3	0	0	0	3
14:00	0	0	0	0	0
14:15	1	0	0	0	1
14:30	0	0	0	0	0
14:45	1	1	0	0	2
15:00	3	0	0	0	3
15:15	2	0	0	0	2
15:30	2	0	0	0	2
15:45	2	0	0	0	2
16:00	2	0	0	0	2
16:15	1	0	0	0	1
16:30	6	0	0	0	6
16:45	1	0	0	0	1
17:00	1	0	0	0	1
17:15	2	0	0	0	2
17:30	0	0	0	0	0
17:45	1	0	0	0	1
18:00	1	0	0	0	1
18:15	1	1	0	0	2
18:30	0	0	0	0	0
18:45	1	0	0	0	1
19:00	0	0	0	0	0
19:15	0	0	0	0	0
19:30	0	0	0	0	0
19:45	4	0	0	0	4
20:00	3	0	0	0	3
20:15	0	0	0	0	0
20:30	1	0	0	0	1
20:45	1	0	0	0	1
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	1	0	0	0	1
22:00	2	0	0	0	2
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	1	0	0	0	1
23:00	0	0	0	0	0
23:15	1	0	0	0	1
23:30	0	0	0	0	0
23:45	0	0	0	0	0
	72	**5**	**0**	**0**	**77**

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

2532

City:	Aliso Viejo
Location:	95 Argonaut
Date:	Thursday, May 9, 2024
Count Type:	Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	1	0	0	0	1
5:30	0	0	0	0	0
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	1	0	0	0	1
6:45	0	0	0	0	0
7:00	1	0	1	0	2
7:15	2	0	0	0	2
7:30	2	0	0	0	2
7:45	1	0	0	0	1
8:00	7	0	0	0	7
8:15	2	0	0	0	2
8:30	2	0	0	0	2
8:45	7	0	0	0	7
9:00	7	0	0	0	7
9:15	2	0	0	0	2
9:30	0	0	0	0	0
9:45	1	0	0	0	1
10:00	0	0	0	0	0
10:15	1	0	0	0	1
10:30	6	0	0	0	6
10:45	1	0	0	0	1
11:00	2	0	0	0	2
11:15	0	0	0	0	0
11:30	2	0	0	0	2
11:45	2	0	0	0	2

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
0:00	0	0	0	0	0
0:15	0	0	0	0	0
0:30	0	0	0	0	0
0:45	0	0	0	0	0
1:00	0	0	0	0	0
1:15	0	0	0	0	0
1:30	0	0	0	0	0
1:45	0	0	0	0	0
2:00	0	0	0	0	0
2:15	0	0	0	0	0
2:30	0	0	0	0	0
2:45	0	0	0	0	0
3:00	0	0	0	0	0
3:15	0	0	0	0	0
3:30	0	0	0	0	0
3:45	0	0	0	0	0
4:00	0	0	0	0	0
4:15	0	0	0	0	0
4:30	0	0	0	0	0
4:45	0	0	0	0	0
5:00	0	0	0	0	0
5:15	0	0	0	0	0
5:30	1	0	0	0	1
5:45	0	0	0	0	0
6:00	0	0	0	0	0
6:15	0	0	0	0	0
6:30	0	0	0	0	0
6:45	0	0	0	0	0
7:00	1	0	1	0	2
7:15	1	0	0	0	1
7:30	0	0	0	0	0
7:45	0	0	0	0	0
8:00	0	0	0	0	0
8:15	0	0	0	0	0
8:30	1	0	0	0	1
8:45	4	0	0	0	4
9:00	1	0	0	0	1
9:15	0	0	0	0	0
9:30	0	0	0	0	0
9:45	4	0	0	0	4
10:00	1	0	0	0	1
10:15	2	0	0	0	2
10:30	3	0	0	0	3
10:45	1	0	0	0	1
11:00	5	0	0	0	5
11:15	2	0	0	0	2
11:30	3	0	0	0	3
11:45	2	0	0	0	2

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City: Aliso Viejo
Location: 95 Argonaut
Date: Thursday, May 9, 2024
Count Type: Classified Driveway Count

	Entering				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	4	0	0	0	4
12:15	1	0	0	0	1
12:30	2	0	0	0	2
12:45	0	0	0	0	0
13:00	0	0	0	0	0
13:15	2	0	0	0	2
13:30	4	0	0	0	4
13:45	2	0	0	0	2
14:00	1	0	0	0	1
14:15	1	0	0	0	1
14:30	1	0	0	0	1
14:45	0	0	0	0	0
15:00	1	0	0	0	1
15:15	1	1	0	0	2
15:30	0	0	0	0	0
15:45	1	0	0	0	1
16:00	0	0	0	0	0
16:15	0	0	0	0	0
16:30	0	0	0	0	0
16:45	0	0	0	0	0
17:00	1	0	0	0	1
17:15	1	0	0	0	1
17:30	0	0	0	0	0
17:45	0	0	0	0	0
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	0	0	0	0	0
19:00	0	0	0	0	0
19:15	1	0	0	0	1
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	2	0	0	0	2
22:45	0	0	0	0	0
23:00	0	0	0	0	0
23:15	1	0	0	0	1
23:30	0	0	0	0	0
23:45	0	0	0	0	0
TOTAL	**77**	**1**	**1**	**0**	**79**

	Exiting				
	Pass Veh	Large 2 Axle	3 Axle	4+ Axle	Total
12:00	1	0	0	0	1
12:15	3	0	0	0	3
12:30	2	0	0	0	2
12:45	0	0	0	0	0
13:00	2	0	0	0	2
13:15	2	0	0	0	2
13:30	2	0	0	0	2
13:45	3	0	0	0	3
14:00	0	0	0	0	0
14:15	2	0	0	0	2
14:30	1	0	0	0	1
14:45	2	0	0	0	2
15:00	1	0	0	0	1
15:15	3	1	0	0	4
15:30	1	0	0	0	1
15:45	2	0	0	0	2
16:00	1	0	0	0	1
16:15	2	0	0	0	2
16:30	6	0	0	0	6
16:45	1	0	0	0	1
17:00	1	0	0	0	1
17:15	0	0	0	0	0
17:30	1	0	0	0	1
17:45	1	0	0	0	1
18:00	0	0	0	0	0
18:15	0	0	0	0	0
18:30	0	0	0	0	0
18:45	1	0	0	0	1
19:00	0	0	0	0	0
19:15	1	0	0	0	1
19:30	0	0	0	0	0
19:45	0	0	0	0	0
20:00	0	0	0	0	0
20:15	0	0	0	0	0
20:30	0	0	0	0	0
20:45	0	0	0	0	0
21:00	0	0	0	0	0
21:15	0	0	0	0	0
21:30	0	0	0	0	0
21:45	0	0	0	0	0
22:00	0	0	0	0	0
22:15	0	0	0	0	0
22:30	0	0	0	0	0
22:45	1	0	0	0	1
23:00	1	0	0	0	1
23:15	0	0	0	0	0
23:30	1	0	0	0	1
23:45	0	0	0	0	0
	77	**1**	**1**	**0**	**79**

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

2534

FCS
An ADEC Innovation

95 Argonaut Residential Project

Mitigation Monitoring and Reporting Program

City of Aliso Viejo, Orange County, California
State Clearinghouse Number 2025100301

PREPARED FOR:

City of Aliso Viejo

12 Journey, Suite 100
Aliso Viejo, CA 92656
949.425.2525
Contact: So Kim, Community Development Director

PREPARED BY:

FirstCarbon Solutions

250 Commerce, Suite 210
Irvine, CA 92602
714.508.4100

Contact: Cecilia So, Project Director
Tsui Li, Project Manager

October 28, 2025

PREFACE

Section 21081.6 of the California Environmental Quality Act (CEQA) and CEQA Guidelines Section 15097 require a Lead Agency to adopt a Mitigation Monitoring and Reporting Program (MMRP) whenever it adopts a Mitigated Negative Declaration (MND) in conjunction with a project approval. The purpose of the MMRP is to ensure compliance with the mitigation measures occurs during project implementation.

The Draft IS/MND prepared for the proposed 95 Argonaut Street Residential Project (proposed project) concluded that project implementation could result in potentially significant effects on the environment, and mitigation measures were incorporated into the proposed project or are required as a condition of project approval that reduce these potential impacts to a less than significant level. This MMRP documents how and when the mitigation measures adopted by the Lead Agency will be implemented and confirms that potential environmental impacts are reduced to less than significant levels as identified in the Draft IS/MND.

This document does not discuss those subjects that the environmental analysis demonstrates would result in less than significant impacts and for which no mitigation was proposed or necessary.

Table 1: 95 Argonaut Residential Project Mitigation Monitoring and Reporting Program

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
2.4 Biological Resources					
MM BIO-1a: Nesting Bird Pre-construction Surveys If ground-disturbing or vegetation-removing construction activities or tree removal is proposed during the breeding/nesting season for migratory birds (February 1 through September 15), a qualified Biologist shall conduct pre-construction surveys for special-status birds and other migratory birds within the construction area, including a 300-foot survey buffer (where accessible), no more than 3 days prior to the start of ground-disturbing activities in the construction area.	Review and approval of pre-construction survey report prepared by a qualified Biologist	Prior to the start of ground-disturbing or vegetation-removing construction activities during the breeding/nesting season (February 1 to September 15)	City of Aliso Viejo Planning Department		
MM BIO-1b: Avoidance of Active Avian Nests If an active nest (i.e., occupied by eggs or fledglings) is located during pre-construction surveys or at any point during the construction phase of the proposed project, the City of Aliso Viejo shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until the eggs or fledglings no longer are in the nest or a qualified Biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and a 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.	Provide notification to the City of Aliso Viejo, establish exclusion zones on construction plans or alter the construction schedule; monitoring of construction site by a qualified Biologist; periodic site inspection	Prior to and during construction	City of Aliso Viejo Planning Department		
2.5 Cultural Resources					
MM CUL-1: Prior to the initiation of construction activities, all construction personnel conducting ground disturbance at the site	Verify retention of a qualified Archaeologist;	WEAP training shall occur prior to the	City of Aliso Viejo Planning Department		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
shall be provided a Worker Environmental Awareness Program (WEAP) cultural resources "tailgate" training. The training shall include visual aids, a discussion of applicable laws and statutes relating to archaeological resources, types of resources that may be found within the project site, and procedures to be followed in the event such resources are encountered. The training shall be conducted by an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology. An Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology shall conduct an updated survey of the site following demolition and exposure of native soils and prior to any project-related trenching or grading to check for the inadvertent exposure of cultural materials. This shall be followed by archaeological monitoring during the grading and trenching phase of the proposed project. At the completion of these phases, archaeological monitoring shall be reduced to periodic "spot checks." In the event exposed soils indicate cultural materials may be present, this may be followed by regular or full-time archaeological monitoring as determined by the Archaeologist.	Verify Worker Environmental Awareness Program (WEAP) training; Site inspection and submittal of documentation	initiation of construction activities; Updated site survey shall occur after demolition and exposure of native soils and prior to any project-related trenching or grading; Archaeological monitoring shall occur during grading and trenching			
MM CUL-2: In the event that buried archaeological resources are discovered during construction, operations shall stop within a 100-foot radius of the find and an Archaeologist who meets the Secretary of Interior's Professional Qualification Standards for archaeology shall be consulted to determine whether the resource requires further study. The qualified Archaeologist shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in	Site inspection; submittal of documentation; Submission of DPR forms; and incorporation of final Cultural Mitigation Measures, if any, into	During construction; upon discovery of buried archaeological resources	City of Aliso Viejo Planning Department		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
accordance with Section15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during construction within the project area shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria. If the resources are determined to be unique historic resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. The Lead Agency, along with other relevant or Tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.	future construction plans				
MM CUL-3: In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 shall be followed. If during	Site monitoring; inclusion of notes on construction plans; submittal of documentation;	In the event of the discovery of human remains during ground-disturbing	City of Aliso Viejo Planning Department		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
the course of project construction, there is accidental discovery or recognition of any human remains, the following steps shall be taken: 1. There shall be no further excavation or disturbance of the site where human remains are discovered and/or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine whether the remains are Native American and if an investigation of the cause of death is required. If the Coroner determines the remains to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the Most Likely Descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resource Code Section 5097.98. 2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD or on the project site in a location not subject to further subsurface disturbance: • The NAHC is unable to identify an MLD or the MLD failed to make a recommendation within 48 hours after being notified by the commission. • The descendant identified fails to make a recommendation.	Submission of correspondence with Coroner and NAHC,	activities or during project construction; NAHC notification shall occur within 24 hours after discovery			

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
• The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.					
2.7 Geology and Soils					
Conditions of Approval					
COA GEO-1: In accordance with Municipal Code 13.08.170, Soil Engineering and Engineering Geology Reports, a soil engineering and engineering geology report shall be required for grading projects unless otherwise waived by the building official. The reports shall include information appropriate for the site including any information required by the building official. Recommendations included in the reports and approved by the building official shall be incorporated in the grading plans or specifications. Accordingly, prior to issuance of grading permit, the project applicant shall provide grading plans or specifications that include all recommendations from the proposed project's May 31, 2024, Geotechnical Subsurface Exploration Due Diligence Study prepared by SA Geotechnical, Inc., or from the latest geotechnical study for the proposed project.	Submission of soil engineering and engineering geology report and inclusion in project plans; site inspection; submission of plans	Prior to the issuance of a grading permit; during and following project construction	City of Aliso Viejo Planning Department		
Mitigation Measures					
MM GEO-1: The project applicant shall enlist a qualified Paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) to prepare a Worker Environmental Awareness Program (WEAP) presentation for construction personnel. It will include information on paleontological resources,	Documentation of retention of a qualified Paleontologist; Verify WEAP training; site inspection; submittal of	Paleontologist retention and WEAP training shall occur prior to grading and construction;	City of Aliso Viejo Planning Department		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
laws protecting them, types of fossils that could occur at the project site, and protocol for unanticipated discoveries. In the event that fossils are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify the qualified Paleontologist to examine the discovery. The qualified Paleontologist shall document the discovery as needed in accordance with SVP standards, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. Based on the significance of the find, the qualified Paleontologist shall determine procedures to be followed before construction is allowed to resume at the location of the find. If, in consultation with the qualified Paleontologist, it is determined that avoidance is not feasible, the qualified Paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) to outline salvage and recovery procedures. If deemed necessary by the qualified Paleontologist, the PRIMP shall include construction monitoring requirements as well. The PRIMP shall be submitted to the City for review and approval and the approved plan shall be implemented.	documentation; Submission and city approval of PRIMP	Documentation shall be submitted after the discovery of paleontological resources during construction; If necessary, the PRIMP shall be approved by the City prior to resuming construction activities			
2.18 Tribal Cultural Resources					
Mitigation Measures					

MM TCR-1 :Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities The project applicant shall retain a Native American Monitor from or approved by both the Gabrieleño Band of Mission Indians – Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation. The Monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. A copy of the executed monitoring agreement shall be submitted to the Director of Community Development prior to the earlier date of either: (1) the commencement of any ground-disturbing activity, or (2) the issuance of any permit required to commence any ground-disturbing activity. The Monitor shall complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribes. Monitor logs shall identify and describe any discovered Tribal Cultural Resources (TCRs), including, but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, Tribal Cultural Resources, or TCRs), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of Monitor logs shall be provided	Retention of Tribal Monitor; submittal of copy of executed contract to City; Copies of monitor logs; inclusion of notes on construction plans; submittal of daily monitoring logs Submittal of written notice of completion from Monitor	Retention of a Native American Monitor shall occur prior to the commencement of ground-disturbing activity, and shall conclude upon written confirmation of the completion of ground-disturbing activities or confirmation that there is no potential for impacts to TCRs; Submittal of executed contract shall occur prior to the commencement of ground-disturbing activity or the issuance of any permit to commence ground-disturbing activity,	City of Aliso Viejo Community Development Director; City of Aliso Viejo Planning Department.		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
to the project applicant and the Director of Community Development upon written request to the Tribe. On-site Tribal monitoring shall conclude upon the latter of the following: (1) written confirmation to the Monitor and the Lead Agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Monitor to the Director of Community Development that no future planned construction activity and/or development/construction phase at the project site possesses the potential to impact to TCRs.					
MM TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-funerary/Non-ceremonial) Upon discovery of any Tribal Cultural Resources (TCRs), all construction activities in the immediate vicinity of the discovery (i.e., not less than the surrounding 50 feet) shall cease. The City shall consult with the project Archaeologist and initiate Native American consultation procedures with the project's consulting Tribes (Gabrieleño Band of Mission Indians-Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation). The consultation effort is intended to be a meaningful and timely process of seeking, discussing, and considering carefully the views of others in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement on the appropriate treatment and disposition of TCRs discovered. A Cultural Resources and Monitoring and Treatment Plan shall be created by the Archaeologist in coordination with the consulting Tribes (Gabrieleño Band of Mission Indians-Kizh Nation and the Juaneño	Site inspection and submittal of documentation; consultation with the project Archaeologist and NAHC; incorporation of final Cultural Mitigation Measures, if any, into future construction plans	Upon discovery of TCRs during demolition, grading, and excavation	City of Aliso Viejo Planning Department. NAHC Monitor		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
Band of Mission Indians, Acjachemen Nation) and all subsequent finds shall be subject to this plan. Project construction shall not resume within the immediate vicinity of the discovery (i.e., not less than the surrounding 50 feet) until a Cultural Resources and Monitoring Treatment Plan is prepared and implemented. The plan may include, but would not be limited to, reburying, relocating, recording, and/or another culturally appropriate treatment. If it is determined that mutual agreement cannot be reached within 30 days of the initial consultation meeting, the TCR(s) under review shall be reinterred on-site in a location free from future ground-disturbing construction activities. This measure does not apply to the finding of human remains, which must comply with California Health and Safety Code Section 7050.5.					
MM TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects A. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute. B. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource Code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed. C. Human remains and grave/burial goods shall be treated alike per California Public Resources Code Section 5097.98(d)(1) and (2).	Site monitoring. inclusion of notes on construction plans; submittal of documentation	During ground-disturbing activities	City of Aliso Viejo Planning Department. NAHC Monitor		

Requirements	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
D. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. **E.** Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.					
2.21 Mandatory Findings of Significance					
As described above: MM BIO-1a, MM BIO-1b, MM CUL-1, MM CUL-2, MM CUL-3, COA GEO-1, MM GEO-1, MM TCR-1, MM TCR-2, MM TCR-3.					

FCS
An ADEC Innovation

95 Argonaut Residential Project

ADMINISTRATIVE FINAL

Initial Study/Mitigated Negative Declaration

State Clearinghouse Number 2025100301

PREPARED FOR:

City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656
949.425.2525
Contact: So Kim, Community Development Director

PREPARED BY:

FirstCarbon Solutions
250 Commerce, Suite 210
Irvine, CA 92602
714.508.4100

Contact: Cecilia So, Project Director
Tsui Li, Project Manager

October 28, 2025

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Table of Contents

1 - Introduction 1

2 - Response to Written Comments 1

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1 - INTRODUCTION

Although a lead agency is not required to provide written responses to comments on proposed Negative Declarations (NDs) or Mitigated Negative Declarations (MNDs) under the California Environmental Quality Act (CEQA), the City of Aliso Viejo has evaluated the comments received on the 95 Argonaut Residential Project (State Clearinghouse No. 2025100301) (proposed project) Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) and has elected to provide responses to the following significant environmental comments. None of the comments received results in the need to recirculate the Draft IS/MND or to prepare an Environmental Impact Report (EIR). Furthermore, no comments require revisions or clarifications to the Draft IS/MND.

The Final IS/MND includes the following contents:

- Draft IS/MND (provided under separate cover)
- Draft IS/MND appendices (provided under separate cover)
- Responses to Written Comments
- Mitigation Monitoring and Reporting Program (provided under separate cover)

2 - RESPONSE TO WRITTEN COMMENTS

A list of public agencies, organizations, and individuals that provided comments on the Draft IS/MND is presented below. Each comment has been assigned a code. Individual comments within each communication have been numbered so comments can be crossed-referenced with responses. Following this list, the text of the communication is reprinted and followed by the corresponding response.

Author	Author Code
State Agencies	
California Department of Toxic Substances Control	DTSC

draft

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Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
dtsc.ca.gov

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

October 10, 2025

So Kim
Community Development Director
City of Aliso Viejo
12 Journey Suite 100
Aliso Viejo, CA 92656
skim@avcity.org

RE: MITIGATED NEGATIVE DECLARATION FOR THE 95 ARGONAUT RESIDENTIAL PROJECT DATED OCTOBER 7, 2025, STATE CLEARINGHOUSE # 2025100301

Dear So Kim,

The Department of Toxic Substances Control (DTSC) reviewed the Mitigated Negative Declaration (MND) for the 95 Argonaut Residential Project (Project). The proposed Project involves the demolition of an existing two-story, approximately 48,000-square-foot office building, along with the associated surface parking lot and landscaping. The site would be redeveloped with a residential infill community consisting of up to 61 three-story townhomes distributed across eight buildings. The townhomes would range in size from approximately 1,210 to 1,765 square feet and would offer a mix of two-, three- and four-bedroom units, each with an attached private two-car garage. The Project would also include 28 guest parking areas, pedestrian walkways, landscaped open spaces, and a recreational amenity area. 1

DTSC recommends and requests consideration of the following comments:

1. When agricultural crops and/or land uses are proposed or rezoned for residential use, several contaminants of concern (COCs) can be present. The Lead Agency shall identify the amounts of Pesticides and Organochlorine Pesticides (OCPs) historically used on the property. If present, OCPs requiring further analysis are 2

dichloro-diphenyl-trichloroethane, toxaphene, and dieldrin. Additionally, any level of arsenic present would require further analysis and sampling and must meet approved local area baselines or thresholds. If they do not, remedial action must take place to mitigate them below those thresholds. Additional COCs may be found in mixing/loading/storage areas, drainage ditches, farmhouses, or any other outbuildings and should be sampled and analyzed. If smudge pots had been routinely utilized, additional sampling for Polycyclic Aromatic Hydrocarbons and/or Total Petroleum Hydrocarbons may be required. These recommendations should be adhered to and become part of the environmental document. Please refer to the DTSC's Human and Ecological Risk Office (HERO) webpage for the most recent guidance and screening levels.

2 Continued

2. DTSC recommends all imported soil/fill material be tested to ensure all COCs meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Furthermore, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil/fill material there should be documentation of the origins of the soil/fill material and, if applicable, sampling be conducted to ensure that the imported soil/fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the soil/fill and knowledge of prior land use.

3

3. The City of Aliso Viejo should consider soil testing as mentioned in comment #1. If, in the event any COC results are above DTSC residential screening levels, DTSC recommends the City of Aliso Viejo address the contaminations within the Project area through an Environmental Site Assessment and/or receive oversight from a self-certified local agency, DTSC or Regional Water Quality Control Board. If entering into one of DTSC's voluntary agreements, please note that DTSC uses a single standard Request for Lead Agency Oversight Application for all agreement types. Please apply for DTSC oversight using this link: Request for Agency Oversight Application. Submittal of the online application includes an agreement to pay costs incurred during agreement preparation. If you have any

4

questions about the application portal, please contact the relevant Regional Brownfield Coordinator for your Project. 4 Continued

DTSC would like to thank you for the opportunity to comment on the MND for the 95 Argonaut Residential Project. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via our CEQA Review email for additional guidance. 5

Sincerely,

Dave Kereazis

Dave Kereazis
Associate Environmental Planner
HWMP-Permitting Division – CEQA Unit
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

cc: (via email)

Governor's Office of Land Use and Climate Innovation
State Clearinghouse
state.clearinghouse@lci.ca.gov

Tamara Purvis
Associate Environmental Planner
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Tamara.Purvis@dtsc.ca.gov

Scott Wiley
Associate Governmental Program Analyst
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Scott.Wiley@dtsc.ca.gov

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State Agencies

California Department of Toxic Substances Control (DTSC)

Response to DTSC-1

The commenter states that they have reviewed the project and summarizes the project description. This comment is noted, and no response is necessary.

Response to DTSC-2

The commenter explains that former agricultural land may contain contaminants of concern (COC), such as pesticides and organochlorine pesticides, which may require sampling and remediation.

Previous agricultural uses were analyzed in the Draft IS/MND. The project site is currently a commercial lot and has been used for similar purposes since 1982. The project site has not had agriculture uses since 1981. A Phase I Environmental Site Assessment (Phase I ESA) performed by Hillman Consulting, which reviews concerns of hazardous substances, confirmed that the project site had no Historical Recognized Environmental Condition (HREC), Controlled Recognized Environmental Condition (CREC), or Recognized Environmental Condition (REC). As noted in Section 2.9, Hazards and Hazardous Materials, given the 43 years since any agricultural use as well as the grading activities of current development, any remaining pesticide contamination is unlikely and therefore this is not considered to be a REC in connection with the project site. As such, the Phase I ESA determined that the previous agricultural use is not considered a REC, and impacts would be less than significant. Additionally, the proposed project would be required to comply with applicable regulatory requirements. The issues raised in this comment have been fully addressed by the analysis in Section 2.9, Hazards and Hazardous Materials.

Response to DTSC-3

The commenter recommends all imported soil/fill be tested for COC, and that proper documentation be used to ensure soil is suitable for intended land use.

The geotechnical report by SA Geotechnical INC stated that the existing fill materials are considered suitable for reuse as compacted fill for the site. As noted in the response above, the Phase I ESA determined that the previous agricultural uses are not a REC. Should new fill be needed, per Condition of Approval GEO-1, recommendations included in the reports and approved by the building official shall be incorporated in the grading plans or specifications. This includes the recommendation that the geotechnical consultant evaluate and accept any import of soils prior to transportation to the subject site. With these conditions and the project's compliance with California Building Standards Code (CBC) requirements, impacts would be less than significant, and the issues raised in this comment have been fully addressed by the analysis provided in the Draft IS/MND.

Response to DTSC-4

The commenter recommends that the City of Aliso Viejo do the soil testing mentioned in DTSC-2. If, in the event results are above DTSC residential screening levels, the commenter recommends the City address the contaminations through an ESA and/or receive oversight from a self-certified local agency.

Draft

Please see Response to DTSC-2. The comment and recommendation will be noted and reviewed by the City.

Response to DTSC-5

This comment consists of concluding statements No further response is required.

draft

RESOLUTION NO. 2025-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING AN AMENDMENT TO THE GENERAL PLAN LAND USE DESIGNATION AND ASSOCIATED LAND USE MAP FROM BUSINESS PARK TO HIGH DENSITY RESIDENTIAL FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01)

WHEREAS, on October 24, 2024, MLC Holdings, Inc. ("Applicant") submitted a general plan amendment, zone change, vesting tentative tract map, site development permit, and a development agreement application to demolish an existing office building and accommodate the construction of a multi-family residential community at 95 Argonaut ("Project");

WHEREAS, pursuant to section 21067 of the Public Resources Code, and section 15367 of the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.), the City is the lead agency for the proposed Project and has prepared an Initial Study/Mitigated Negative Declaration (SCH#2025100301) ("IS/MND") and a Mitigation Monitoring and Reporting Program ("MMRP") for the Project;

WHEREAS, on November 6, 2024, the City Council held a duly noticed public review to receive and provide initial feedback on concept plans for the Project;

WHEREAS, on November 5, 2025, the City Council held a study session to discuss development agreements and impact fees;

WHEREAS, on November 19, 2025, the City Council held a duly noticed public hearing, discussed the parameters of the public benefit contributions of the Development Agreement, and continued the meeting to December 3, 2025, to allow the Applicant additional time to address easement encroachment issues with the Aliso Viejo Community Association;

WHEREAS, on October 30, 2025, the City gave public notice of the City Council public hearing for consideration of a Mitigated Negative Declaration, General Plan Amendment GPA-2025-00002, Zone Change ZC-2025-00002, Vesting Tentative Tract Map 19340 and Site Development Permit SDP-2024-00001, for the Project by advertising in a newspaper of general circulation; by posting notices at City Hall and the Project site; and by mailing notices to owners of property within 300 feet, to the project applicant, and to local agencies that provide water, sewage, electricity and schools;

WHEREAS, on December 3, 2025, the City Council held a public hearing as prescribed by law and considered written and verbal public testimony that was submitted prior to the hearing and during the hearing, and evidence and recommendations presented by staff in the agenda report and oral presentation; and

WHEREAS, all other legal prerequisites to the adoption of this Resolution have occurred.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AS FOLLOWS:

Section 1. **Incorporation of Recitals.** The City Council hereby finds and determines that all of the recitals set forth above are true and correct. The above recitals are hereby incorporated as substantive findings of this Resolution.

Section 2. **CEQA.** Pursuant to the California Environmental Quality Act (Public Resources Code, § 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, title 14, § 15000 et seq.) (Collectively, "CEQA"), the City Council adopted Resolution No._____, determining that there is no substantial evidence that the approval of the Project would result in a significant adverse effect on the environment, provided appropriate mitigation measures, as identified in the MMRP, are imposed on the Project.

Section 3. **Findings for General Plan Amendment GPA-2025-00002.** Pursuant to AVMC 15.78.020 (General Plan Amendments), the City Council hereby makes the following findings of fact and approves an amendment to the General Plan land use designation and associated land use map from Business Park to High Density Residential, as set forth in Exhibit "A", which is attached hereto and incorporated herein by reference.

1. Public Welfare. Approval of the amendment will not create conditions materially detrimental to the public health, safety and general welfare. While the Site is located within a larger business park, it is at an entry corner, providing a natural transition between the non-residential uses and the surrounding residential neighborhoods. Directly across from the site to the north are established multi-family and single-family residential communities. Notably, the adjacent multi-family development shares several characteristics with the Project, including large buildings, each composed of six attached units. The architectural style is also complementary, featuring stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and shared open space without private driveways. The single-family tract homes surrounding that multi-family community are also similar in architectural style in terms of color, exterior finish, design, and materials. Additionally, the Site is situated in an area with established infrastructure, including roads, utilities, and public services, that can adequately support residential development. As part of the environmental assessment, the Project required comprehensive studies addressing air quality, energy, greenhouse gas emissions, biological resources, cultural resources, geotechnical conditions, hydrology and water quality, noise, and transportation impacts. As discussed further in the Environmental Assessment section below, these studies concluded that the Project would result in less-than-significant impacts with the implementation of proposed mitigation measures. The Project plans also cleared preliminary review by the Orange County Fire Authority. Furthermore, the Project aligns with the City's

housing goals by facilitating the development of new housing opportunities. Future construction on the Project site will be subject to plan check review and inspection process to ensure full compliance with applicable building and safety standards.

2. Internal General Plan Consistency. The amendment is consistent with the goals and policies of the General Plan listed below in that it incorporates landscaping aligned with the City Council-approved plant palette, emphasizing low-water, drought-tolerant species; features building materials, colors, and architectural design that are compatible with the surrounding residential communities; includes a development impact fee that a portion of which is consistent the City's parkland ordinance; proposes three affordable housing units restricted to very low-income households, thereby enhancing housing diversity and affordability; and introduces rezoning to facilitate residential development that includes affordable units in support of the City's housing objectives. In the General Plan, 'COS' refers to Conservation and Open Space policies, 'H' for Housing policies and goals, and 'LU' for Land Use policies.

    - Policy COS-1.2 Reduce the amount of water used for landscaping and increase use of native and low water plants. Maximize use of native, low-water plants for landscaping of areas adjacent to sidewalks or other impermeable surfaces.
    - Policy COS-4.2 Encourage and maintain high-quality architectural and landscaping designs that enhance or complement the community's visual character.
    - Policy COS-7.5 Ensure that new development provides park land and/or improvements at a fair share ratio, pursuant to the City's Parkland Ordinance.
    - Goal H-1: Encourage a diversity of housing types and provide affordability levels within Aliso Viejo to meet the needs of community residents.
    - Policy H-1.1 Identify sites appropriate for the development of a variety of housing types and price ranges to meet the needs of all socioeconomic segments of the community through the disbursement of affordable units in projects.
    - Policy H-1.2 Encourage through the use of density bonuses and rezoning to allow for residential development, development of affordable housing opportunities throughout the community, as well as development of housing for elderly and low- and moderate-income households near public transportation services.
    - Policy H-1.4 Ensure that a portion of future residential development is affordable to low- and very-low-income households by designating certain sites as having the potential to be used for residential uses.
    - Policy H-3.8 Review existing zoning policies and explore zoning changes to facilitate the development of affordable housing.
    - Policy LU-12.2 As a condition upon new development, require payment of park fees and/or dedication and provision of parkland, recreation facilities and/or multi-use trails that improve the public and private recreation system.

3. Land Use Compatibility. In the case of amendments to the general plan land use policy map, the new designation is compatible with the designations on nearby properties. The Project site is located at the edge of a larger business park and directly across from established multi-family and single-family residential neighborhoods. The adjacent multi-family development shares several characteristics with the Project, including large attached-unit buildings, stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and shared open space without private driveways. These similarities ensure architectural and functional continuity between the Project and existing residential uses. Furthermore, the transition from non-residential uses within the business park to residential neighborhoods is reinforced by the Project site's location at a corner entry, creating a natural buffer.

4. Property Suitability. In the case of amendments to the general plan land use policy map, the new designation is suitable for the location, access, visual character and topography of the subject property. The property is located along established roadways with adequate vehicular and pedestrian access and is supported by existing infrastructure, including utilities and public services, sufficient to accommodate residential development. The Project site is generally level, with a slight descending slope from east to west, and sits several feet below the street elevations to the north and west. Proposed grading will consist primarily of recompaction and limited export to further level the Project site, resulting in finished elevations comparable to current conditions. Architecturally, the Project incorporates building styles, materials, and landscaping consistent with adjacent residential communities, ensuring visual compatibility with the surrounding neighborhood. The Site's position at the entry corner of the business park further enhances its suitability, providing a natural transition between non-residential and residential uses.

Section 4. **Severability**. If any provision of this Resolution or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this Resolution that can be given effect without the invalid provision or application, and to this end the provisions of this Resolution are severable. The City Council hereby declares that it would have adopted this Resolution irrespective of the invalidity of any particular portion thereof.

Section 5: **Location of Documents.** The administrative record for the Project is maintained at City Hall located at 12 Journey, Suite 100, Aliso Viejo, CA 92656. The custodian of records is the City Clerk.

Section 6: **Effective Date.** This General Plan Amendment shall not take effect unless and until Zone Change, Vesting Tentative Tract Map 19340, Site Development Permit SDP-2024-00001, and the Development Agreement are each approved by the City Council and have become effective, and the associated Development Agreement is approved by the City Council and executed by both parties thereto.

Section 7. **Execution of Resolution**. The Mayor shall sign this Resolution and the City Clerk shall attest and certify to the passage and adoption thereof.

PASSED, APPROVED AND ADOPTED this 3rd day of December 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, KATHY BAILOR, City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Resolution No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the 3rd day of December 2025, by the following roll call vote, to wit:

AYES:

NOES:

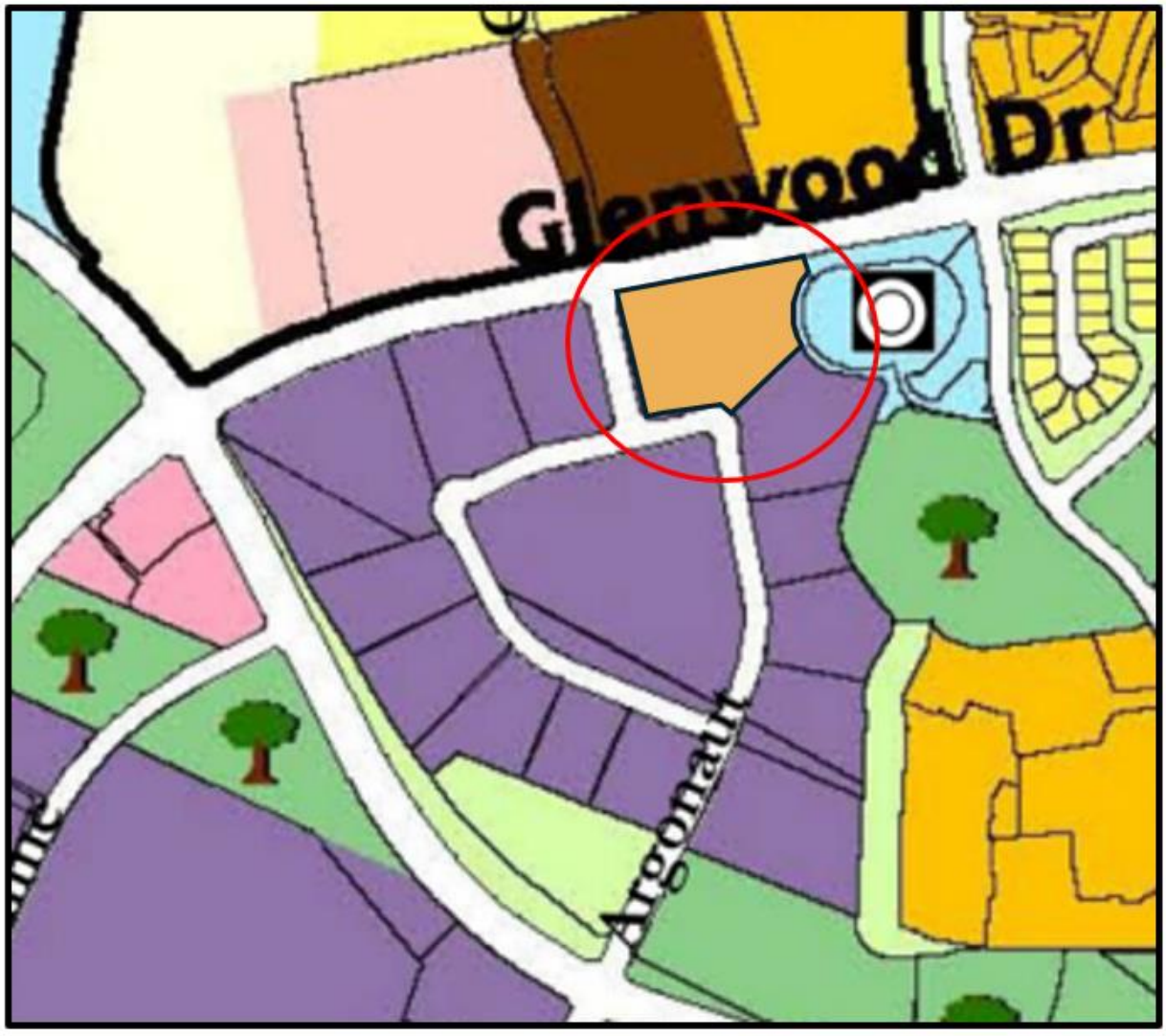
ABSENT:

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

Exhibit "A"
Amendment to the General Plan Land Use Map
Case No. GPA-2025-00002

Property Location – 95 Argonaut (see red-circled area below)
Existing Land Use Designation – Business Park ("BP")
Proposed Land Use Designation – High Density Residential (Max. 50 units/acre) ("HDR")



ORDINANCE NO. 2026-___

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING A ZONE CHANGE FROM BUSINESS PARK 2 TO HIGH DENSITY RESIDENTIAL DISTRICT FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (623-091-01)

WHEREAS, on October 24, 2024, MLC Holdings, Inc. ("Applicant") submitted a general plan amendment, zone change, vesting tentative tract map, site development permit, and a development agreement application to demolish an existing office building to accommodate the construction of a multi-family residential community at 95 Argonaut, which is comprised of 2.85 acres ("Project");

WHEREAS, pursuant to section 21067 of the Public Resources Code, and section 15367 of the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.), the City is the lead agency for the proposed Project and has prepared an Initial Study/Mitigated Negative Declaration (SCH #2025100301) ("IS/MND") and a Mitigation Monitoring and Reporting Program ("MMRP") for the Project;

WHEREAS, on November 6, 2024, the City Council held a duly noticed public review to receive and provide initial feedback on concept plans for the Project;

WHEREAS, on November 5, 2025, the City Council held a study session to discuss development agreements and impact fees;

WHEREAS, on November 19, 2025, the City Council held a duly noticed public hearing, discussed the parameters of the public benefit contributions of the Development Agreement, and continued the meeting to December 3, 2025, to allow the Applicant additional time to address easement encroachment issues with the Aliso Viejo Community Association;

WHEREAS, on October 30, 2025, the City gave public notice of the City Council public hearing for consideration of a Mitigated Negative Declaration, General Plan Amendment GPA-2025-00002, Zone Change ZC-2025-00002, Vesting Tentative Tract Map 19340 and Site Development Permit SDP-2024-00001, for the Project by advertising in a newspaper of general circulation; by posting notices at City Hall and the Project site; and by mailing notices to owners of property within 300 feet, to the project applicant, and to local agencies that provide water, sewage, electricity and schools;

WHEREAS, on December 3, 2025, the City Council held a duly noticed public hearing as prescribed by law and considered written and verbal public testimony that was submitted prior to the hearing and during the hearing, and evidence and recommendations presented by staff in the agenda report and oral presentation and introduced the Ordinance; and

WHEREAS, all legal prerequisites to the adoption of this Ordinance have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ALISO VIEJO DOES ORDAIN AS FOLLOWS:

Section 1. **Incorporation of Recitals.** The City Council hereby finds and determines that all of the recitals set forth above are true and correct. The above recitals are hereby incorporated as substantive findings of this Ordinance.

Section 2. **CEQA.** Pursuant to the California Environmental Quality Act (Public Resources Code, § 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, title 14, § 15000 et seq.) (Collectively, "CEQA"), the City Council adopted Resolution No._____, determining that there is no substantial evidence that the approval of the Project would result in a significant adverse effect on the environment, provided appropriate mitigation measures, as identified in the MMRP, are imposed on the Project;

Section 3. **Findings for Zone Change ZC-2025-00002.** Pursuant to AVMC 15.78.040 (Zone Change and Prezoning), the City Council hereby makes the following findings of fact and approves the Zone Change ZC-2025-00002 from Business Park 2 to High Density Residential, as set forth in Exhibit "A", which is attached hereto and incorporated herein by reference.

1. Public Welfare. Approval of the amendment will not create conditions materially detrimental to the public health, safety, or general welfare. The Project site, located at a prominent entry corner within a larger business park, provides a natural transition between non-residential uses and surrounding residential neighborhoods, with established multi-family and single-family communities directly to the north. The area is further supported by existing infrastructure such as roads, utilities, and public services capable of accommodating residential development, and comprehensive environmental studies concluded that, with mitigation measures, the project would result in less-than-significant impacts. Preliminary review by the Orange County Fire Authority confirmed compliance with emergency access and fire protection standards. Additionally, the provision of affordable housing within the project creates greater opportunities for homebuyers, while the park in-lieu fee will contribute to the well-being and quality of life in the community. Future construction on the site will be subject to plan check review and inspection processes to ensure full compliance with applicable building and safety standards.

2. General Plan Consistency. The zone change is consistent with the goals, objectives, and policies of the general plan and any applicable specific plan. With the approval of the General Plan land use amendment, the zone change is consistent with the General Plan goals and policies listed below in that it incorporates landscaping aligned with the City Council-approved plant palette, emphasizing low-water, drought-tolerant species; features building materials,

colors, and architectural design that are compatible with the surrounding residential communities; includes a development impact fee that a portion of which is consistent the City's parkland ordinance; proposes three affordable housing units restricted to very low-income households, thereby enhancing housing diversity and affordability; and introduces rezoning to facilitate residential development that includes affordable units in support of the City's housing objectives. In the General Plan, 'COS' refers to Conservation and Open Space policies, 'H' for Housing policies and goals, and 'LU' for Land Use policies.

- Policy COS-1.2 Reduce the amount of water used for landscaping and increase use of native and low water plants. Maximize use of native, low-water plants for landscaping of areas adjacent to sidewalks or other impermeable surfaces.
- Policy COS-4.2 Encourage and maintain high-quality architectural and landscaping designs that enhance or complement the community's visual character.
- Policy COS-7.5 Ensure that new development provides park land and/or improvements at a fair share ratio, pursuant to the City's Parkland Ordinance.
- Goal H-1: Encourage a diversity of housing types and provide affordability levels within Aliso Viejo to meet the needs of community residents.
- Policy H-1.1 Identify sites appropriate for the development of a variety of housing types and price ranges to meet the needs of all socioeconomic segments of the community through the disbursement of affordable units in projects.
- Policy H-1.2 Encourage through the use of density bonuses and rezoning to allow for residential development, development of affordable housing opportunities throughout the community, as well as development of housing for elderly and low- and moderate-income households near public transportation services.
- Policy H-1.4 Ensure that a portion of future residential development is affordable to low- and very-low-income households by designating certain sites as having the potential to be used for residential uses.
- Policy H-3.8 Review existing zoning policies and explore zoning changes to facilitate the development of affordable housing.
- Policy LU-12.2 As a condition upon new development, require payment of park fees and/or dedication and provision of parkland, recreation facilities and/or multi-use trails that improve the public and private recreation system.

3. Land Use Compatibility. The zone change is compatible with the zoning and land use on nearby properties. The Project site is located at the edge of a larger business park and directly across from established multi-family and single-family residential neighborhoods. The adjacent multi-family development shares several characteristics with the Project, including large attached-unit buildings, stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and shared open space without private driveways. These similarities ensure architectural and functional continuity between the Project and existing residential uses. Furthermore, the transition from non-residential uses within the business park to

residential neighborhoods is reinforced by the Project site's location at a corner entry, creating a natural buffer.

4. Property Suitability. The zone change is suitable for the location, access, visual character and topography of the subject property. The property is located along established roadways with adequate vehicular and pedestrian access and is supported by existing infrastructure, including utilities and public services, sufficient to accommodate future residential development. The Project site is generally level, with a slight descending slope from east to west, and sits several feet below the street elevations to the north and west. The Project site's position at the entry corner of the business park further enhances its suitability, providing a natural transition between non-residential and residential uses.

Section 4. **Effective Date.** This Zone Change Ordinance shall not take effect unless and until General Plan Amendment, Vesting Tentative Tract Map 19340, Site Development Permit SDP-2024-00001 and the Development Agreement are each approved by the City Council and have become effective, and the associated Development Agreement is approved by the City Council and executed by both parties thereto.

Section 5. **Severability.** If any provision of this Ordinance or its application to any person or circumstance is held to be invalid by a court of competent jurisdiction, such invalidity has no effect on the other provisions or applications of the Ordinance that can be given effect without the invalid provision or application, and to this extent, the provisions of this Ordinance are severable. The City Council declares that it would have adopted this Ordinance irrespective of the invalidity of any portion thereof.

Section 6. **Location of Documents.** The administrative record for the Project is maintained at City Hall located at 12 Journey, Suite 100, Aliso Viejo, CA 92656. The custodian of records is the City Clerk.

Section 7. **City Clerk's Certification.** The City Clerk shall certify to the adoption of this Ordinance and cause a summary thereof to be published five days prior to the date of adoption of this Ordinance, and, within 15 days after adoption, the City Clerk shall cause to be published the aforementioned summary and shall post a certified copy of this Ordinance, together with the vote for and against the same, in the Office of the City Clerk.

PASSED, APPROVED AND ADOPTED this ___ day of _____, 2026.

_____
[Insert Name]
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, Kathy Bailor, Interim City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Ordinance No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the ___ day of _____ 2026, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

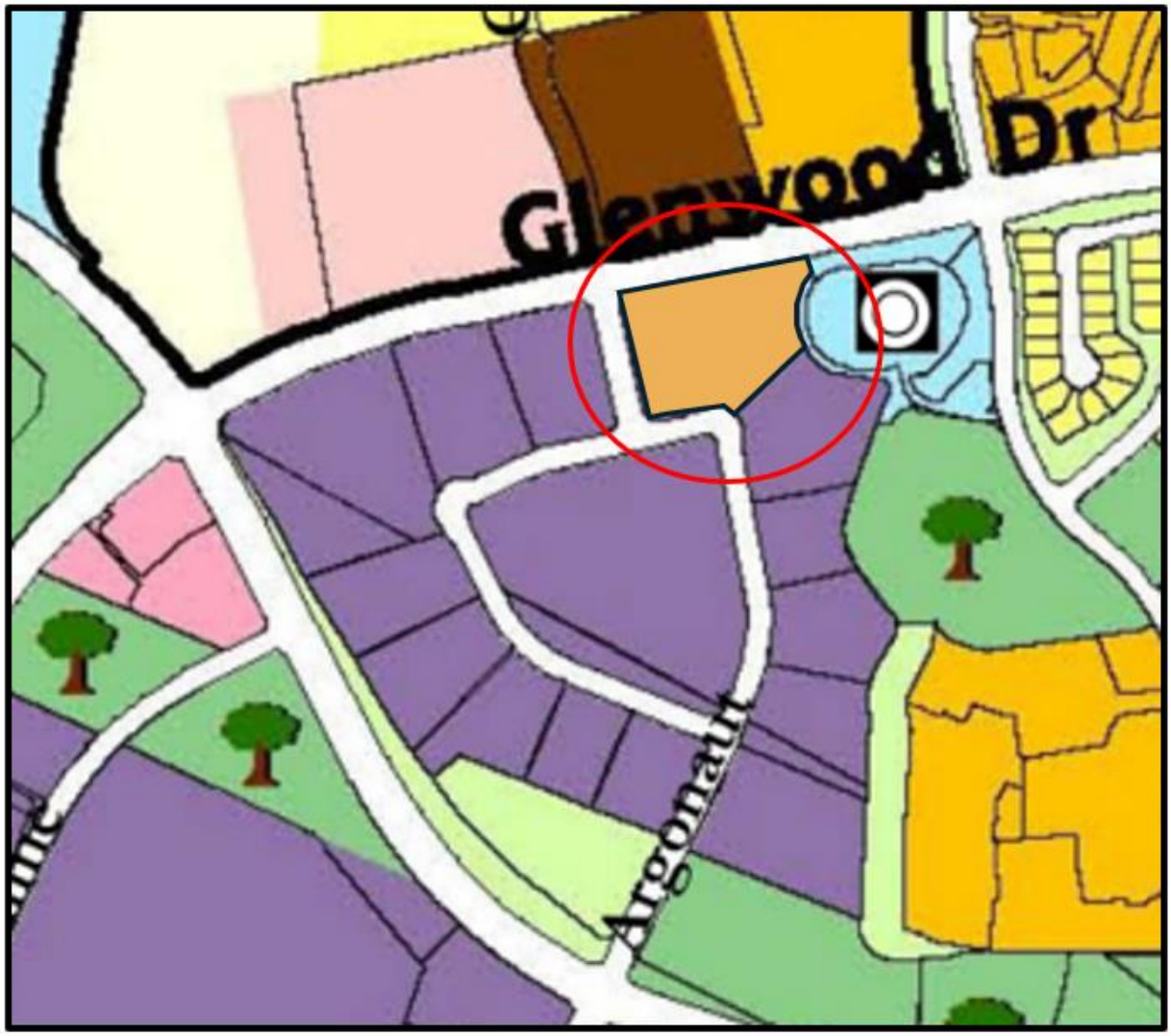
I hereby certify that the foregoing is the original of Ordinance No. 2026-__ duly passed and adopted by the Aliso Viejo City Council at its regular meeting held _____, 2026, and that the Summary of the Ordinance was published on _____ and _____ in the Laguna Niguel News.

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

Exhibit "A"
Zone Change Map
Case No. ZC-2025-00002

Property Location – 95 Argonaut (see red-circled area below)
Existing Land Use Designation – Business Park ("BP")
Proposed Land Use Designation – High Density Residential (Max. 50 units/acre) ("HDR")



RESOLUTION NO. 2025-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING VESTING TENTATIVE TRACT MAP 19340 FOR SUBDIVISION INTO CONDOMINIUM PURPOSES AND SITE DEVELOPMENT PERMIT (SDP-2024-00001) TO ALLOW THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (623-091-01)

WHEREAS, on October 24, 2024, MLC Holdings, Inc. ("Applicant") submitted a general plan amendment, zone change, vesting tentative tract map, site development permit, and a development agreement application to demolish an existing office building to accommodate the construction of a multi-family residential community at 95 Argonaut ("Project");

WHEREAS, on November 6, 2024, the City Council held a duly noticed public review to receive and provide initial feedback on concept plans for the Project;

WHEREAS, pursuant to section 21067 of the Public Resources Code, and section 15367 of the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.), the City is the lead agency for the proposed Project and has prepared an Initial Study/Mitigated Negative Declaration (SCH#2025100301) ("IS/MND") and a Mitigation Monitoring and Reporting Program ("MMRP") for the Project;

WHEREAS, on November 19, 2025, the City Council held a duly noticed public hearing, discussed the parameters of the public benefit contributions of the Development Agreement, and continued the meeting to December 3, 2025, to allow the Applicant additional time to address easement encroachment issues with the Aliso Viejo Community Association;

WHEREAS, the public benefits include, among other things, park in-lieu fees, as authorized by law and the City's ordinances, to rehabilitate and improve existing open space and recreational facilities in the City, including but not limited to, the Aquatic Center, Iglesia Community Center and Park, and the Ranch ("Facilities") in order to maintain the City's high standard of recreation and community services while accommodating a growing population, including future residents of the proposed subdivision;

WHEREAS, residents throughout the City regularly use the Facilities due to the variety of programs and services offered. Although the Facilities are located outside of the subdivision, future residents of the subdivision will undoubtedly use and benefit from use of the Facilities as well;

WHEREAS, on October 30, 2025, the City gave public notice of the City Council public hearing for consideration of a Mitigated Negative Declaration, General Plan Amendment GPA-2025-00002, Zone Change ZC-2025-00002, Vesting Tentative Tract Map 19340 and Site Developer Permit SDP-2024-00001, for the Project by advertising in a

newspaper of general circulation; by posting notices at City Hall and the Project site; and by mailing notices to owners of property within 300 feet, to the project applicant, and to local agencies that provide water, sewage, electricity and schools;

WHEREAS, on December 3, 2025, the City Council held a public hearing as prescribed by law and considered written and verbal public testimony that was submitted prior to the hearing and during the hearing and evidence and recommendations presented by staff in the agenda report and oral presentation; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AS FOLLOWS:

Section 1. **Incorporation of Recitals.** The City Council hereby finds and determines that all of the recitals set forth above are true and correct. The above recitals are hereby incorporated as substantive findings of this Resolution.

Section 2. **CEQA**. Pursuant to the California Environmental Quality Act (Public Resources Code, § 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, title 14, § 15000 et seq.) (Collectively, "CEQA"), the City Council adopted Resolution No. _____, determining that there is no substantial evidence that the approval of the Project would result in a significant adverse effect on the environment, provided appropriate mitigation measures, as identified in the MMRP, are imposed on the Project.

Section 3. **Findings for Vesting Tentative Tract Map 19340.** Pursuant to the requirements of the California Subdivision Map Act (Government Code Section 66410 *et. seq.)* and AVMC Title 14 (Subdivisions), the City Council hereby makes the following findings of fact and approves the Vesting Tentative Tract Map ("VTTM") 19340 as set forth in the Project plans as set forth in Exhibit "B", Sheets C1 to C-3 and subject to the conditions of approval as set forth in Exhibit "A", which are attached hereto and incorporated herein by reference.

A. The proposed map is consistent with the applicable General and Specific Plans. The Site has a General Plan land use designation of Business Park. The Applicant proposes a General Plan Amendment to re-designate the property for High Density Residential, which allows for residential development of 19 to 30 dwelling units per acre. The Vesting Tentative Tract Map proposes 61 multi-family homes on 2.85 acres, resulting in a density of 21.4 dwelling units per acre. As conditioned, the Vesting Tentative Tract Map will not take effect unless the General Plan Amendment, Zone Change, Site Development Permit, and Development Agreement take effect. Accordingly, the proposed map would be consistent with the applicable General Plan Land Use designation. There is no applicable Specific Plan for the Project site.

B. The design or improvement of the proposed subdivision is consistent with the General and Specific Plans. The Project is consistent with the goals and policies of the Conservation and Open Space, Housing, and Land Use element in that the Project promotes orderly growth, provides a compatible transition between non-residential and residential uses, supports housing objectives by creating new residential opportunities, and utilizes existing infrastructure in a manner consistent with the community's long-term vision and planning framework. The Project is also subject to mitigation measures and conditions of approval that address potential impacts related to traffic, noise, air quality, and emergency access. There is no applicable Specific Plan for the Project site.

C. The proposed subdivision conforms to all applicable zoning standards set forth in AVMC Title, as required by AVMC Section 14.08.050. The proposed subdivision is consistent with the permitted uses, development standards, and density provisions of the underlying zoning district, and the design and layout of lots, streets, and improvements comply with the requirements for subdivision and land development established in the AVMC.

D. The site is physically suitable for the type of development. The Project site is generally level, has adequate access from existing public streets, and is served by established infrastructure systems including water, sewer, storm drainage, and utilities. The site's size, configuration, and surrounding land use context are appropriate to accommodate the Project consistent with applicable zoning and General Plan designations. No unusual topographic, geologic, or environmental conditions have been identified that would render the site unsuitable for residential use.

E. The site is physically suitable for the proposed density of development. The Project includes a General Plan Amendment to re-designate the property to High Density Residential, which permits residential development at a range of 19 to 30 dwelling units per acre. The Vesting Tentative Tract Map proposes 61 multi-family homes on 2.85 acres, resulting in a density of approximately 21.4 dwelling units per acre. This proposed density falls within the allowable range for the High Density Residential designation.

F. The design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage or substantial and avoidable injury to fish or wildlife or their habitat. The Project site is currently developed with an office building, surface parking lot, and landscaping. There is no fish, wildlife, or any habitat that would be affected by the Project.

G. The design of the subdivision or type of improvements is not likely to cause serious public health problems. The Project will be served by existing off-site infrastructure, with new on-site water, sewer, and storm drain facilities designed to connect to and extend those systems. All facilities have adequate capacity

to accommodate the proposed residential use. The subdivision design incorporates standard improvements, including paved streets, sidewalks, street lighting, and utility connections, that will be constructed in compliance with applicable building codes and City engineering standards. The Initial Study prepared for the Project did not identify any conditions that would result in significant public health impacts, and all potentially significant effects have been mitigated to less-than-significant levels.

H. The design of the subdivision or the type of improvements will not conflict with existing easements, acquired by the public at large, for access through or use of property within the subdivision. The Project as conditioned requires the Applicant to obtain easement holders' authorization for any improvements or encroachments prior to building permit issuance.

Section 4. **Findings for Site Development Permit SDP-2024-00001.** Pursuant to AVMC 15.74.020 (Site Development Permits), the City Council hereby makes the following findings of fact and approves the Site Development Permit SDP-2024-00001, subject to the conditions of approval as set forth in Exhibit "A" and Project plans as set forth in Exhibit "B", which are attached hereto and incorporated herein by reference.

A. Consistency with General Plan. The project is consistent with the general plan and any applicable specific plan. The Project with the General Plan Amendment to High Density Residential is consistent with the General Plan in that it incorporates landscaping aligned with the City Council-approved plant palette, emphasizing low-water, drought-tolerant species; features building materials, colors, and architectural design that are compatible with the surrounding residential communities; includes a development impact fee that a portion of which is consistent the City's parkland ordinance; proposes three affordable housing units restricted to very low-income households, thereby enhancing housing diversity and affordability; and introduces rezoning to facilitate residential development that includes affordable units in support of the City's housing objectives.

B. Consistency with Zoning Code. The land use and associated development conform to the permitted use provisions and development standards of this zoning code and is consistent with this code and any applicable specific plan. The proposed zone change to High Density Residential, together with the associated development, is compatible with surrounding land uses, providing a transition that complements the existing neighborhood character. The property is suitable for residential use based on its location, access, visual character, and topography, and existing infrastructure is adequate to support the proposed development. The Project incorporates reduced perimeter setbacks for buildings, landscaping, and mechanical equipment, which are expressly permitted as incentives under California's State Density Bonus Law, which requires cities to grant certain concessions and waivers or relaxed development standards when a project

includes a qualifying percentage of affordable housing units. Because the Project meets the threshold of 5% for very low-income households, it is eligible for the reduced building and landscape setbacks, and mechanical equipment placement in the front yard setback. In addition, the Project qualifies for a reduced parking ratio under the State Density Bonus Law. Based on this ratio, a total of 112 parking spaces is required for the Project. The law does not prescribe how these spaces must be allocated between private resident parking and guest parking; rather, the distribution is left to the Applicant. In this case, the Applicant is proposing 150 parking spaces, consisting of 122 private residential spaces and 28 guest spaces. Although the City does not permit tandem parking, and tandem stalls must therefore be counted as a single space, the Project would still provide a total of 117 spaces (89 private and 28 guest), which exceeds the required 112 spaces.

C. Compliance with CEQA. Processing and approval of the permit application are in compliance with the requirements of the California Environmental Quality Act. An Initial Study (“IS”) was prepared for the project, which identified potentially significant environmental impacts. However, these impacts can be mitigated to less than significant levels through revisions and implementation of mitigation measures. As such, a Mitigated Negative Declaration (“MND”) was prepared and circulated for a 20-day public review period from October 2 to October 22, 2025, with distribution to the State Clearinghouse, public agencies, nearby property owners, and interested parties. One comment was received from the California Department of Toxic Substances Control (DTSC), and its recommendations regarding imported fill material have been incorporated as conditions of approval. The IS determined that the project would not result in significant impacts to most resource areas, and identified mitigation measures for biological resources, cultural resources, tribal cultural resources, and geology and soils, which are included in the Mitigation Monitoring Program and Conditions of Approval.

D. Architectural Design. The architectural design of the project, including but not limited to the architectural style, scale, building mass, materials, colors, architectural details, and roof style, is compatible with surrounding development. The adjacent multi-family development to the north shares several defining characteristics with the proposed project, including similarly scaled buildings composed of six attached units. The architectural style is complementary, featuring stucco exteriors, tile roofing, wrought iron balconies, recessed entryways, and communal open space without private driveways. The surrounding single-family tract homes also reflect a consistent architectural design, with comparable color palettes, exterior finishes, and material selections. The Project further enhances this compatibility through the inclusion of framed windows, some accented with faux shutters, as well as a mix of hip and gable roof forms, which reflects the roof styles found in nearby residences. Collectively, these design elements ensure compatibility with the surrounding development.

E. Site Design. The site design of the project, including but not limited to project entries, interior circulation, pedestrian and bicycle access, pedestrian amenities, screening of equipment and trash enclosures, exterior lighting, and other site design elements, is compatible with surrounding development. The Project will retain the existing single-entry driveway at the southern end of the site along Argonaut. The internal private roadway system designed to provide two-way access to residential garages and guest parking spaces, emergency access, hydrant placement has been reviewed and conceptually approved by both the Building Division and the Orange County Fire Authority (OCFA). Each unit will include an enclosed private garage with dedicated space for trash bin storage. Approximately 32% of the site will be dedicated to open space, including a private park, shared yards, pedestrian walkways, and perimeter landscaping. Perimeter fencing and exterior mechanical equipment will be screened with additional landscaping, and the site entrance will be enhanced with decorative paving, signage, and accent trees. Lighting throughout the site, including streetlights, bollards, and shade structures, will be designed with recessed, downward-facing fixtures to minimize light spill. These design elements are compatible with surrounding residential communities.

F. Landscape Design. Project landscaping, including but not limited to the location, type, size, color, texture, and coverage of plant materials, has been designed so as to provide visual relief, complement buildings, visually emphasize prominent design elements and vistas, screen undesirable views, provide a harmonious transition between adjacent land uses and between development and open space, and provide an overall unifying influence to enhance the visual continuity of the project. The Project incorporates a landscape plan that enhances the overall visual continuity of the site and complements the architectural character of the development. Approximately 32% of the site is dedicated to open space, which includes a private park featuring a BBQ counter, shade structure, picnic tables, benches, and play equipment. In addition, approximately 35,000 square feet of shared yards, pedestrian walkways, and perimeter landscaping are distributed throughout the site to provide visual relief and promote connectivity. Landscaping will be provided around the exterior mechanical equipment and perimeter fencing to screen undesirable views. The site entrance is designed to create a welcoming and visually prominent focal point, enhanced with decorative paving, signage, and accent trees. The plant palette aligns with the City Council-approved plant palette, emphasizing low-water, drought-tolerant species.

Section 5. **Location of Documents.** The administrative record for the Project is maintained at City Hall located at 12 Journey, Suite 100, Aliso Viejo, CA 92656. The custodian of records is the City Clerk.

Section 6. **Severability**. If any provision of this Resolution or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this Resolution that can be given effect without the invalid provision or application, and to this end the provisions of this Resolution are severable. The City Council hereby declares that it would have adopted this Resolution irrespective of the invalidity of any particular portion thereof.

Section 7. **Effective Date.** This Vesting Tentative Tract Map 19340, Site Development Permit SDP-2024-00001 shall not take effect unless and until General Plan Amendment, Zone Change, and the Development Agreement are each approved by the City Council and have become effective, and the associated Development Agreement is approved by the City Council and executed by both parties thereto.

Section 8. **Execution of Resolution**. The Mayor shall sign this Resolution and the City Clerk shall attest and certify to the passage and adoption thereof.

PASSED, APPROVED AND ADOPTED this 3rd day of December 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, Kathy Bailor, City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Resolution No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the 3rd day of December 2025, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

Exhibit "A"
Conditions of Approval
Case Nos. GPA-2025-00002, ZC 2025-00002, VTTM 19340, and SDP-2024-00001

General

1. Indemnification. The Applicant shall indemnify, protect, defend, and hold the city, and/or any of its officials (appointed or elected), officers, employees, agents, departments, agencies, and instrumentalities thereof, harmless from any and all claims, demands, lawsuits, writs of mandamus, and other actions and proceedings (whether legal, equitable, declaratory, administrative or adjudicatory in nature), and alternative dispute resolution procedures (including, but not limited to arbitrations, mediations, and other such procedures), judgments, orders, and decisions (collectively 'Actions'), brought against the city, and/or any of its officials, officers, employees, agents, departments, agencies, and instrumentalities thereof, that challenge, attack, or seek to modify, set aside, void, or annul, any action of, or any permit or approval issued by the city and/or any of its officials, officers, employees, agents, departments, agencies, and instrumentalities thereof (including actions approved by the voters of the city) for or concerning the project, whether such Actions are brought under the Ralph M. Brown Act, California Environmental Quality Act, Planning and Zoning Law, Subdivision Map Act, Community Redevelopment Law, Code of Civil Procedure Sections 1085 or 1094.5, or any other federal, state, or local constitution, statute, law, ordinance, charter, rule, regulation, or any decision of a court of competent jurisdiction. It is expressly agreed the city shall have the right to approve, which approval will not be unreasonably withheld, legal counsel providing the city's defense, and that Applicant shall reimburse city for any costs and expenses directly and necessarily incurred by the city in the course of the defense. The city shall promptly notify the Applicant of any action brought, and city shall cooperate with the Applicant in defense of the action.

2. Other Agency Approvals. The Applicant shall comply with all applicable requirements of outside agencies having jurisdiction, including but not limited to the local fire authority, water district, and any other local, regional, State, or Federal agencies.

3. Public Works. If applicable, the Applicant shall apply for and obtain encroachment permits or other permits from the Public Works Department for any work or placement within the public right-of-way.

Development Agreement and Vesting Tentative Tract Map

4. **Prior to issuance of any building permit,** the Applicant shall execute the Development Agreement with the City. The Applicant shall comply with all terms and conditions of the agreement.

5. Payment of the full $213,850 City Fees and $824,802 Park in-lieu fee amounts shall be made to the City **prior to the issuance of any building permit** for the Project. No building permit shall be issued until the City has received the full payment and confirmed compliance with all applicable fee requirements. The City shall have no obligation to issue any building permit until and unless such payments and in-lieu fees are received in full, any delay resulting from non-payment shall be solely the responsibility of the Applicant.

6. The Applicant shall provide a minimum of 3 dwelling units on-site as for-sale housing, which shall be deed restricted to very low-income households. Each unit shall be designed and located in full compliance with the plans reviewed by the City Council on December 3, 2025. **Prior to issuance of any building permit,** the Applicant shall execute the Density Bonus Housing Agreement as provided in the Development Agreement. The Applicant shall comply with all terms and conditions of the Density Bonus Housing Agreement and the Development Agreement.

Vesting Tentative Tract Map

7. A final tract map shall be filed for approval and recordation pursuant to AVMC Chapter 14.18.

8. **Prior to approval of the Final Map**, the Applicant shall resolve any encroachments into the easements to the satisfaction of the City and all affected parties. No Final Map shall be approved for filing until documentation demonstrating resolution of the encroachment, whether by removal, relocation, or formal modification of the easement, has been reviewed and approved by the City. The Final Map shall reflect the corrected easement boundaries and conditions as approved.

9. **Prior to clearance of a Final Map or issuance of a permit,** the Applicant shall submit a Fire Master Plan to Orange County Fire Authority for review.

10. Street lighting shall be provided along, and at the intersections of, all arterial highways and local streets in accordance with the illumination levels specified in the city standards, except as otherwise approved by the city engineer.

11. Utility lines, including, but not limited to, electric, communications, street lighting, and cable television, shall be placed underground. The Applicant is responsible for making the necessary arrangements with the utility companies for the installation of such facilities. Appurtenances and associated equipment such as, but not limited to, surface-mounted transformers, pedestal-mounted terminal boxes, meter cabinets, and concealed ducts in an underground system may be placed above ground within the street right-of-way where sufficient right-of-way width exists so as not to pose a serious hazard to pedestrian traffic.

12. All lots shall be connected to a sanitary sewer system.

Construction

13. The approved project involves the demolition of an existing office building development and construction of a new 61-unit townhome complex with associated parking lot and open space amenities. The project shall be constructed and maintained in full compliance with the approved plans and specifications, including but not limited to all details regarding building height, setbacks, site layout, parking, circulation, architectural features, and other design elements, reviewed by the City Council on December 3, 2025. Any modifications or deviations from the approved plans shall require prior review and approval by the City pursuant to AVMC 15.74.110 (Modifications to discretionary permits).

14. The approved project shall comply with all applicable provisions of the Aliso Viejo Municipal Code, including but not limited to building codes and any conditions imposed as part of the approval process.

15. **Prior to issuance of any permits,** the Applicant shall submit and obtain City approval of a construction plan detailing the phasing and timing of demolition of the existing office building, site grading, infrastructure installation, landscape/open space installation and construction of the approved 61-unit townhome community. All work shall proceed in accordance with the approved construction plan, and any substantive changes to phasing or timing shall require prior written authorization from the City.

16. **Prior to issuance of any grading permit**, the Applicant shall submit a proposed haul route for the transport of earth, materials, and equipment to and from the site. The haul route shall be reviewed and approved by the City to ensure public safety, minimize traffic impacts, and protect adjacent properties. No grading or excavation shall occur until the haul route has received written approval, and any subsequent modifications shall require prior authorization by the City.

17. **Following completion of grading and prior to issuance of any building permits**, the Applicant shall submit a pad certification prepared and signed by a licensed civil engineer or geotechnical engineer, verifying that all building pads have been graded in accordance with the approved grading plans and are suitable for the intended construction. The certification shall be reviewed and approved by the City prior to any construction.

18. Construction activities shall be limited to the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday. No construction shall occur on Sundays or on Federal holidays. Use of rock crusher on site is prohibited.

19. **Prior to grading or building permit issuance,** the Applicant shall prepare and submit for approval a Project Specific Final Water Quality Management Plan (F-WQMP) for the subject project. The F-WQMP shall be consistent with the approved P-WQMP and in full conformance with the TGD.

20. During all grading and construction activities, the construction contractor shall post a clearly visible sign at the project site boundary listing a contact name and telephone number.

21. **Prior to building permit final of any unit,** perimeter fencing shall be installed. The use of chain link, barbed wire, razor wire or electrified fencing are prohibited.

22. Project identification sign is required. Prior to installation of this sign, the project name shall be approved by the City to ensure appropriateness, aid in identification for emergency services and to avoid duplication with other projects in the City. Placement of any permanent and temporary signs may be permitted pursuant to AVMC Chapter 15.34.

23. Uless determined infeasible by the City, streetlights shall be placed off of sidewalks; and irrigation controllers, power transformers, telephone and cable TV junction boxes, and other similar facilities shall be placed underground.

24. **Prior to building permit issuance,** the Applicant shall submit a lighting plan identifying the type, location and height of proposed lighting fixtures, with an associated photometric analysis showing lighting illumination levels and spillover. The lighting plan shall conform to the provisions of AVMC Zoning Code Appendix A (Requirements for Crime Prevention Through Environmental Design) and AVMC 15.62.070 (Outdoor Lighting) and shall be reviewed and approved by the Director of Community Development and the Police Services Department prior to issuance of a building permit. The Police Services Department shall also review address numbers, certain landscaping, and door strikes and jambs as part of this same review and approval process.

25. Screening of Equipment and Facilities. Mechanical equipment, ground-mounted utility, mechanical, and other similar equipment shall be screened pursuant to AVMC 15.62.080 (Nonresidential Site Planning).

26. Landscaping shall comply with AVMC 15.62.060 (Landscaping and screening). All landscaping and common areas on site shall be maintained in perpetuity by the Applicant or an established homeowners' association.

Temporary Use Permits

27. The temporary placement of a trailer, recreational vehicle or other relocatable building, or the temporary use of a permanent structure on an active construction or grading site to serve as a construction and/or guard office may be permitted subject to approval of a temporary use permit pursuant to AVMC 15.14.170 (Construction and Guard Offices).

28. Temporary model home complexes and real estate sales offices may be established subject to approval of a temporary use permit pursuant to AVMC 15.14.180 (Model Home Offices).

Permit Validity

29. Expiration. This approval shall expire and be of no further force or effect if:
    a. The permit is not established within two years of the permit's effective date or such other time period designated by the permit approval, by state law, or by this code; or
    b. After establishment, the use or activity for which the permit was approved is discontinued or abandoned for a period of one year.

30. Time Extensions. Upon application before expiration of the period of validity, the City Council may grant or conditionally grant an extension to the period of validity for up to one year per extension if it finds that such an extension is justified by the circumstances of the original findings for the project can still be made with, if necessary, the imposition of conditions not originally imposed on the project. The filing of an application for extension shall stay expiration of the permit until action is taken on the time extension by the decision-making authority. No more than two one-year extensions may be granted or conditionally granted.

31. Revocation of discretionary permits. Any discretionary permit may be revoked by the original decision-making authority pursuant to the provisions of AVMC 15.74.120 (Revocation of Discretionary Permits).

Orange County Fire Authority ("OCFA")

32. **Prior to building permit issuance,** submit plans for review and approval of the following: underground piping for private hydrants and fire sprinkler systems, and fire sprinkler systems.

33. **Prior to concealing interior construction**, submit plan for review and approval of the fire alarm system.

Department of Toxic Substances Control ("DTSC")

34. All imported soil/fill material shall be tested to ensure all COCs meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment Guidance Manual. Furthermore, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil/fill material there should be documentation of the origins of the soil/fill material and, if applicable, sampling be conducted to ensure that the imported soil/fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the soil/fill and knowledge of prior land use.

35. If in the event any COC results are above DTSC residential screening levels are found in soil or fill material, all contaminations within the Project area shall be addressed through DTSC or Regional Water Quality Control Board.

Mitigation Measures

Biological Resources

36. MM BIO-1a: Nesting Bird Pre-construction Surveys If ground-disturbing or vegetation-removing construction activities or tree removal is proposed during the breeding/nesting season for migratory birds (February 1 through September 15), a qualified Biologist shall conduct pre-construction surveys for special-status birds and other migratory birds within the construction area, including a 300-foot survey buffer (where accessible), no more than 3 days prior to the start of ground-disturbing activities in the construction area

37. MM BIO-1b: Avoidance of Active Avian Nests If an active nest (i.e., occupied by eggs or fledglings) is located during pre-construction surveys or at any point during the construction phase of the proposed project, the City of Aliso Viejo shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until the eggs or fledglings no longer are in the nest or a qualified Biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and a 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.

Cultural Resources

38. MM CUL-1: Prior to the initiation of construction activities, all construction personnel conducting ground disturbance at the site shall be provided a Worker Environmental Awareness Program (WEAP) cultural resources “tailgate” training. The training shall include visual aids, a discussion of applicable laws and statutes relating to archaeological resources, types of resources that may be found within the project site, and procedures to be followed in the event such resources are encountered. The training shall be conducted by an Archaeologist who meets the Secretary of the Interior’s Professional Qualification Standards for archaeology. An Archaeologist who meets the Secretary of the Interior’s Professional Qualification Standards for archaeology shall conduct an updated survey of the site following demolition and exposure of native soils and prior to any project-related trenching or grading to check for the inadvertent exposure of cultural materials. This shall be followed by archaeological monitoring during the grading and trenching phase of the proposed project. At the completion of these phases, archaeological monitoring shall be reduced to periodic “spot checks.” In the event exposed soils indicate cultural materials may be present, this may be followed by regular or full-time archaeological monitoring as determined by the Archaeologist

39. MM CUL-2: In the event that buried archaeological resources are discovered during construction, operations shall stop within a 100- foot radius of the find and an Archaeologist who meets the Secretary of Interior's Professional Qualification Standards for archaeology shall be consulted to determine whether the resource requires further study. The qualified Archaeologist shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during construction within the project area shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria. If the resources are determined to be unique historic resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. The Lead Agency, along with other relevant or Tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

40. MM CUL-3: In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 shall be followed. If during the course of project construction, there is accidental discovery or recognition of any human remains, the following steps shall be taken: 1. There shall be no further excavation or disturbance of the site where human remains are discovered and/or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine whether the remains are Native American and if an investigation of the cause of death is required. If the Coroner determines the remains to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the Most Likely Descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resource Code Section 5097.98. 2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury

the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD or on the project site in a location not subject to further subsurface disturbance:

a. The NAHC is unable to identify an MLD or the MLD failed to make a recommendation within 48 hours after being notified by the commission. •
b. The descendant identified fails to make a recommendation.
c. The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.

Geology and Soils

41. COA GEO-1: In accordance with Municipal Code 13.08.170, Soil Engineering and Engineering Geology Reports, a soil engineering and engineering geology report shall be required for grading projects unless otherwise waived by the building official. The reports shall include information appropriate for the site including any information required by the building official. Recommendations included in the reports and approved by the building official shall be incorporated in the grading plans or specifications. Accordingly, prior to issuance of grading permit, the project applicant shall provide grading plans or specifications that include all recommendations from the proposed project's May 31, 2024, Geotechnical Subsurface Exploration Due Diligence Study prepared by SA Geotechnical, Inc., or from the latest geotechnical study for the proposed project.

42. MM GEO-1: The project applicant shall enlist a qualified Paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) to prepare a Worker Environmental Awareness Program (WEAP) presentation for construction personnel. It will include information on paleontological resources, laws protecting them, types of fossils that could occur at the project site, and protocol for unanticipated discoveries. In the event that fossils are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify the qualified Paleontologist to examine the discovery. The qualified Paleontologist shall document the discovery as needed in accordance with SVP standards, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. Based on the significance of the find, the qualified Paleontologist shall determine procedures to be followed before construction is allowed to resume at the location of the find. If, in consultation with the qualified Paleontologist, it is determined that avoidance is not feasible, the qualified Paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) to outline salvage and recovery procedures. If deemed necessary by the qualified Paleontologist, the PRIMP shall include construction monitoring requirements as well. The PRIMP shall be submitted to the City for review and approval and the approved plan shall be implemented.

Tribal Cultural Resources

43. MM TCR-1 :Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities. The project applicant shall retain a Native American Monitor from or approved by both the Gabrieleño Band of Mission Indians – Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation. The Monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. A copy of the executed monitoring agreement shall be submitted to the Director of Community Development prior to the earlier date of either: (1) the commencement of any ground-disturbing activity, or (2) the issuance of any permit required to commence any ground disturbing activity. The Monitor shall complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribes. Monitor logs shall identify and describe any discovered Tribal Cultural Resources (TCRs), including, but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, Tribal Cultural Resources, or TCRs), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of Monitor logs shall be provide to the project applicant and the Director of Community Development upon written request to the Tribe. On-site Tribal monitoring shall conclude upon the latter of the following: (1) written confirmation to the Monitor and the Lead Agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Monitor to the Director of Community Development that no future planned construction activity and/or development/construction phase at the project site possesses the potential to impact to TCRs.

44. MM TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-funerary/Non-ceremonial) Upon discovery of any Tribal Cultural Resources (TCRs), all construction activities in the immediate vicinity of the discovery (i.e., not less than the surrounding 50 feet) shall cease. The City shall consult with the project Archaeologist and initiate Native American consultation procedures with the project's consulting Tribes (Gabrieleño Band of Mission Indians-Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation). The consultation effort is intended to be a meaningful and timely process of seeking, discussing, and considering carefully the views of others in a manner that is

cognizant of all parties' cultural values and, where feasible, seeking agreement on the appropriate treatment and disposition of TCRs discovered. A Cultural Resources and Monitoring and Treatment Plan shall be created by the Archaeologist in coordination with the consulting Tribes (Gabrieleño Band of Mission Indians-Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation) and all subsequent finds shall be subject to this plan. Project construction shall not resume within the immediate vicinity of the discovery (i.e., not less than the surrounding 50 feet) until a Cultural Resources and Monitoring Treatment Plan is prepared and implemented. The plan may include, but would not be limited to, reburying, relocating, recording, and/or another culturally appropriate treatment. If it is determined that mutual agreement cannot be reached within 30 days of the initial consultation meeting, the TCR(s) under review shall be reinterred on-site in a location free from future ground disturbing construction activities. This measure does not apply to the finding of human remains, which must comply with California Health and Safety Code Section 7050.5.

45. MM TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects

    a. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.
    b. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource Code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed.
    c. Human remains and grave/burial goods shall be treated alike per California Public Resources Code Section 5097.98(d)(1) and (2).
    d. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. E. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

Exhibit “B”
Project Plans

ARGONAUT

ALISO VIEJO, CALIFORNIA

07/24/2025

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Kevin L. Crook **Architect** Inc #24066
PLANNING + ARCHITECTU

2594

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ALISO VIEJO, CALIFORNIA

P-1 Vicinity Map
P-2 Site Photos
P-3 Street View and Neighborhood Context
P-4 Illustrative Site Plan

A-1 Street Scene

A-2 602A Building (6- Plex) - First Floor Plan
A-3 602A Building (6- Plex) - Second Floor Plan
A-4 602A Building (6- Plex) - Third Floor Plan
A-5 602A Building (6- Plex) - Spanish Eclectic "A" Elevation
A-6 602A Building (6- Plex) - Spanish Eclectic "A" Elevation
A-7 602A Building (6- Plex) - Spanish Eclectic "A" Elevation
A-8 602A Building (6- Plex) - Roof Plan

A-9 704A Building (7- Plex) - First Floor Plan
A-10 704A Building (7- Plex) - Second Floor Plan
A-11 704A Building (7- Plex) - Third Floor Plan
A-12 704A Building (7- Plex) - Spanish Eclectic "A" Elevation
A-13 704A Building (7- Plex) - Spanish Eclectic "A" Elevation
A-14 704A Building (7- Plex) - Spanish Eclectic "A" Elevation
A-15 704A Building (7- Plex) - Roof Plan

A-16 804A Building (8- Plex) - First Floor Plan
A-17 804A Building (8- Plex) - Second Floor Plan
A-19 804A Building (8- Plex) - Third Floor Plan
A-20 804A Building (8- Plex) - Spanish Eclectic "A" Elevation
A-21 804A Building (8- Plex) - Spanish Eclectic "A" Elevation
A-22 804A Building (8- Plex) - Spanish Eclectic "A" Elevation
A-23 804A Building (8- Plex) - Roof Plan

A-24 807A Building (8- Plex) - First Floor Plan
A-25 807A Building (8- Plex) - Second Floor Plan
A-26 807A Building (8- Plex) - Third Floor Plan
A-27 807A Building (8- Plex) - Spanish Eclectic "A" Elevation
A-28 807A Building (8- Plex) - Spanish Eclectic "A" Elevation
A-29 807A Building (8- Plex) - Spanish Eclectic "A" Elevation
A-30 807A Building (8- Plex) - Roof Plan

A-31 Written Color Schemes
A-32 Color Boards - "A" Spanish Colonial

C-1 Title Sheet
C-2 Existing Conditions
C-3 Tentative Tract Map
C-4 Conceptual Grading Plan
C-5 Sections
C-6 Earth Work Exhibit
C-7 Conceptual Utility Plan
C-8 Fire Access Site Plan

L-1 Conceptual Landscape Site Plan
L-2 Conceptual Open Space Enlargement Plan
L-3 Conceptual Wall and Fence Plan
L-4 Conceptual Wall and Fence Details and Site Amenities
L-5 Conceptual Irrigation Calculation
L-6 Conceptual Planting Palette
L-7 Existing Tree Information
L-8 Conceptual Common Open Space Calculation

VCL - 01 Summaries and Schedules
VCL - 02 Lighting Plan
VCL - 03 Specification: Street Light
VCL - 04 Specification: Pedestrian Light
VCL - 05 Specification: Bollard Light
VCL - 06 Specification: Down Light

Note: For design intent only, not for construction.

Developer: Meritage Homes
5 Peters Canyon Road, Suite 310
Irvine, CA 92606
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Business: (310) 741-0336
www.meritagehomes.com

Architect: Kevin L. Crook Architect, Inc.
1360 Reynolds Ave. Suite 110
Irvine, CA 92614
Contact: Jeff Addison
Business: (949)660-1568
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Landscape: C2 Collaborative
100 Avenida Miramar,
San Clemente, CA 92672
Contact: Sundae Liu
Business: (949)542-7732
www.c2collaborative.com

Civil Engineer: X Engineering & Consulting, Inc.
6 Hutton Centre Drive, Suite 650
Santa Ana, CA 92707
Contact: Eric Lissner
Business: (714) 474-1609
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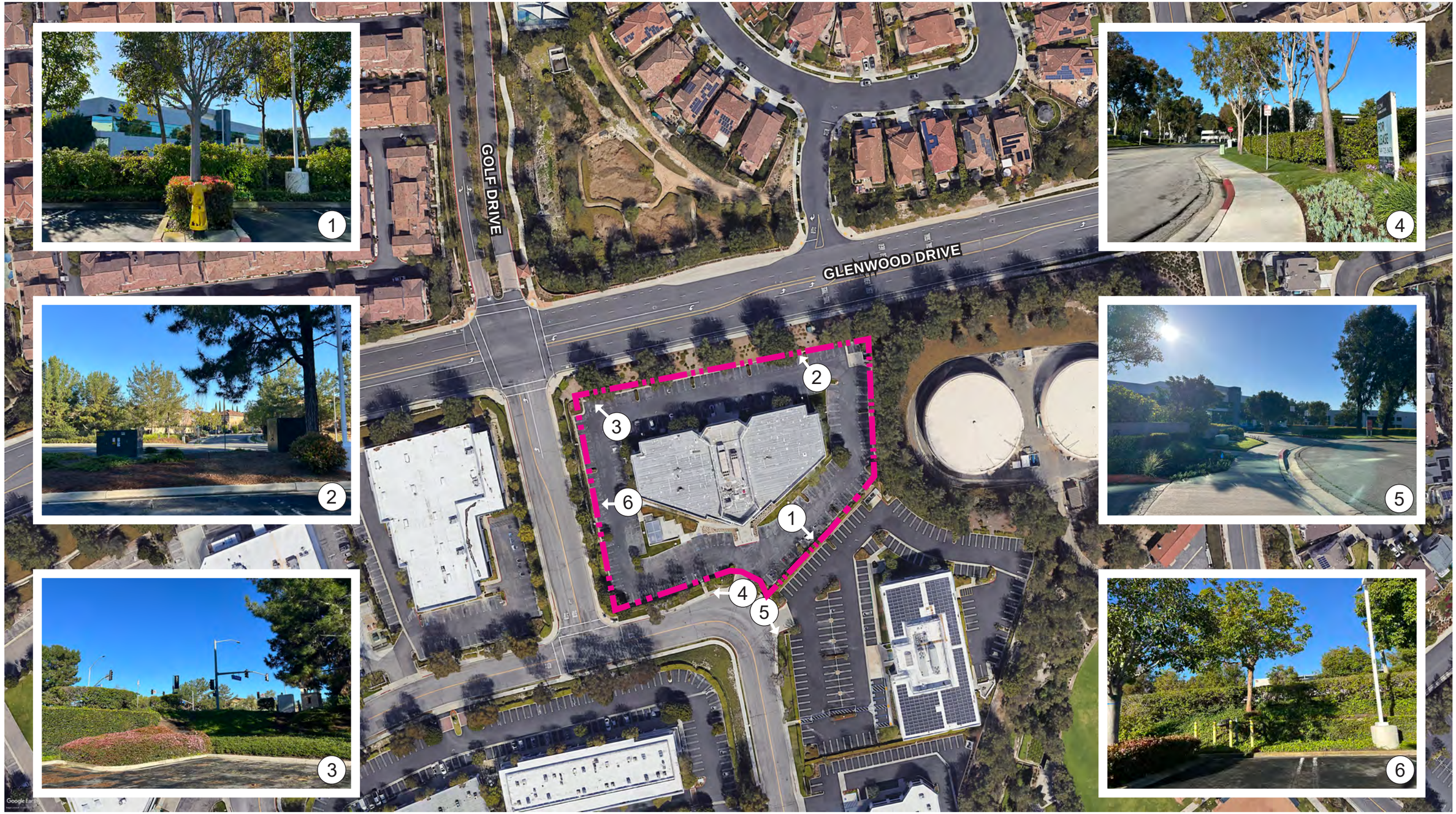
Vicinity Map

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Argonaut

Aliso Viejo, California

July 2025



Site Photos

Argonaut

Aliso Viejo, California

July 2025

Aliso Viejo Country Club
Single Family
Townhomes
Single Family
Townhomes
Glenwood Community Park
Glenwood Drive
PROJECT SITE
Cedarbrook
Moulton Niguel Water District
Single Family
Azarain Gymnastics
Argonaut
Glenwood Drive
Ridgecrest Park
Aliso Creek Parkway
Office Buildings
Pinewood Park



Street View and Neighborhood Context



Perimeter Retaining Wall and Fence
- Retaining wall to be screened to reduce visibility from street
- Perimeter fencing to be tube steel and screened with vegetation
- Frontage to be landscape with trees and shrubs. Existing trees to be preserved where possible

Perimeter Screening
- AC units and utility transfomers screened by landscape to reduce visual impact (as allowed by provider)
- Frontage to be landscape with trees and shrubs. Existing trees to be preserved where possible

Residential Townhomes
- Three-story Residential Townhomes
- 2-4 Bedrooms
- 2-Car Garage

Private Drive
- 24- foot private drive provides access to all homes
- 9' x 18' guest parking spaces distributed throughout community
- Meets OCFA turn-around and access requirements

Community Space
- ± 5,215 SF
- Landscaped paseos and sidewalks connect all homes
- Potential programming for lawn, BBQ grill, shade structure, picnic table, and tot lot

Primary Entry off Argonaut
- Maintains existing driveway location
- Enhanced with accent trees, enhanced paving and project community signage
- Centrally located guest parking

Community Frontage
- Front doors at community entry create a superior arrival experience while providing "eyes-on" safety
- Landscaping enhances public street while maintaining community privacy

Summary

Site Area: 2.83 acres (123,275 SF)

Total Homes: 61
- (12) Plan 2531: 1,268 SF 2 Bed 2.5 Bath, Tandem Garage
- (8) Plan 2532: 1,210 SF 2 Bed 2.5 Bath, Standard Garage
- (21) Plan 1633: 1,496 SF 3 Bed 3 Bath, Tandem Garage
- (20) Plan 1638: 1,765 SF 4 Bed 4 Bath, Standard Garage

Net Density: 21.6 du/ac

	Development Standards Required	Proposed
Maximum Density	30 du/ac	21.6 du/ac
Maximum Structure Height	45'	38'
Minimum Building Site Area (SF)	5,000 SF	123,275 SF
Maximum Building Site Coverage	60%	40%
Minimum Common Open Space	25% (30,819 SF)	32.7% (40,259.9 SF) (See Note 13 below)
Minimum Perimeter Setback [7]	20'	7'
Parking [8]	Townhomes: 2 spaces/ unit = 122 Guest: .5 spaces/unit = 31 Total Parking = 153	Garage: 2 per unit = 122 Guest= 28 Total= 150 (See Note 12 below)

Notes:
1. 95 Argonaut, Aliso Viejo, CA 92656
2. Assessor's Parcel Numbers: 623-091-01
3. Application Number: DRP-2024-00002
4. Type VB construction with either NFPA 13D automatic sprinkler system or NFPA 13R automatic sprinkler system. Refer to floor plans for specifics
5. Existing Zoning: Business Park 2
6. Proposed Zoning: Residential High Density
7. Existing General Plan: Business Park
8. Proposed General Plan: High Density Residential
9. 5% Affordable (3 Homes) at Very Low to be provided on site. Max wall heights & perimeter setbacks reduced per Density Bonus Law. The following units will be assigned as affordable:
   - One (1) - Plan 2532: 1,210 SF 2 Bed 2.5 Bath
   - Two (2) - Plan 2531: 1,268 SF 2 Bed 2.5 Bath
10. SB330: Pending
11. CEQA: IS/MND
12. CA Density Bonus Law (Gov Code:Section 65915-65918)
13. Refer to Sheet L-8 for Conceptual Common Open Space Calculation

Illustrative Site Plan



602A BUILDING
(6-PLEX)

801A BUILDING
(8-PLEX)

801A BUILDING
(8-PLEX)

801A BUILDING
(8-PLEX)

807A BUILDING
(8-PLEX)

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

STREET SCENE

ARGONAUT

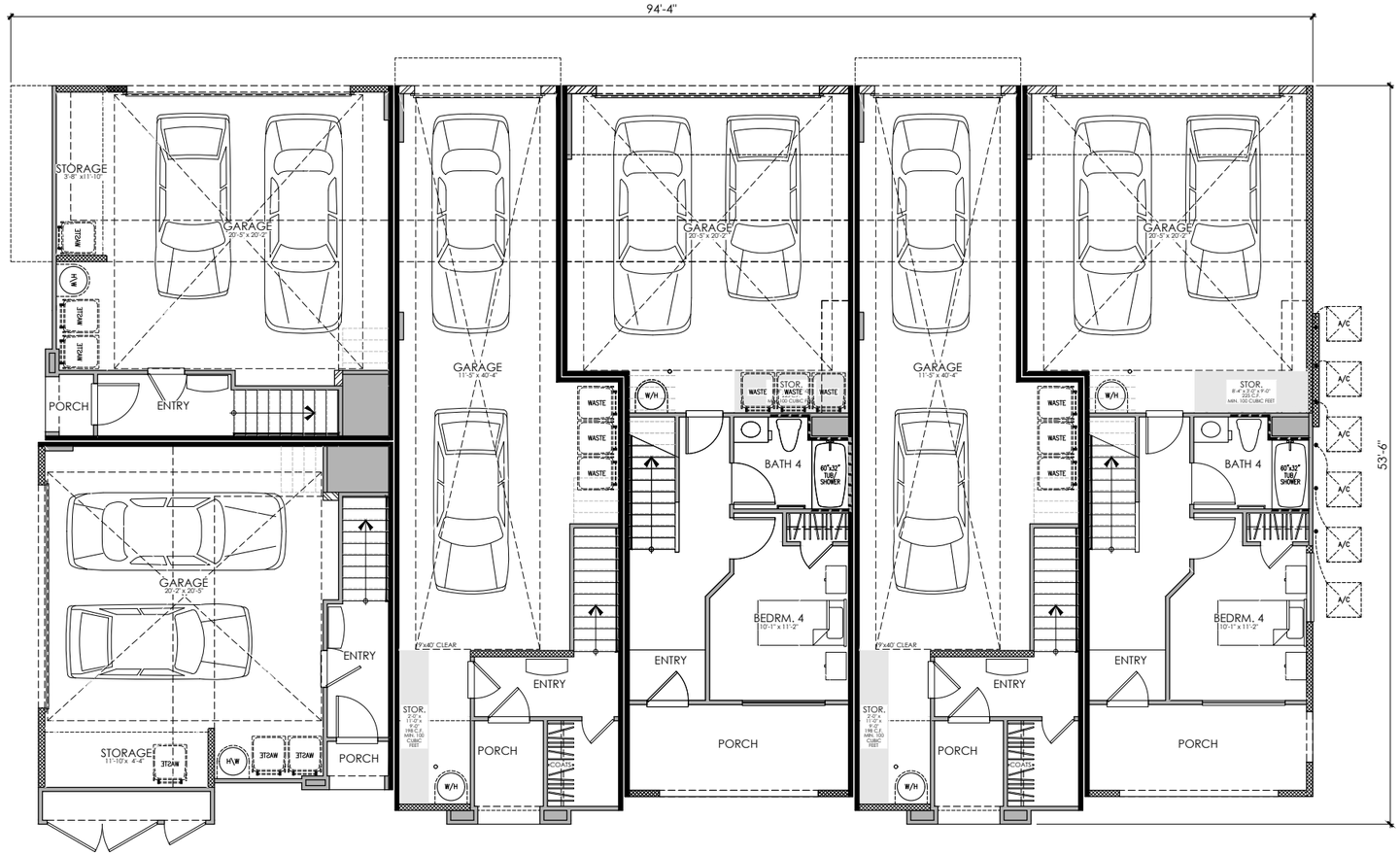
ALISO VIEJO, CALIFORNIA

06/24/2025

A-1

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2600

UNIT 2532X.1R
1,215 S.F.
2 BDRM., 2.5 BATH



UNIT 2532.1R	UNIT 1633.1	UNIT 1638.1	UNIT 1633.1	UNIT 1638X.1
1,215 S.F. 2 BDRM., 2.5 BATH	1,496 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,496 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH

TOWNHOME
602A BUILDING (6-PLEX)
FIRST FLOOR PLAN

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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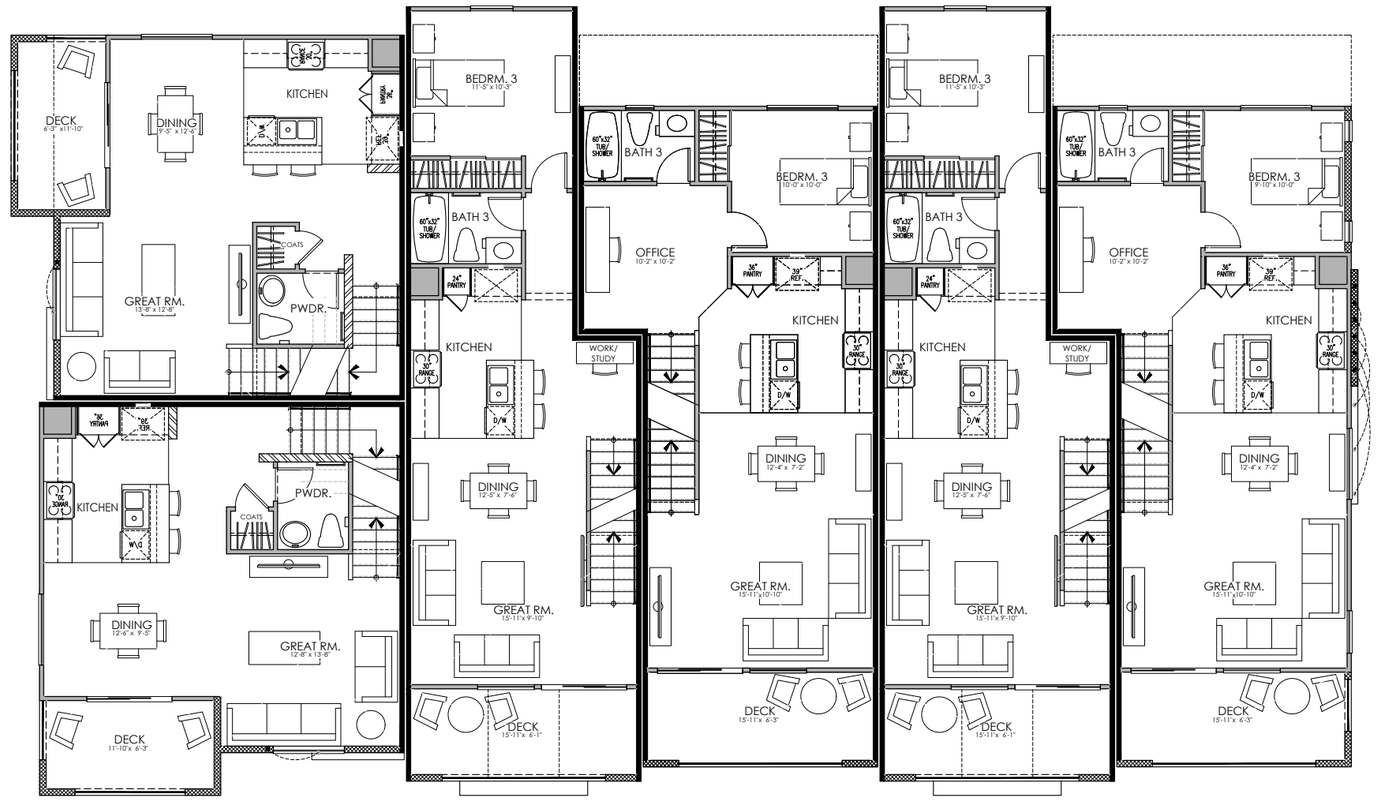
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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-2

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PLANNING + ARCHITEC
2601

UNIT 2532X.1R



UNIT 2532.1R | **UNIT 1633.1** | **UNIT 1638.1** | **UNIT 1633.1** | UNIT 1638X.1

TOWNHOME
602A BUILDING (6-PLEX)
SECOND FLOOR PLAN

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-3

0 2 4 8 12

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2602
24066

UNIT 2532X.1R



UNIT 2532.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

TOWNHOME
602A BUILDING (6-PLEX)
THIRD FLOOR PLAN

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

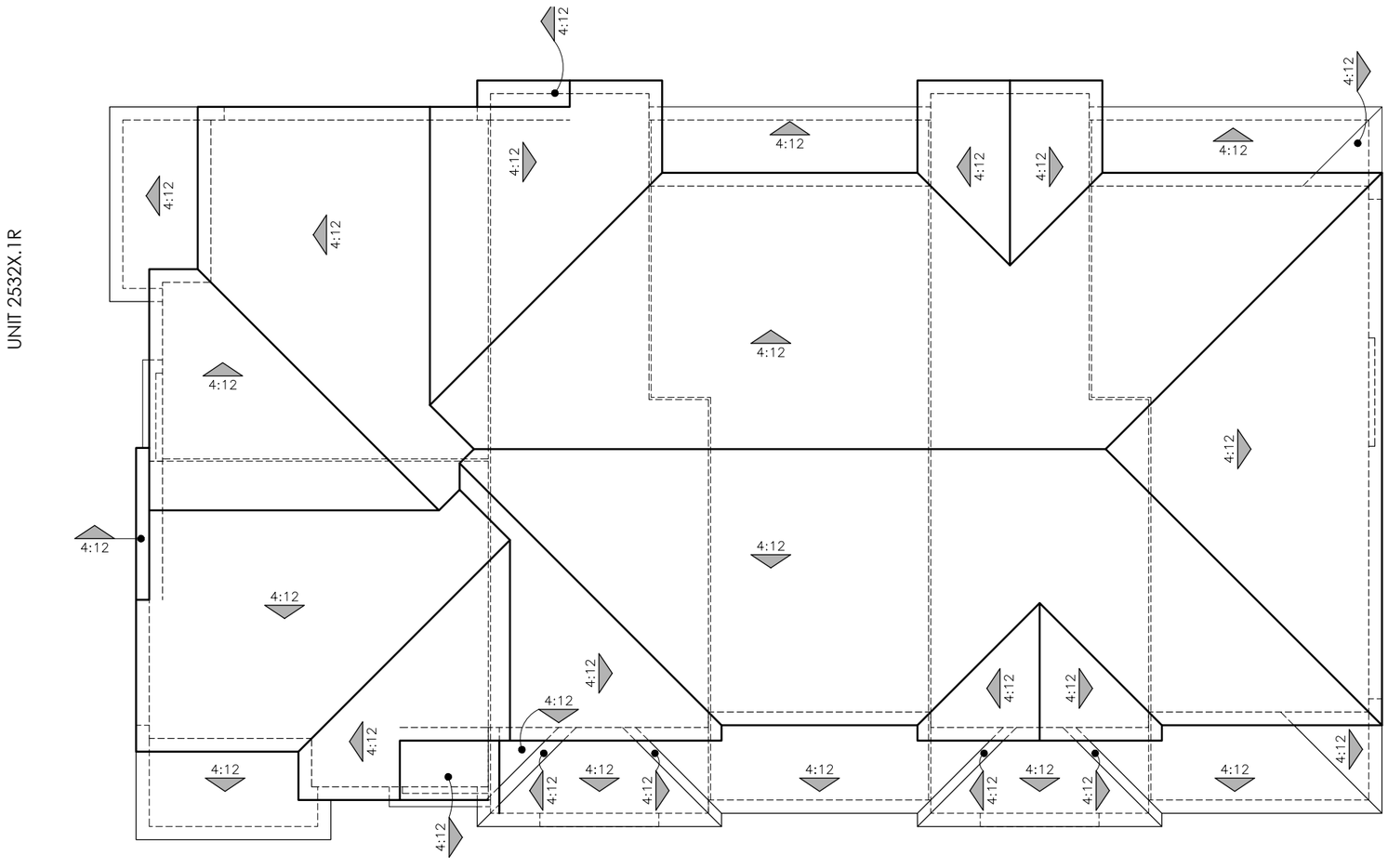
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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-4

Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2603



UNIT 2532X.1R

UNIT 2532.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

TOWNHOME
602A BUILDING (6-PLEX)
ROOF PLAN

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-5

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2604



UNIT 2531.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

FRONT ELEVATION

COLOR SCHEME 2

TOWNHOME
602A BUILDING (6-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

Meritage Homes | MLC Holdings, Inc.

ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-6

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24066
2605



UNIT 1638X.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 2531.2R | UNIT 2531X.1R

REAR ELEVATION

COLOR SCHEME 2

TOWNHOME
602A BUILDING (6-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-7

Kevin L. Crook Architect Inc
PLANNING + ARCHITEC
2606



UNIT 2532X.1R UNIT 2532.1R

LEFT ELEVATION



UNIT 1638X.1

RIGHT ELEVATION

COLOR SCHEME 2

TOWNHOME
602A BUILDING (6-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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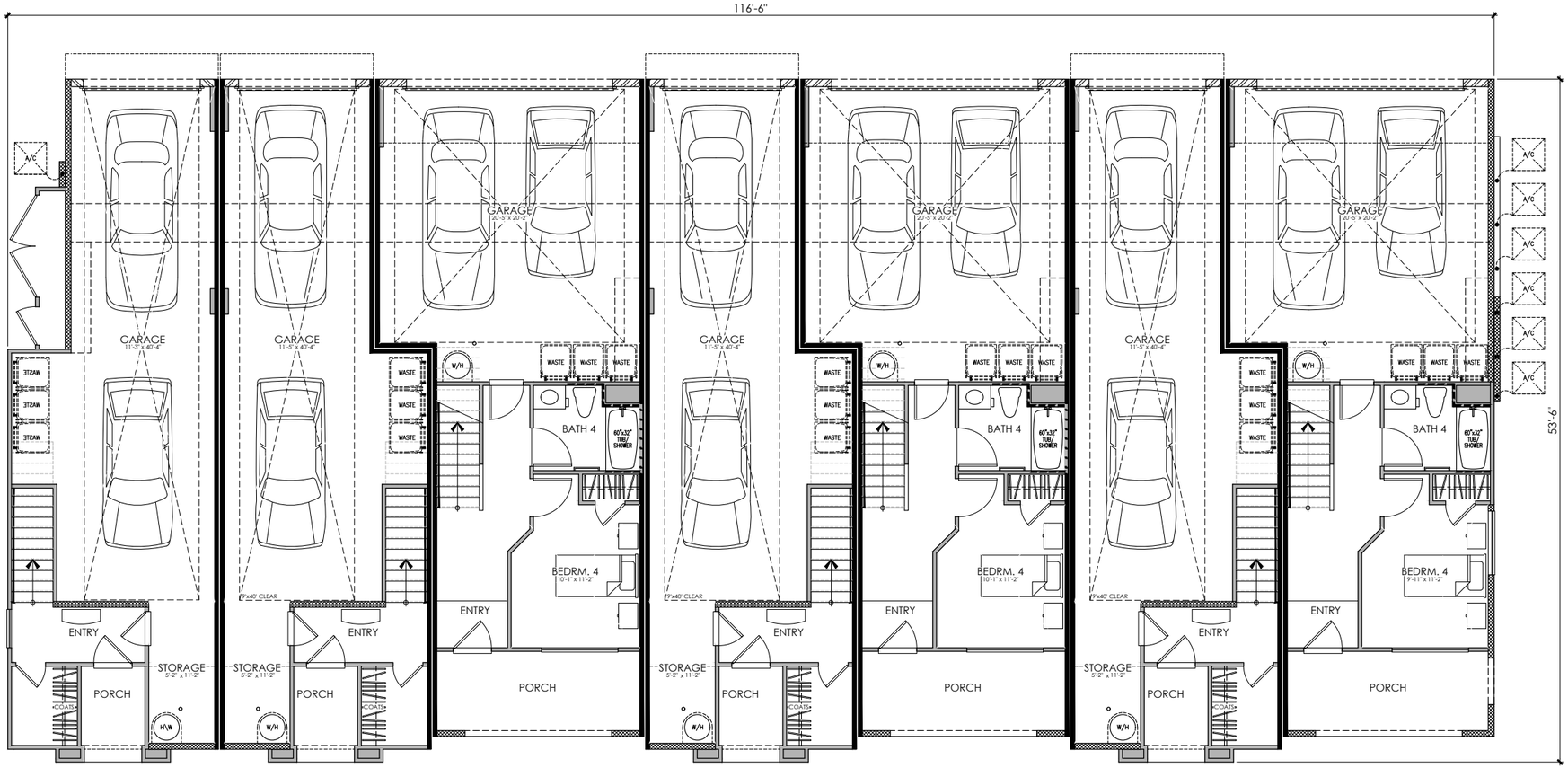
ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-8

Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2607

BUILDING 704 (7-PLEX)
AREA TABULATION

CONDITIONED SPACE	
FIRST FLOOR AREA	1,687 SQ. FT.
SECOND FLOOR AREA	4,939 SQ. FT.
THIRD FLOOR AREA	4,657 SQ. FT.
TOTAL DWELLING	11,283 SQ. FT.
UNCONDITIONED SPACE	
GARAGE	3,887 SQ. FT.
PORCH	482 SQ. FT.
DECK	758 SQ. FT.



UNIT 1633.1R	UNIT 1633.1	UNIT 1638.1	UNIT 1633.1	UNIT 1638.1	UNIT 1633.1	UNIT 1638X.1
1,497 S.F. 3 BDRM., 3 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
704A BUILDING (7-PLEX)
FIRST FLOOR PLAN

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2608



UNIT 1633.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

TOWNHOME
704A BUILDING (7-PLEX)
SECOND FLOOR PLAN

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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PLANNING + ARCHITEC



UNIT 1633.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
704A BUILDING (7-PLEX)
THIRD FLOOR PLAN

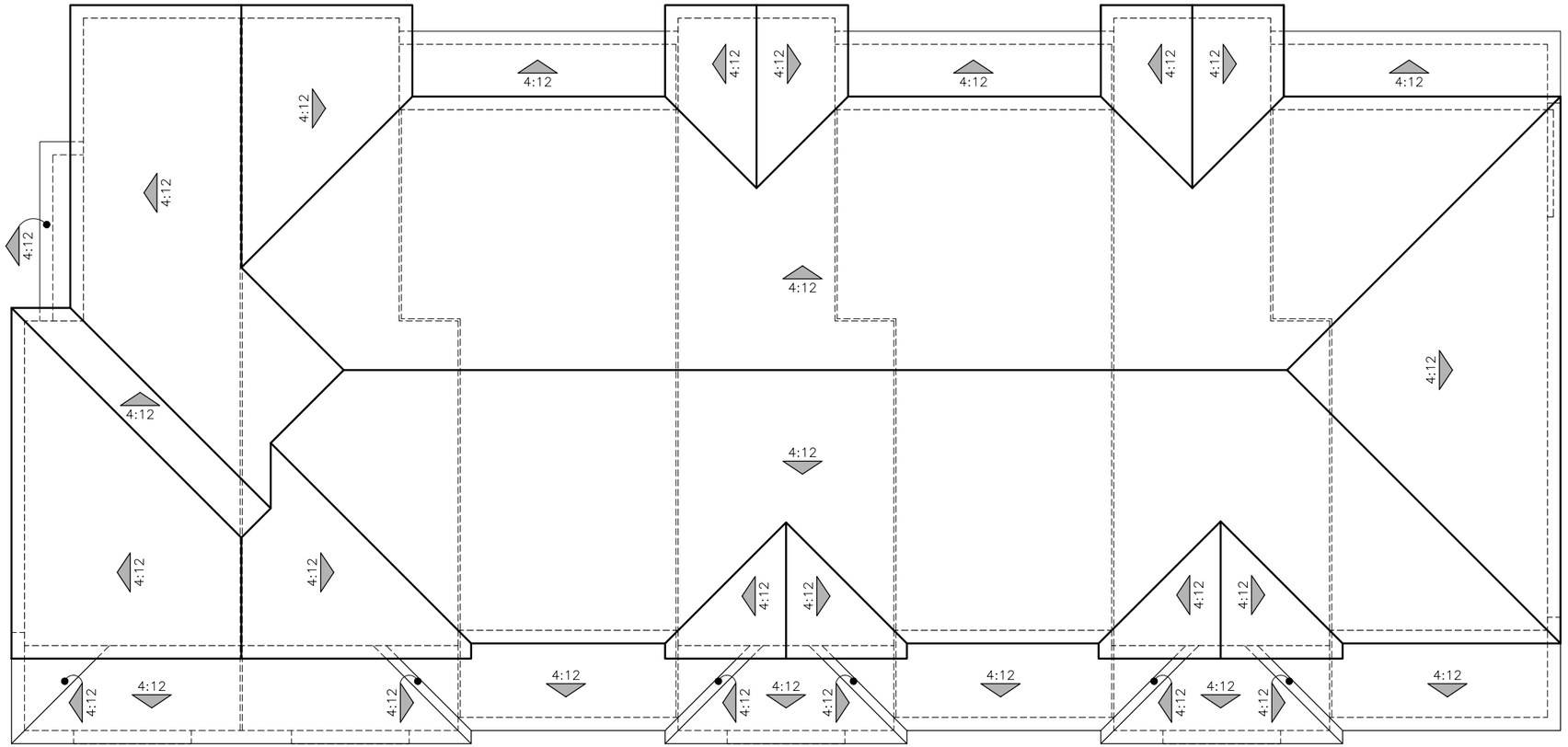
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PLANNING + ARCHITEC
2610



UNIT 1633.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
704A BUILDING (7-PLEX)
ROOF PLAN

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Kevin L. Crook Architect Inc
PLANNING + ARCHITEC
2611

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 1633.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

FRONT ELEVATION

COLOR SCHEME 1

TOWNHOME
704A BUILDING (7-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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06/24/2025
A-13

Kevin L. Crook Architect Inc 24066
PLANNING + ARCHITEC
2612

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 1638X.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1633.1R

REAR ELEVATION

COLOR SCHEME 1

TOWNHOME
704A BUILDING (7-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
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Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC
2613

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 1633.1R

LEFT ELEVATION



UNIT 1638X.1

RIGHT ELEVATION

COLOR SCHEME 1

TOWNHOME
704A BUILDING (7-PLEX)
SPANISH ECLECTIC "A" ELEVATIONS

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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ARGONAUT
ALISO VIEJO, CALIFORNIA

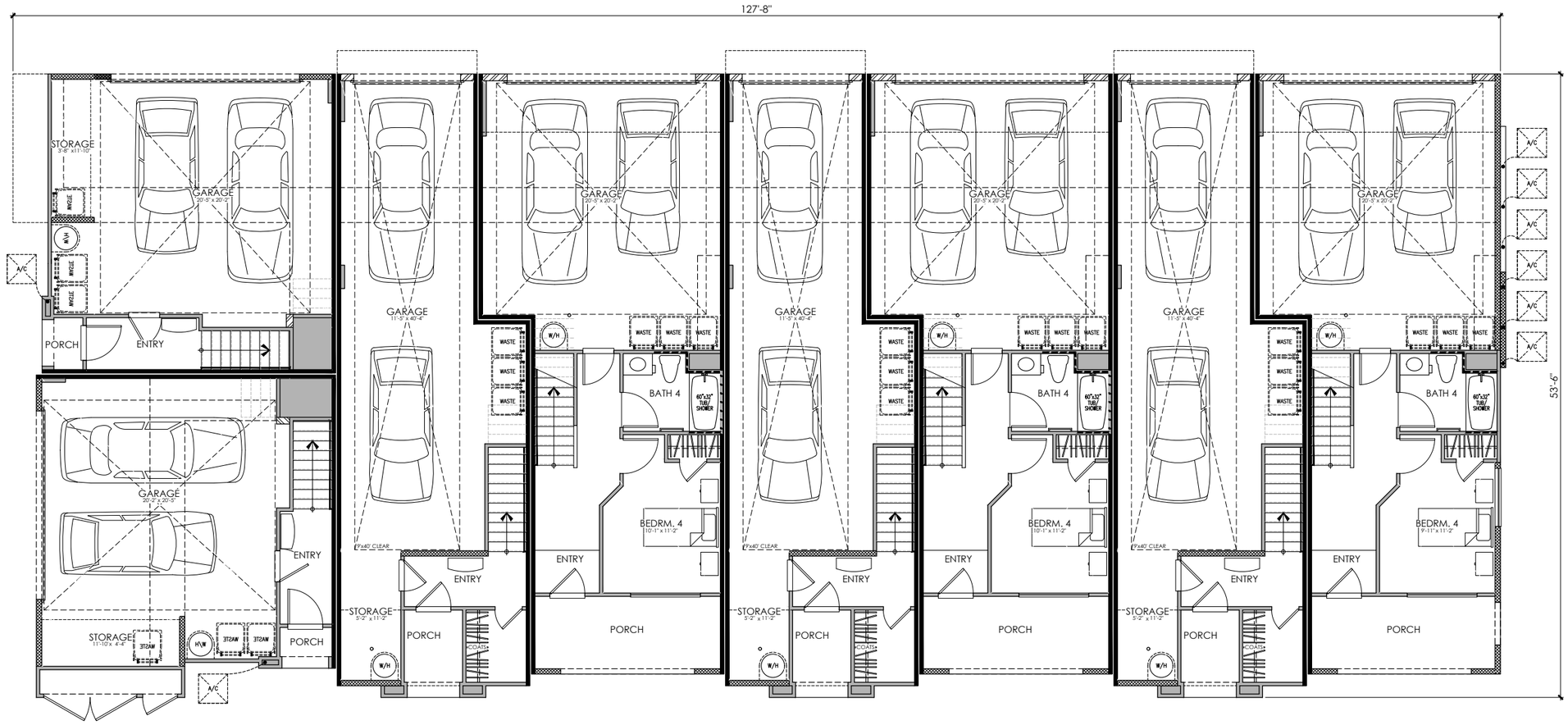
06/24/2025
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Kevin L. Crook Architect Inc.
PLANNING + ARCHITECTURE
2614

BUILDING 801 (8-PLEX)
AREA TABULATION

CONDITIONED SPACE	
FIRST FLOOR AREA	1,729 SQ. FT.
SECOND FLOOR AREA	5,427 SQ. FT.
THIRD FLOOR AREA	5,060 SQ. FT.
TOTAL DWELLING	12,216 SQ. FT.
UNCONDITIONED SPACE	
GARAGE	4,399 SQ. FT.
PORCH	472 SQ. FT.
DECK	817 SQ. FT.

UNIT 2532X.1R
1,215 S.F.
2 BDRM., 2.5 BATH



UNIT 2532.1R	UNIT 1633.1	UNIT 1638.1	UNIT 1633.1	UNIT 1638.1	UNIT 1633.1	UNIT 1638X.1
1,215 S.F. 2 BDRM., 2.5 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH

TOWNHOME
801A BUILDING (8-PLEX)
FIRST FLOOR PLAN

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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ALISO VIEJO, CALIFORNIA

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A-16

Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2615

UNIT 2532X.1R



UNIT 2532.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
801A BUILDING (8-PLEX)
SECOND FLOOR PLAN

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Kevin L. Crook Architect Inc. 2616
PLANNING + ARCHITEC
24066

UNIT 2532X.1R



UNIT 2532.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
801A BUILDING (8-PLEX)
THIRD FLOOR PLAN

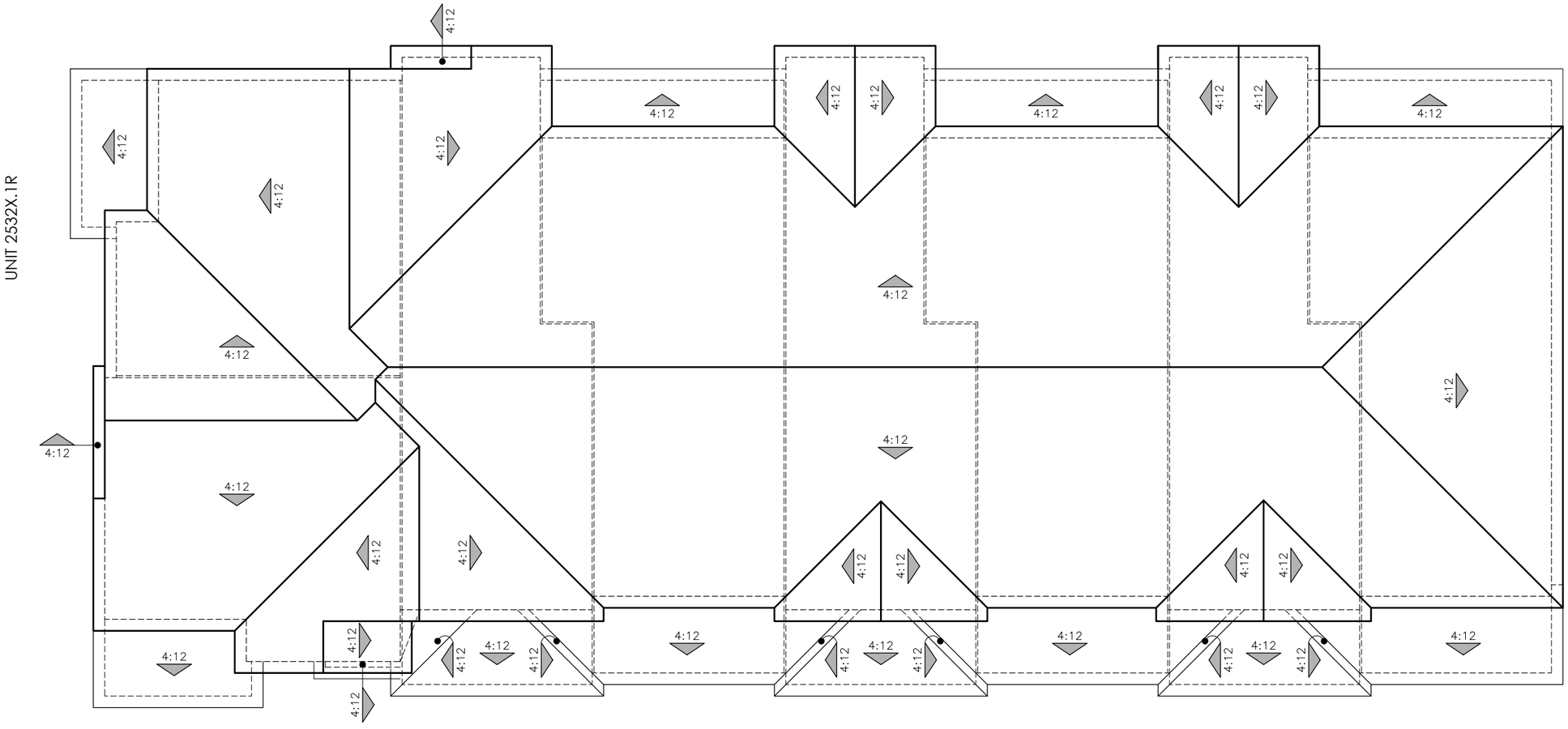
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Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2617



UNIT 2532.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
801A BUILDING (8-PLEX)
ROOF PLAN

0 2 4 8 12

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Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2618

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 2532.1R | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638X.1

FRONT ELEVATION

COLOR SCHEME 2

TOWNHOME
801A BUILDING (8-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-20

Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2619

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 1638X.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 2532X.1R

REAR ELEVATION

COLOR SCHEME 2

TOWNHOME
801A BUILDING (8-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-21

Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2620

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 2532X.1R UNIT 2532.1R

LEFT ELEVATION



UNIT 1638X.1

RIGHT ELEVATION

COLOR SCHEME 2

TOWNHOME
801A BUILDING (8-PLEX)
SPANISH ECLECTIC "A" ELEVATIONS

OCCUPANCY: R3 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13D
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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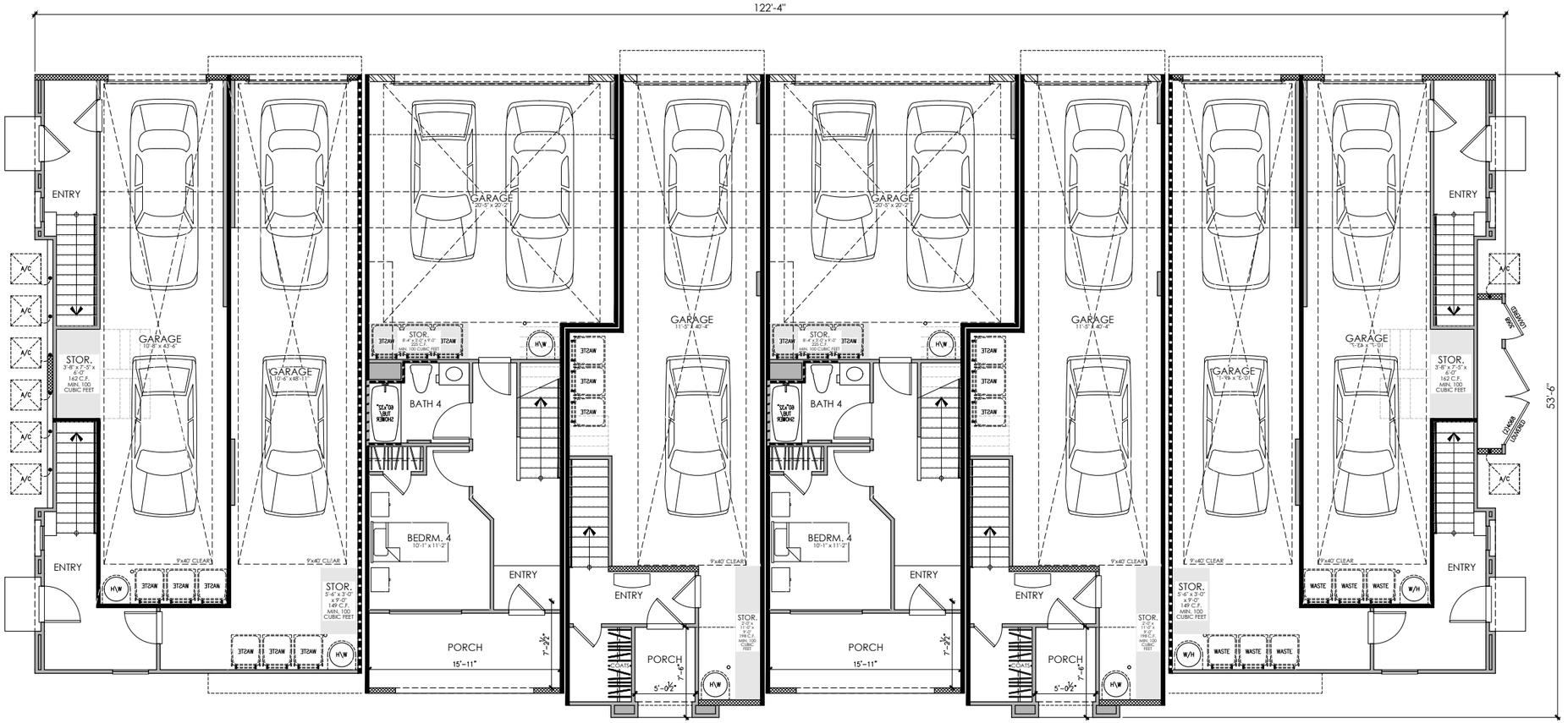
06/24/2025
A-22

Kevin L. Crook Architect Inc.
PLANNING + ARCHITECTURE
2621

BUILDING 807 (8-PLEX)
AREA TABULATION

CONDITIONED SPACE	
FIRST FLOOR AREA	1,454 SQ. FT.
SECOND FLOOR AREA	4,906 SQ. FT.
THIRD FLOOR AREA	5,308 SQ. FT.
TOTAL DWELLING	11,668 SQ. FT.
UNCONDITIONED SPACE	
GARAGE	4,356 SQ. FT.
PORCH	366 SQ. FT.
DECK	766 SQ. FT.

UNIT 2531X.1R
1,272 S.F.
2 BDRM., 2.5 BATH



UNIT 2531X.1
1,272 S.F.
2 BDRM., 2.5 BATH

UNIT 2531.1R	UNIT 1638.1R	UNIT 1633.1R	UNIT 1638.1R	UNIT 1633.1R	UNIT 2531.1
1,300 S.F. 2 BDRM., 2.5 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,765 S.F. 4 BDRM., 4 BATH	1,497 S.F. 3 BDRM., 3 BATH	1,300 S.F. 2 BDRM., 2.5 BATH

TOWNHOME
807A BUILDING (8-PLEX)
FIRST FLOOR PLAN

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-23

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PLANNING + ARCHITEC 2622

UNIT 2531X.1R



UNIT 2531X.1

UNIT 2531.1R | UNIT 1638.1R | UNIT 1633.1R | UNIT 1638.1R | UNIT 1633.1R | UNIT 2531.1

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
807A BUILDING (8-PLEX)
SECOND FLOOR PLAN

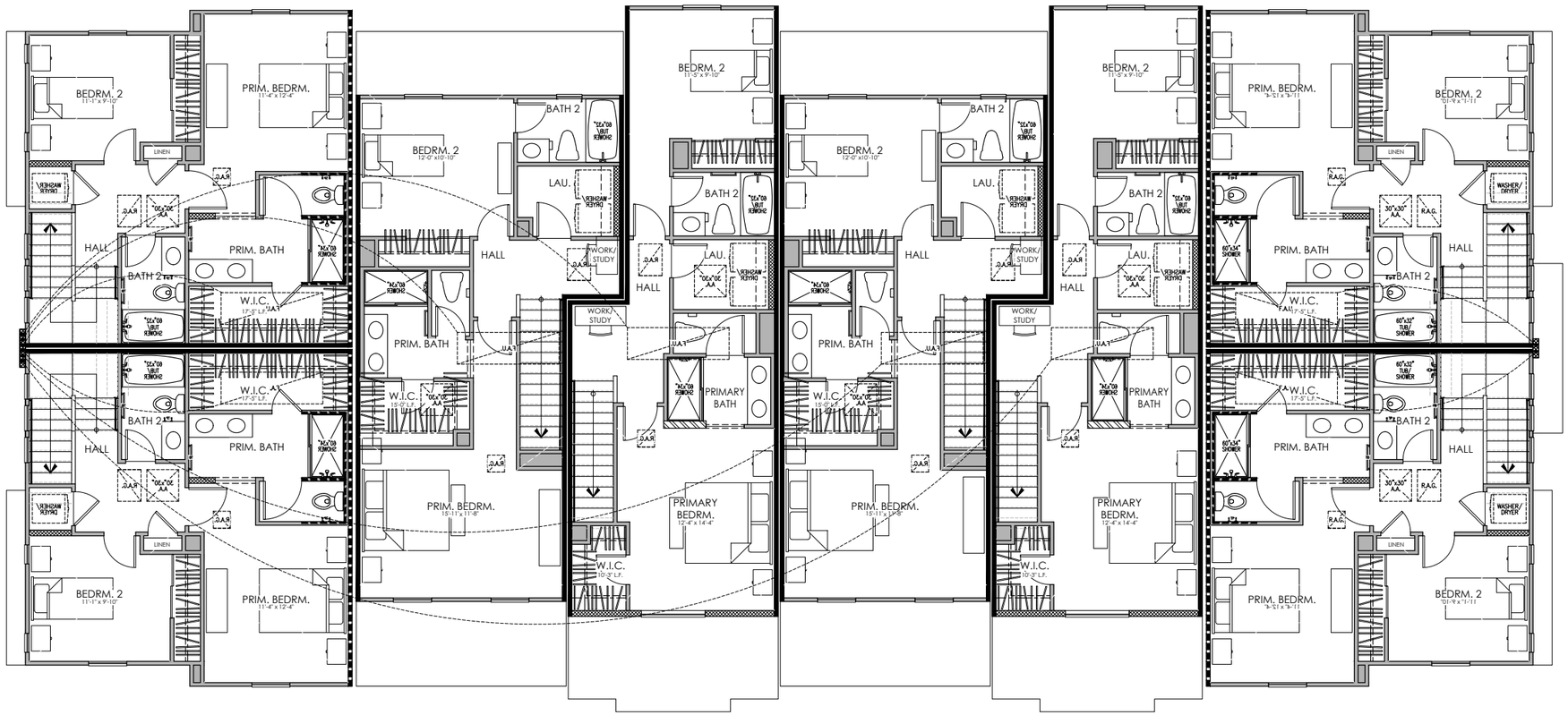
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ARGONAUT
ALISO VIEJO, CALIFORNIA

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A-24

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2623
24066



UNIT 2531.1R | UNIT 1638.1R | UNIT 1633.1R | UNIT 1638.1R | UNIT 1633.1R | UNIT 2531.1

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

TOWNHOME
807A BUILDING (8-PLEX)
THIRD FLOOR PLAN

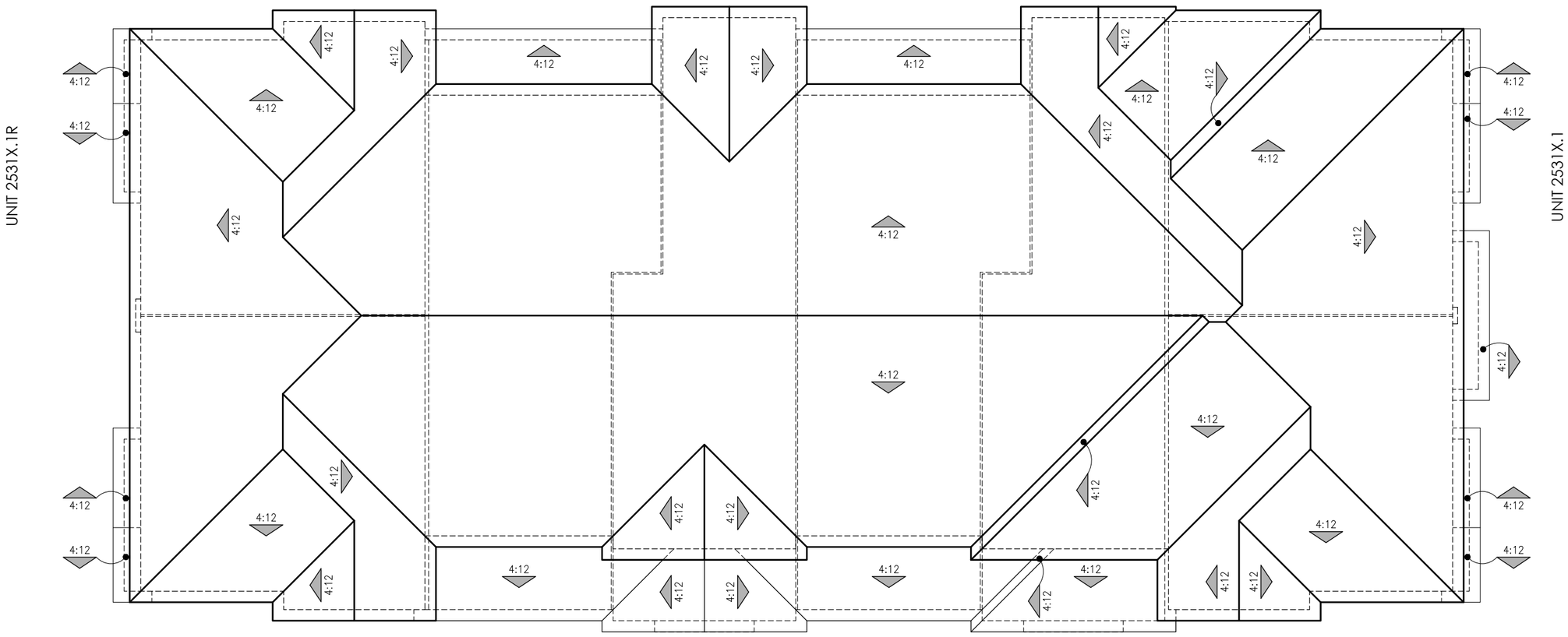
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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-25

Kevin L. Crook Architect Inc
PLANNING + ARCHITEC
2624



UNIT 2531.1R | UNIT 1638.1R | UNIT 1633.1R | UNIT 1638.1R | UNIT 1633.1R | UNIT 2531.1

TOWNHOME
807A BUILDING (8-PLEX)
ROOF PLAN

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

Meritage Homes | MLC Holdings, Inc.

ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-26

Kevin L. Crook Architect Inc
PLANNING + ARCHITEC
2625
24066

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 2531.1R | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 2531.1

FRONT ELEVATION

COLOR SCHEME 1

TOWNHOME
807A BUILDING (8-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

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ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-27

Kevin L. Crook Architect Inc
PLANNING + ARCHITEC
2626

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 2531X.1 | UNIT 2531.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 1633.1 | UNIT 1638.1 | UNIT 2531.1 | UNIT 2531X.1

REAR ELEVATION

COLOR SCHEME 1

TOWNHOME
807A BUILDING (8-PLEX)
SPANISH ECLECTIC "A" ELEVATION

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

0 2 4 8 12

Meritage Homes | MLC Holdings, Inc.

ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-28

Kevin L. Crook Architect Inc
PLANNING + ARCHITEC
2627

MATERIALS LEGEND
(WHERE OCCURS)

FRONT DOOR:	FIBERGLASS
GARAGE DOOR:	METAL SECTIONAL
ROOF:	CONCRETE LOW PROFILE "S" TILE
FASCIA:	2x6 WOOD
BARGE:	2x6 WOOD
GABLE END:	SIMULATED CLAY TILE
WALL:	STUCCO
WINDOWS:	VINYL
SHUTTERS:	SIMULATED WOOD
TRIM:	STUCCO OVER FOAM



UNIT 2531X.1R UNIT 2531.1R

LEFT ELEVATION



UNIT 2531.1R UNIT 2531X.1R

RIGHT ELEVATION

COLOR SCHEME 1

TOWNHOME
807A BUILDING (8-PLEX)
SPANISH ECLECTIC "A" ELEVATIONS

OCCUPANCY: R2 TOWNHOME/U
SPRINKLER SYSTEM: NFPA 13R
CONSTRUCTION: VB
SQUARE FOOTAGE MEASUREMENT TAKEN FROM OUTSIDE WALLS

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Meritage Homes | MLC Holdings, Inc.

ARGONAUT
ALISO VIEJO, CALIFORNIA

06/24/2025
A-29

Kevin L. Crook Architect Inc. 24066
PLANNING + ARCHITEC 2628

ARGONAUT

ALISO VIEJO, CA

PROJECT	24066
CREATED	7/19/24
Remove Tile	8/21/24
City Rev.	5/22/25

SPANISH ECLECTIC "A"	SCHEME 1	SCHEME 2
STUCCO 1	1613	1565
STUCCO PAINT MATCH***	SW6078 REALIST BEIGE	SW7015 REPOSE GRAY
STUCCO 2 (WAINSCOT / 1ST FLOOR STUCCO ENTRIES)	SW9084 COCOA WHIP	SW9170 ACIER
FASCIA / TRIM / GARAGE DOOR	SW6083 SABLE	SW7019 GAUNTLET GRAY
FRONT DOORS / SHUTTERS	SW2802 ROOKWOOD RED	SW0032 NEEDLEPOINT NAVY
CLAY PIPES	SW6061 TANBARK	SW6061 TANBARK
WROUGHT IRON	SW7675 SEALSKIN	SW7675 SEALSKIN
EAGLE ROOF: LOW PROF. "S" MALIBU	2636 PIEDMONT BLEND	2606 VALLEJO RANGE
BORAL ROOF: LOW PROF. "S" VILLA	1VICS3182 GARNET BLEND	1VICS6464 CA MISSION BLEND
GUTTERS:	RUSTIC BROWN	RUSTIC BROWN

STUCCO:	OMEGA
PAINT:	SHERWIN WILLIAMS
CONCRETE ROOF:	EAGLE / WESTLAKE
GUTTERS:	RGS

Meritage Homes

Kevin L. Crook **Architect** Inc

PLANNING + ARCHITECTURE

ALL FLASHING, GUTTERS, DOWNSPOUTS ETC. TO BE PAINTED TO **MATCH** ADJACENT SURFACE.

*** For photoshop renderings only, do NOT use in the field

SPANISH ECLECTIC “A”
SCHEME #1



ARGONAUT
ALISO VIEJO, CA

#24066
AUG. 21, 2024

Kevin L. Crook Architect Inc
PLANNING + ARCHITECTURE

SPANISH ECLECTIC “A”
SCHEME #2



ARGONAUT
ALISO VIEJO, CA

#24066
AUG. 21, 2024

Kevin L. Crook Architect Inc
PLANNING + ARCHITECTURE

COLOR BOARDS - “A“ SPANISH COLONIAL

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TENTATIVE TRACT NO. 19340

FOR CONDOMINIUM PURPOSES

IN THE CITY OF ALISO VIEJO,
COUNTY OF ORANGE,
STATE OF CALIFORNIA

ABBREVIATIONS

APN	ASSESSOR'S PARCEL NUMBER	OCFA	ORANGE COUNTY FIRE AUTHORITY
BLDG	BUILDING	P/P	POWER POLE
BNDY	BOUNDARY	PPTY	PROPERTY
℄	CENTERLINE	PL	PROPERTY LINE
C&G	CURB AND GUTTER	PROP	PROPOSED
CF	CURB FACE	RCE	REGISTERED CIVIL ENGINEER
CONC	CONCRETE	RET	RETAINING
DW	DOMESTIC WATER	RW	RECLAIMED WATER
DWY	DRIVEWAY	R/W	RIGHT-OF-WAY
E	EAST	S	SOUTH
EG	EXISTING GRADE	SCE	SO CAL EDISON
ELEC	ELECTRICAL	SL	STREET LIGHT
E'LY	EASTERLY	S'LY	SOUTHERLY
ESMT	EASEMENT	SD	STORM DRAIN
EX	EXISTING	STD.	STANDARD
FG	FINISHED GRADE	SWR	SANITARY SEWER
FT	FEET	ST	STREET
FW	FACE OF WALL	SWLK	SIDEWALK
HSCP	HARDSCAPE	TEL	TELEPHONE
LL	LOT LINE	TM	TRACT MAP
LSCP	LANDSCAPE	TR	TRACT
MH	MANHOLE	TW	TOP OF WALL
MIN	MINIMUM	TYP.	TYPICAL
N'LY	NORTHERLY	W'LY	WESTERLY
NO	NUMBER		

ZONING

EXISTING ZONING:	BUSINESS PARK
EXISTING LAND USE:	BUSINESS PARK
PROPOSED LAND USE:	HIGH DENSITY RESIDENTIAL
PROPOSED DENSITY:	21.6 DU/AC
PROVIDED STREET PARKING:	7
PROVIDED OFF-STREET PARKING:	150
GARAGE PARKING: 2 PER UNIT =	122
GUEST PARKING =	28

TENTATIVE TRACT MAP SUMMARY

NUMBERED LOTS:	1 LOT
LETTERED LOTS:	0 LOTS
TOTAL AREA GROSS:	2.83 AC
TOTAL AREA NET:	2.83 AC
TOTAL AREA TO BE DEDICATED:	0 AC
TOTAL AREA FOR NUMBERED LOTS:	2.83 AC
TOTAL AREA FOR LETTERED LOTS:	0 AC
TOTAL DWELLING UNITS:	61
DETACHED UNITS:	0
ATTACHED UNITS:	61
RESIDENTIAL BUILDING SITE COVERAGE:	40%

14.06.010 CERTIFICATION OF OWNERSHIP

A. WHEN A TENTATIVE MAP IS FILED, THE PERSON FILING THE MAP MUST CERTIFY TO ONE OF THE FOLLOWING:

1. THAT HE IS THE RECORD OWNER OF THE PROPERTY; OR
2. THAT THE RECORD OWNER OF THE PROPERTY CONSENTS TO THE FILING OF THE MAP.

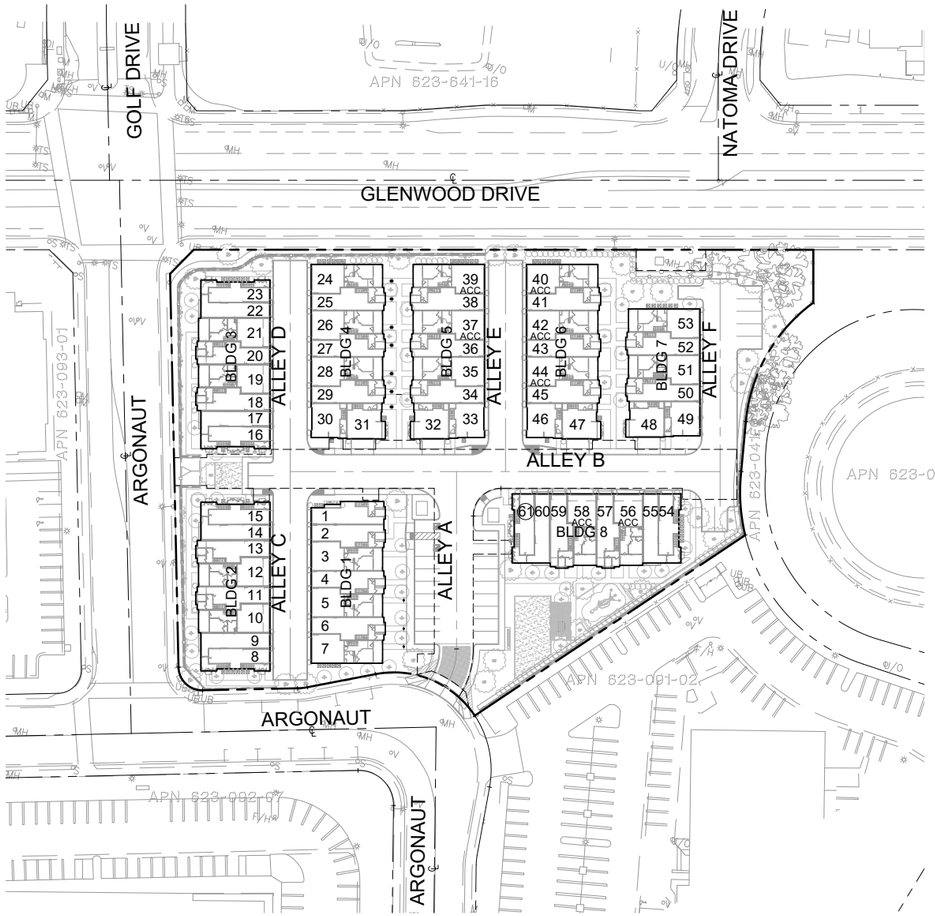
B. EACH TENTATIVE MAP SHALL BE SIGNED BY THE PROPERTY OWNER OR OWNERS OF RECORD, AND SHALL BE ACCOMPANIED BY EVIDENCE OF OWNERSHIP OF THE REAL PROPERTY PROPOSED FOR SUBDIVISION.

FEMA FLOOD ZONE

THE PROJECT IS LOCATED IN FEMA FLOOD ZONE X, AN AREA OF MINIMAL FLOOD HAZARD PER FIRM MAP 06059C0426J, EFFECTIVE 12/3/2009.

UTILITIES

WATER:	MOULTON NIGUEL WATER DISTRICT	(949) 831-2500
SEWER:	MOULTON NIGUEL WATER DISTRICT	(949) 831-2500
TELEPHONE:	AT&T/	(949) 440-6610
	COX COMMUNICATIONS	(949) 546-2000
NATURAL GAS:	SOUTHERN CALIFORNIA GAS COMPANY	(800) 427-2200
ELECTRICAL:	SOUTHERN CALIFORNIA EDISON CO.	(800) 655-4555
FIRE PROTECTION:	ORANGE COUNTY FIRE AUTHORITY	(714) 573-6000



SITE PLAN

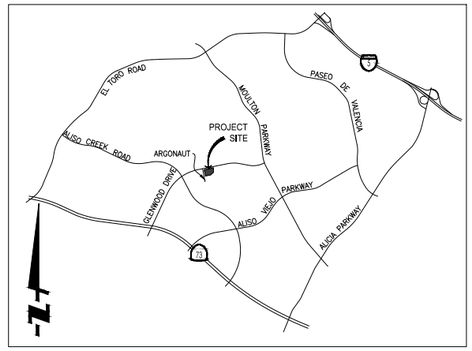
LEGEND

TRACT BOUNDARY	
LOT LINE	
RIGHT-OF-WAY	
EXISTING EASEMENT	
PROPOSED EASEMENT	
EXISTING WATER	W
PROPOSED WATER	W
EXISTING SEWER	S
PROPOSED SEWER	S
EXISTING STORM DRAIN	
PROPOSED STORM DRAIN	SD

50' 0' 25' 50'
SCALE: 1" = 50'

SHEET INDEX

C-1 – TITLE SHEET
C-2 – EXISTING CONDITIONS
C-3 – TENTATIVE TRACT MAP
C-4 – CONCEPTUAL GRADING PLAN
C-5 – SECTIONS
C-6 – EARTHWORK
C-7 – CONCEPTUAL UTILITY PLAN
C-8 – FIRE ACCESS SITE PLAN



VICINITY MAP

N.T.S.

OWNER

ARGONAUT OFFICES, LLC
36 DEEP SEA
NEWPORT COAST, CA 92657

CONTACT: KEVIN MOSHAYEDI
EMAIL: KMOSH3@GMAIL.COM
PH: 949.230.7589

RECORD OWNER OF THE PROPERTY CONSENTS TO THE FILING OF THE MAP.

DocuSigned by: Kevin Moshayedi 6/24/2025
OWNER'S SIGNATURE

DEVELOPER

MERITAGE HOMES
5 PETERS CANYON ROAD
IRVINE, CA 92606
PH: 949.299.3824

CONTACT: DANNY HINOJOSA
EMAIL: DANNY.HINOJOSA@MERITAGEHOMES.COM
PH: 310.741.0336

CIVIL ENGINEER

X ENGINEERING & CONSULTING
6 HUTTON CENTRE DR., SUITE 650
SANTA ANA, CA 92707
PH: 949.522.7100

CONTACT: ERIC LISSNER, PE

GEOTECHNICAL ENGINEER

SA GEOTECHNICAL
1000 NORTH COAST HIGHWAY SUITE 10
LAGUNA BEACH, CALIFORNIA 92651
PH: 949.403.7229

CONTACT: REZA SABERI, GE

BENCHMARK

DESIGNATION: 3X-47-83

DESCRIPTION: DESCRIBED BY OCS 2002 FOUND 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "3X-47-83", SET IN THE SOUTHEASTERLY CORNER OF A 4 FT. BY 15 FT. CONCRETE CATCH BASIN. MONUMENT IS LOCATED IN THE SOUTHEASTERLY CORNER OF THE INTERSECTION OF INDIAN CREEK\GLENWOOD AND MOULTON PARKWAY, 90 FT. SOUTHEASTERLY OF THE CENTERLINE OF INDIAN CREEK AND 60 FT. NORTHEASTERLY OF THE CENTERLINE OF MOULTON. MONUMENT IS SET LEVEL WITH THE SIDEWALK.

ELEVATION: 290.133 FT. (NAVD 88) LEVELED 1991

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS: "AF9686 BILL BILL GRM", AND "DG9736 P474 FALLBROOK_CS3004 CORS GRP", NAD83 (NSRS2011) EPOCH 2010.00 AS SHOWN HEREON.

ASSESSOR'S PARCEL NUMBER

623-091-01

LEGAL DESCRIPTION

PARCEL 1 OF PARCEL MAP NO. 85-158, AS SHOWN ON A MAP FILED IN BOOK 218, PAGES 27 TO 30 INCLUSIVE OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY, CALIFORNIA.

ADDRESS

95 ARGONAUT, ALISO VIEJO, CALIFRONIA

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:

X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER ERIC C. LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

SCALE:	AS SHOWN
DESIGNED BY:	DA, RR
DRAWN BY:	DA
CHECKED BY:	EL

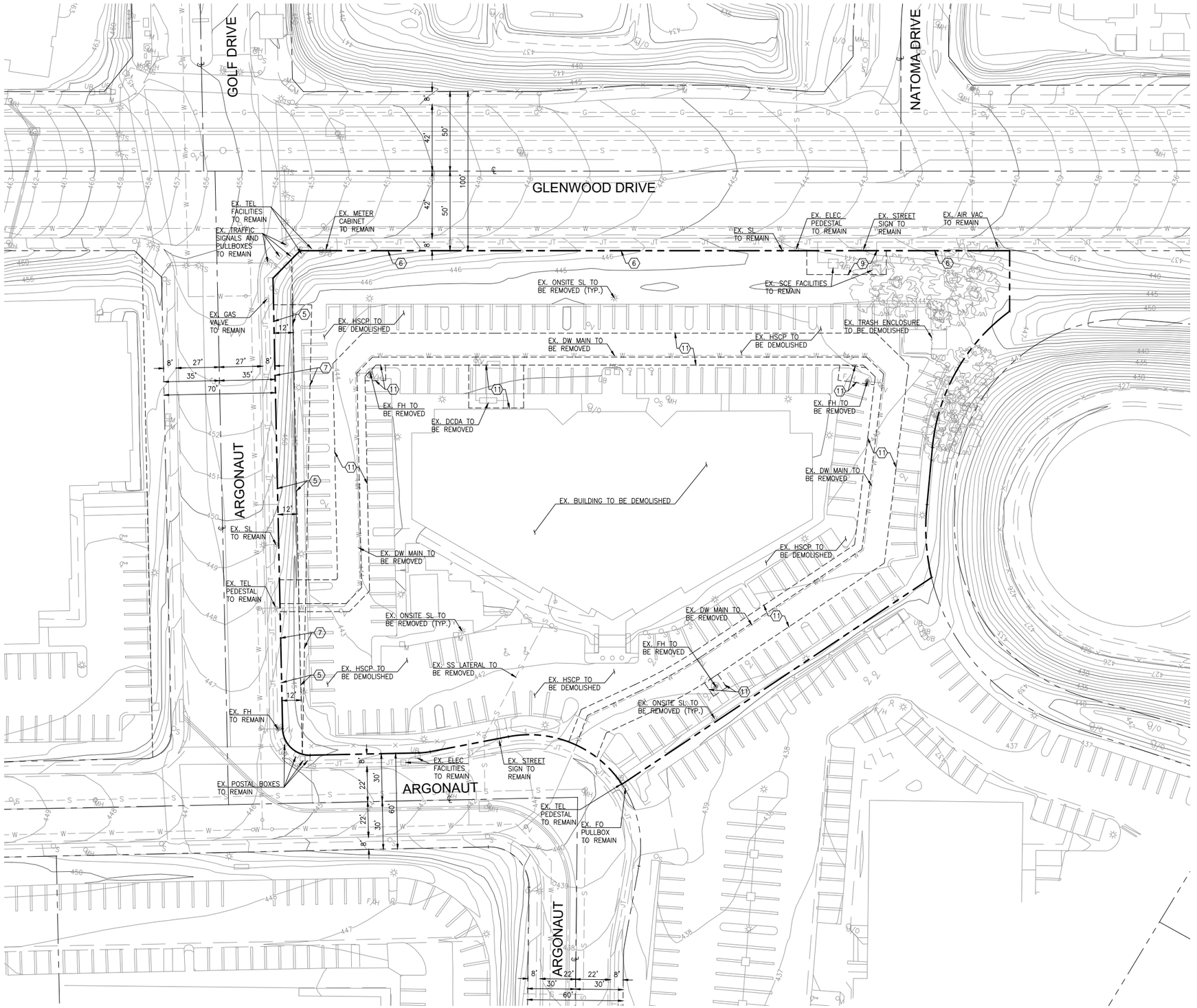
TITLE SHEET

TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

SHEET C-1 OF 8

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EXISTING EASEMENTS

(3) AN EASEMENT FOR POLE LINES AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 21, 1926 IN BOOK 678 OF DEEDS, PAGE 106 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY.

NOTE: THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD INFORMATION.

(4) AN AIRCRAFT OPERATIONS, SOUND, AIR SPACE AND AVIGATION EASEMENT OVER SAID LAND SHOWN HEREIN ABOVE A MEAN SEA LEVEL ELEVATION OF 1050 FEET FOR PURPOSES AND SUBJECT TO THE SAME CONDITIONS AND LIMITATIONS AS SHOWN ON THAT CERTAIN EASEMENT RECORDED JULY 2, 1979 IN BOOK 13213, PAGE 1111, OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA AS DEDICATED TO THE COUNTY OF ORANGE ON THE MAP OF PARCEL MAP NO. 85-158 AS PER MAP IN BOOK 218, PAGE(S) 27 THROUGH 30 OF PARCEL MAPS, RECORDS OF ORANGE COUNTY.

NOTE: THE EASEMENT IS BLANKET IN NATURE OVER THE AIR SPACE.

(5) AN EASEMENT SHOWN OR DEDICATED ON THE MAP AS REFERRED TO IN THE LEGAL DESCRIPTION FOR LANDSCAPE AND MAINTENANCE AND INCIDENTAL PURPOSES, TO BE QUITCLAIMED.

(6) ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM GLENWOOD DRIVE, EXCEPT AT STREET INTERSECTIONS, HAVE BEEN DEDICATED OR RELINQUISHED ON THE FILED MAP, TO REMAIN.

(7) COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, ASSESSMENTS, LIENS, CHARGES, TERMS AND PROVISIONS IN THE DOCUMENT RECORDED APRIL 06, 1982 AS INSTRUMENT NO. 82-118353 OF OFFICIAL RECORDS, WHICH PROVIDE THAT A VIOLATION THEREOF SHALL NOT DEFEAT OR RENDER INVALID THE LIEN OF ANY FIRST MORTGAGE OR DEED OF TRUST MADE IN GOOD FAITH AND FOR VALUE, BUT DELETING ANY COVENANT, CONDITION OR RESTRICTION INDICATING A PREFERENCE, LIMITATION OR DISCRIMINATION BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS, NATIONAL ORIGIN, SEXUAL ORIENTATION, MARITAL STATUS, ANCESTRY, SOURCE OF INCOME OR DISABILITY, TO THE EXTENT SUCH COVENANTS, CONDITIONS OR RESTRICTIONS VIOLATE TITLE 42, SECTION 3604(C), OF THE UNITED STATES CODES. LAWFUL RESTRICTIONS UNDER STATE AND FEDERAL LAW ON THE AGE OF OCCUPANTS IN SENIOR HOUSING OR HOUSING FOR OLDER PERSONS SHALL NOT BE CONSTRUED AS RESTRICTIONS BASED ON FAMILIAL STATUS.

A DECLARATION OF ANNEXATION RECORDED APRIL 13, 1987 AS INSTRUMENT NO. 87-201111 OF OFFICIAL RECORDS.

DOCUMENT(S) DECLARING MODIFICATIONS THEREOF RECORDED SEPTEMBER 04, 1987 AS INSTRUMENT NO. 87-505204 OF OFFICIAL RECORDS, TO BE QUITCLAIMED.

(8) AN EASEMENT FOR MAINTENANCE AND INCIDENTAL PURPOSES, RECORDED APRIL 14, 1987 AS INSTRUMENT NO 87-204131 AND RE-RECORDED OCTOBER 01, 1987 AS INSTRUMENT NO. 87-554296, BOTH OF OFFICIAL RECORDS IN FAVOR OF ALISO VIEJO COMMUNITY ASSOCIATION, A CALIFORNIA CORPORATION.

NOTE: AFFECTS PARCELS 9-14 OF PM 85-158. DOES NOT AFFECT THE SUBJECT PROPERTY.

(9) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 29, 1987 AS INSTRUMENT NO. 87-548775 OF OFFICIAL RECORDS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, TO REMAIN.

(11) AN EASEMENT FOR RIGHTS-OF-WAY FOR SEWER LINES AND WATER TRANSMISSION AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 27, 1989 AS INSTRUMENT NO. 89-518828 OF OFFICIAL RECORDS IN FAVOR OF MOUNTAIN NIGUEL WATER DISTRICT, TO BE QUITCLAIMED.

30' 0' 15' 30'
SCALE: 1" = 30'

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:
X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER ERIC C. LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

SCALE: AS SHOWN	
DESIGNED BY: DA, RR	
DRAWN BY: DA	
CHECKED BY: EL	

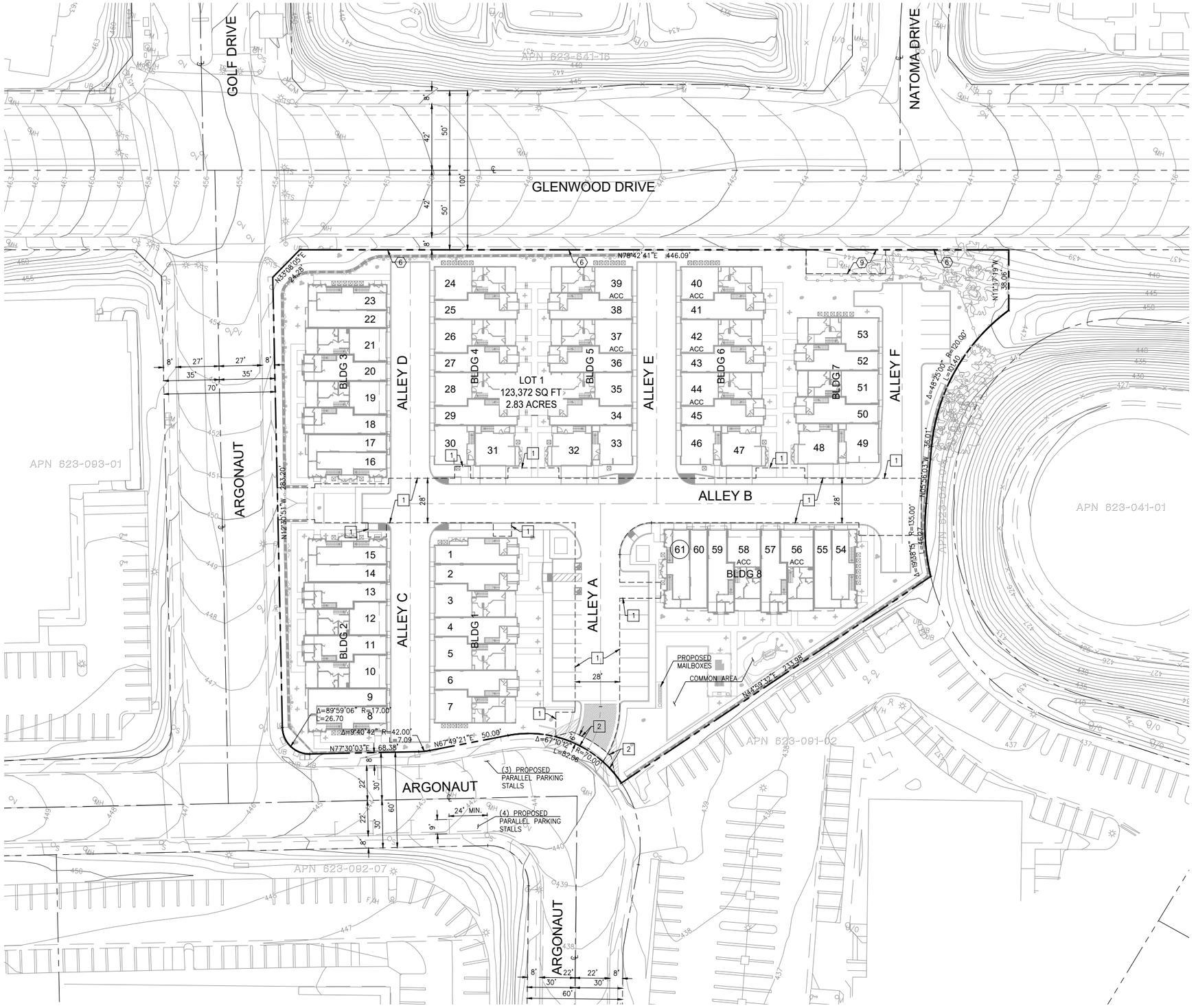
EXISTING CONDITIONS
TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

SHEET C-2 OF 8

2632

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EXISTING EASEMENTS TO REMAIN

(3) AN EASEMENT FOR POLE LINES AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 21, 1926 IN BOOK 678 OF DEEDS, PAGE 106 IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY.

NOTE: THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD INFORMATION.

(4) AN AIRCRAFT OPERATIONS, SOUND, AIR SPACE AND AVIGATION EASEMENT OVER SAID LAND SHOWN HEREIN ABOVE A MEAN SEA LEVEL ELEVATION OF 1050 FEET FOR PURPOSES AND SUBJECT TO THE SAME CONDITIONS AND LIMITATIONS AS SHOWN ON THAT CERTAIN EASEMENT RECORDED JULY 2, 1979 IN BOOK 13213, PAGE 1111, OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA AS DEDICATED TO THE COUNTY OF ORANGE ON THE MAP OF PARCEL MAP NO. 85-158 AS PER MAP IN BOOK 218, PAGE(S) 27 THROUGH 30 OF PARCEL MAPS, RECORDS OF ORANGE COUNTY.

NOTE: THE EASEMENT IS BLANKET IN NATURE OVER THE AIR SPACE.

(6) ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM GLENWOOD DRIVE, EXCEPT AT STREET INTERSECTIONS, HAVE BEEN DEDICATED OR RELINQUISHED ON THE FILED MAP, TO REMAIN.

(8) AN EASEMENT FOR MAINTENANCE AND INCIDENTAL PURPOSES, RECORDED APRIL 14, 1987 AS INSTRUMENT NO 87-204131 AND RE-RECORDED OCTOBER 01, 1987 AS INSTRUMENT NO. 87-554296, BOTH OF OFFICIAL RECORDS IN FAVOR OF ALISO VIEJO COMMUNITY ASSOCIATION, A CALIFORNIA CORPORATION.

NOTE: AFFECTS PARCELS 9-14 OF PM 85-158. DOES NOT AFFECT THE SUBJECT PROPERTY.

(9) AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 29, 1987 AS INSTRUMENT NO. 87-548775 OF OFFICIAL RECORDS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, TO REMAIN.

PROPOSED EASEMENTS

[1] EASEMENT FOR WATER AND SEWER UTILITIES AND INCIDENTAL PURPOSES DEDICATED TO THE MOULTON NIGUEL WATER DISTRICT

[2] EASEMENT FOR PEDESTRIAN ACCESS DEDICATED TO THE CITY OF ALISO VIEJO

NOTE: BOUNDARY DATA ESTABLISHED VIA FIELD SURVEY.

30' 0' 15' 30'
SCALE: 1" = 30'

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:
X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
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949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER ERIC LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

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DESIGNED BY:	DA, RR
DRAWN BY:	DA
CHECKED BY:	EL

TENTATIVE TRACT MAP

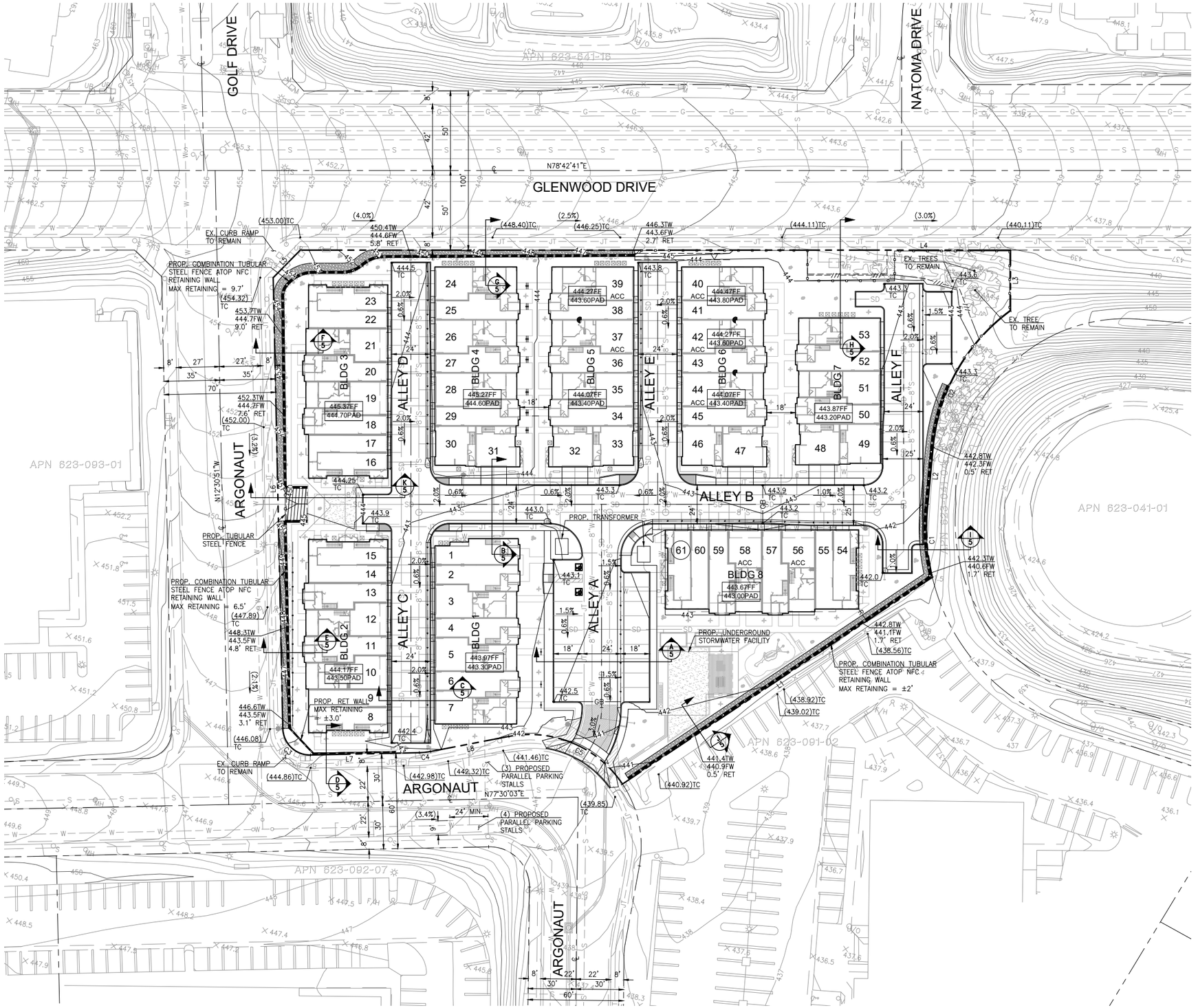
TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

SHEET C-3 OF 8

2633

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LEGEND

- TRACT BOUNDARY
- RIGHT OF WAY
- STREET CENTERLINE
- PROPOSED DAYLIGHT
- TOP OF SLOPE
- TOE OF SLOPE
- W — PROPOSED DOMESTIC WATER
- SD — PROPOSED STORM DRAIN
- S — PROPOSED SANITARY SEWER
- 100 — PROPOSED ELEVATION
- 100 — EXISTING ELEVATION
- GB — GB — PROPOSED GRADE BREAK
- R — R — PROPOSED RIDGE LINE
- PROPOSED COMBINATION TUBULAR STEEL FENCE ATOP NFC RETAINING WALL
- PROPOSED TUBULAR STEEL FENCE
- FLOW LINE
- PROPOSED CHANGE IN SLAB ELEVATION
- ACC — INDICATES ACCESSIBLE UNIT
- PROPOSED PAVERS PER LANDSCAPE PLAN

LINE & CURVE TABLE

LINE #/CURVE #	LENGTH	DIRECTION/DELTA	RADIUS
C1	46.27'	19°38'15"	135.00'
C2	101.40'	48°25'00"	120.00'
C3	26.70'	89°59'06"	17.00'
C4	7.09'	9°40'42"	42.00'
C5	82.06'	67°10'11"	70.00'
L1	233.98'	N44°59'32"E	–
L2	36.01'	N05°56'03"W	–
L3	38.06'	N11°17'19"W	–
L4	446.09'	N78°42'41"E	–
L5	24.28'	N33°08'05"E	–
L6	283.20'	N12°30'51"W	–
L7	68.38'	N77°30'03"E	–
L8	50.00'	N67°49'21"E	–

30' 0' 15' 30'
SCALE: 1" = 30'

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:
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REGISTERED PROFESSIONAL ENGINEER ERIC L. LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

SCALE:	AS SHOWN
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DRAWN BY:	DA
CHECKED BY:	EL

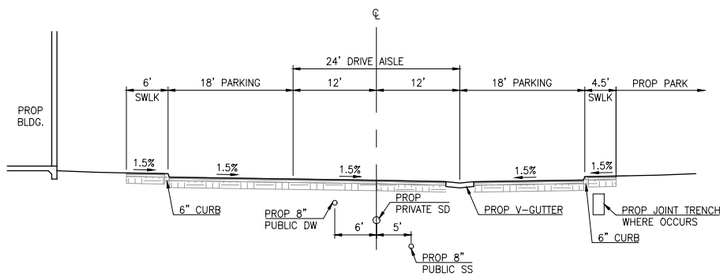
CONCEPTUAL GRADING PLAN
TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

SHEET C-4 OF 8

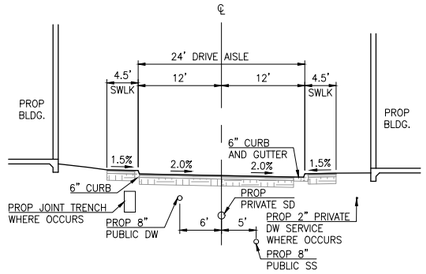
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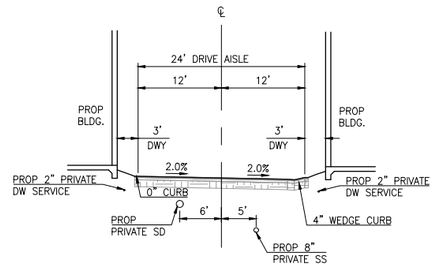
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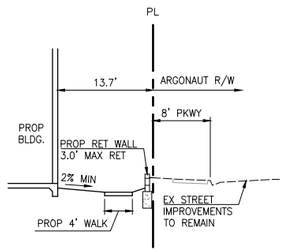
TYPICAL PRIVATE ALLEY A (A/5)
SCALE: NTS



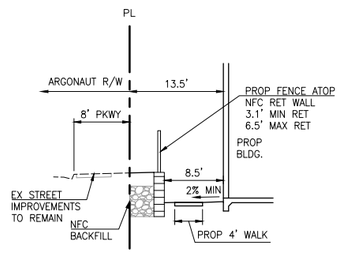
TYPICAL PRIVATE ALLEY B (B/5)
SCALE: NTS



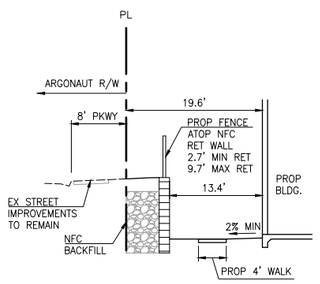
TYPICAL PRIVATE ALLEY (C/5)
SCALE: NTS



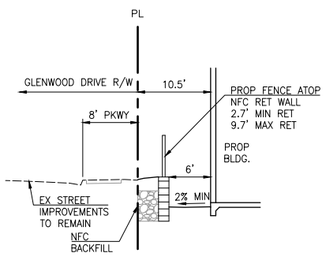
SECTION (D/5)
SCALE: NTS



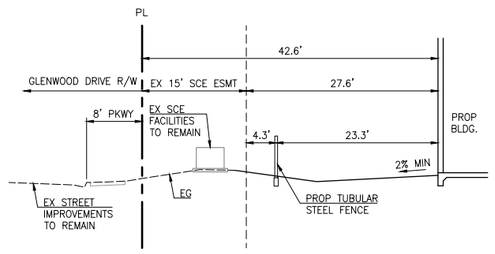
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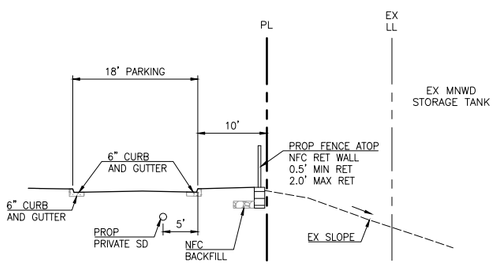
SECTION (F/5)
SCALE: NTS



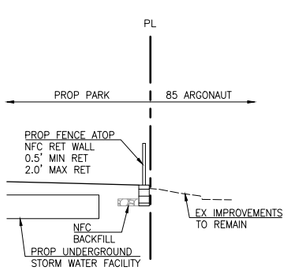
SECTION (G/5)
SCALE: NTS



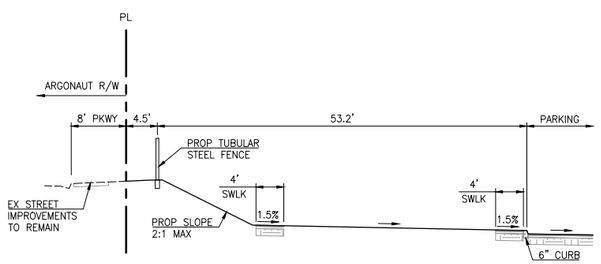
SECTION (H/5)
SCALE: NTS



SECTION (I/5)
SCALE: NTS



SECTION (J/5)
SCALE: NTS



SECTION (K/5)
SCALE: NTS

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:

X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER ERIC LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

SCALE:	AS SHOWN
DESIGNED BY:	DA, RR
DRAWN BY:	DA
CHECKED BY:	EL

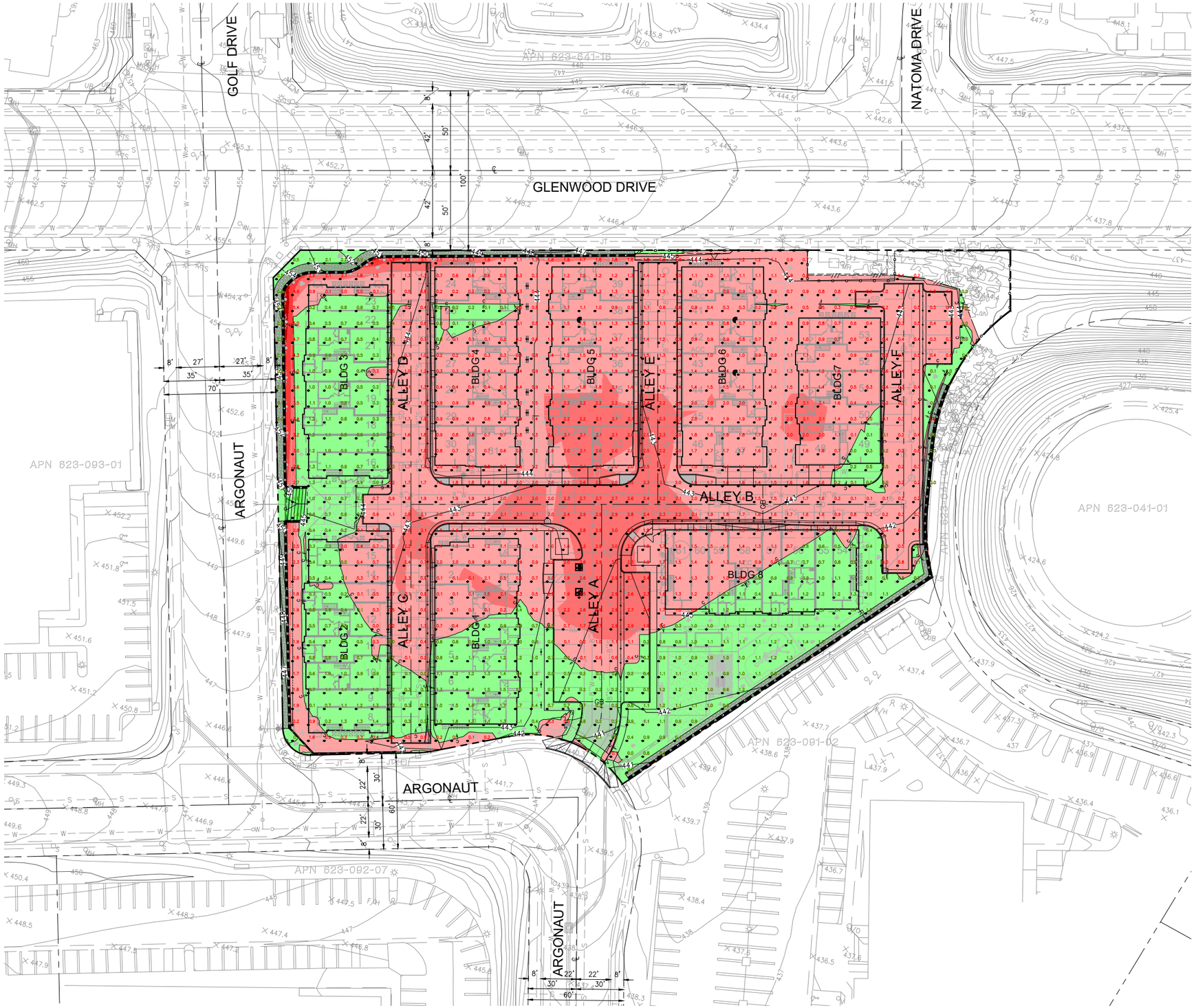
SECTIONS
TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

SHEET C-5 OF 8

2635

D:\Projects\Entitlement\TTM\117-010-18\Mxd\dwg Plotted At: June 24, 2025 9:37 AM Last Saved By: christian.nobis Last Saved At: April 3, 2025 4:01 PM

Docusign Envelope ID: 34282B03-3838-4F4E-8741-26B0D8D84B0E



Elevations Table			
Number	Color	Minimum Elevation	Maximum Elevation
1		−8.00	−6.00
2		−6.00	−4.00
3		−4.00	−2.00
4		−2.00	0.00
5		0.00	2.00
6		2.00	4.00
7		4.00	6.00

EARTHWORK QUANTITIES

	CUT (CY)	FILL (CY)
RAW VALUES:	5,000	1,100
OVEREXCAVATION:	9,100	9,100
SHRINKAGE (5%):		700
SUBSIDENCE (0.10):		400
TOTALS:	14,100	11,300

NET: 2,800 CY EXPORT

NOTE: THESE VALUES TO NOT INCLUDE UTILITY TRENCH OR FOOTING SPOILS.

N

30' 0' 15' 30'

SCALE: 1" = 30'

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:

X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER
ERIC LISSNER
NO. 84264
CIVIL
STATE OF CALIFORNIA

SCALE:	AS SHOWN
DESIGNED BY:	DA, RR
DRAWN BY:	DA
CHECKED BY:	EL

EARTHWORK

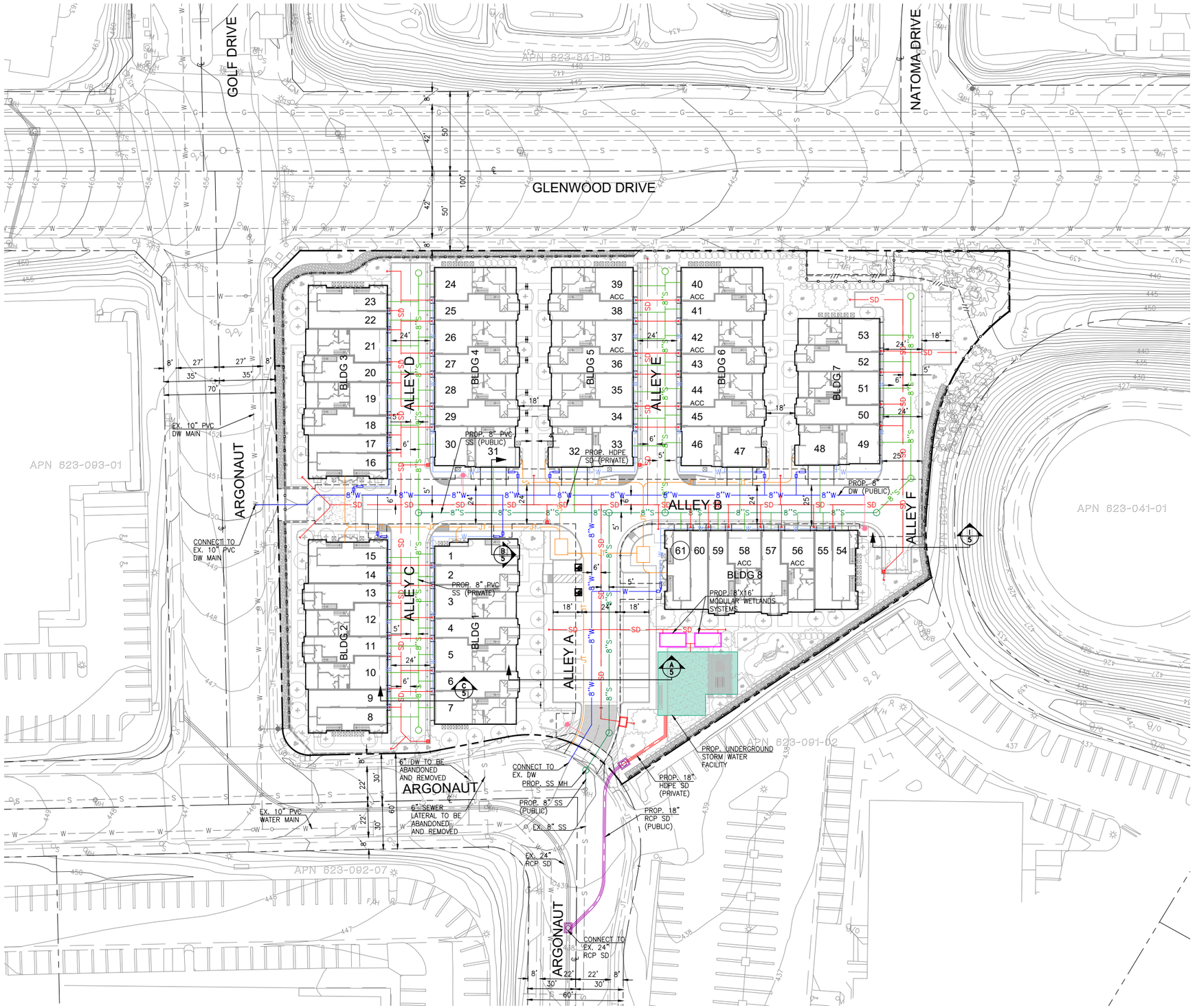
TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

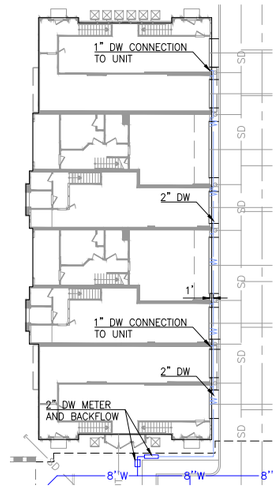
SHEET C-6 OF 8

2636

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Docusign Envelope ID: 34282B03-3838-4F4E-8741-26B0D8D84B0E





TYPICAL PRIVATE WATER SERVICE DETAIL

LEGEND

- PROPERTY BOUNDARY
- STREET CENTER LINE
- EXISTING DOMESTIC WATER
- EXISTING SEWER
- EXISTING STORM DRAIN
- PROPOSED PUBLIC DOMESTIC WATER
- PROPOSED PRIVATE DOMESTIC WATER SERVICE
- PROPOSED PRIVATE SEWER
- PROPOSED PUBLIC SEWER
- PROPOSED PRIVATE STORM DRAIN
- PROPOSED PUBLIC RCP STORM DRAIN
- PROPOSED JOINT TRENCH
- PROPOSED MODULAR WETLANDS SYSTEM
- PROPOSED DW METER AND BACKFLOW
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED TRANSFORMER
- PROPOSED UNDERGROUND STORM WATER FACILITY

30' 0' 15' 30'
SCALE: 1" = 30'

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:
X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
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REGISTERED PROFESSIONAL ENGINEER ERIC LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

SCALE:	AS SHOWN
DESIGNED BY:	DA, RR
DRAWN BY:	DA
CHECKED BY:	EL

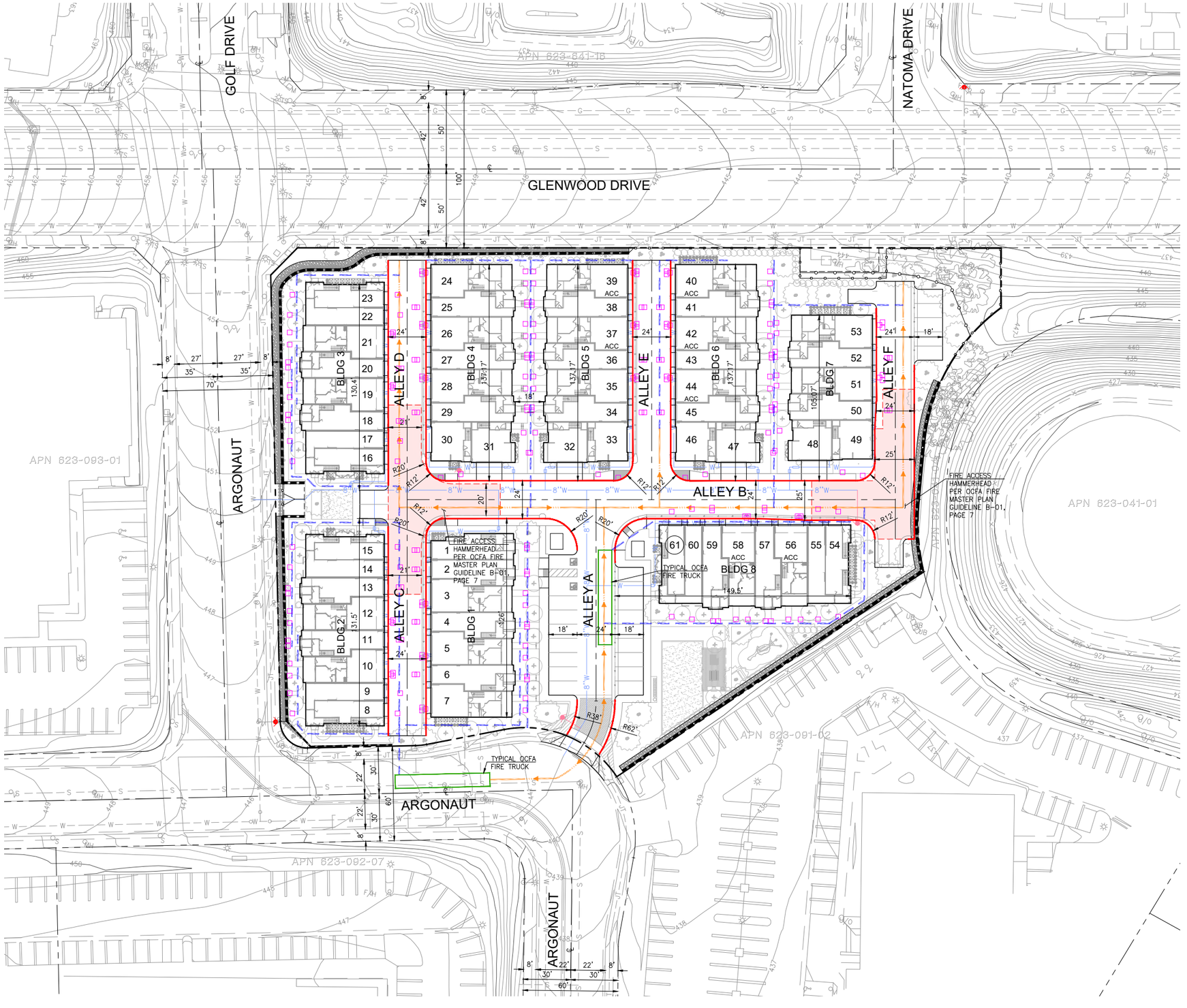
CONCEPTUAL UTILITY PLAN
TENTATIVE TRACT MAP 19340
FOR CONDOMINIUM PURPOSES
CITY OF ALISO VIEJO, CALIFORNIA

SHEET C-7 OF 8

2637

(2010)\Plans\Entitlement\TTM\117-010-tm06xd.dwg Plotted At: June 24, 2025 9:38 AM Last Saved By: christianrosas Last Saved At: June 24, 2025 9:36 AM

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LEGEND

- RIGHT OF WAY
- STREET CENTERLINE
- PROPERTY BOUNDARY
- PROPOSED DOMESTIC WATER
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- CURBS AND AREAS DESIGNATED TO BE NO PARKING
- HOSE PULL LINE (150' MAX FROM FIRE LANE)
- HOSE LAY LINE
- LADDER PAD PER OCFA GUIDELINES
- TYPICAL OCFA FIRE TRUCK (60' × 8.5')

NOTES:

1. PROPOSED TOWNHOUSE CONSTRUCTION PER 2022 CALIFORNIA RESIDENTIAL CODE SECTION 302.2
2. PROPOSED SPRINKLER SYSTEMS: NFPA 13D & 13R
3. LADDER PAD LOCATIONS ARE SHOWN CONCEPTUALLY AND WILL BE FINALIZED DURING FINAL ENGINEERING

30' 0' 15' 30'
SCALE: 1" = 30'

4TH SUBMITTAL - PREPARED 06/24/2025

PREPARED BY:
X ENGINEERING & CONSULTING, INC.
6 Hutton Centre Drive, Suite 650
Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER ERIC LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

SCALE: AS SHOWN	FIRE ACCESS SITE PLAN
DESIGNED BY: DA, RR	TENTATIVE TRACT MAP 19340
DRAWN BY: DA	FOR CONDOMINIUM PURPOSES
CHECKED BY: EL	CITY OF ALISO VIEJO, CALIFORNIA
	SHEET C-8 OF 8

2638

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LEGEND

1. Project Entry with Enhanced Paving
2. Monument Signage with Specimen Tree and Flowering Shrub/Groundcover
3. Concrete Sidewalk
4. Parking Area
5. Park / Open Space (Refer to L-2)
   - Lawn
   - BBQ Grill
   - Overhead Shade Structure
   - Picnic Table and Chairs
   - Tot Lot
6. Accent Tree
7. Hedge Planting to Screen Utilities, AC Units, and Retaining Wall
8. Vine Planting to Screen Retaining Wall
9. Evergreen Shrub at Garage Planting Pocket
10. Mailbox Cluster
11. Transformer
12. Retaining Wall with Guardrail (Refer to L-3 and L-4)
13. Perimeter Fence (Refer to L-3 and L-4)
14. Existing Easement
15. Existing Tree to Remain with New Groundcover
16. Property Line
17. Sight Triangle*

Note:
* Planting within sight triangle shall be maintained under 30" in height.

Residential Common Open Area (Refer to L-8)
Common Open Area Provided: 40,185.1 sqft (32.6%)

Minimum Parking Lot Landscaping
Parking Space On-site: (26) Stalls total
Parking Space with 10 or more Stalls:
Parking Lot at Entry: 3,062 sqft, (18) Stalls.
Parking Lot Landscaping Area: 1,116 sqft (36.5%)

MLC Holdings, Inc.

ARGONAUT - CONCEPTUAL LANDSCAPE SITE PLAN

ALISO VIEJO, CA

0 10' 20' 40'
Scale: 1" = 20'-0"

07.16.25

Collabora 2639



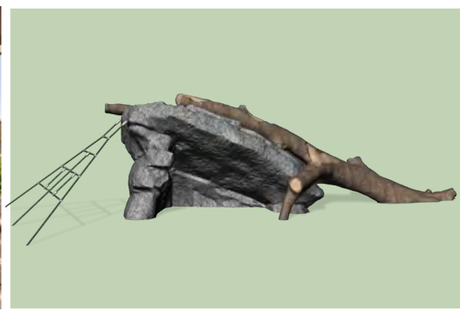
LEGEND

1. Lawn
2. Mailbox Cluster
3. Concrete Walk
4. BBQ Counter (3'ht.)
5. Overhead Shade Structure (12'ht. Max.)
6. Picnic Table
7. Bench
8. Play Equipment (5'ht.) with Play Safety Surface
9. Trash Receptacle
10. Retaining Wall with Guardrail (42"ht. Total)
11. Accent Tree
12. Modular Wetland System per Civil Engineer









KEYMAP



MLC Holdings, Inc.

ARGONAUT - CONCEPTUAL OPEN SPACE ENLARGEMENT PLAN

ALISO VIEJO, CA

0 5' 10' 20'
Scale: 1" = 10'-0"

07.16.25 L-2

Collabora 2640



LEGEND

- Retaining Wall with Guardrail (Refer to Civil's Plan)
- Perimeter Fence
- Monument Signage Wall

MLC Holdings, Inc.

ARGONAUT - CONCEPTUAL WALL AND FENCE PLAN

ALISO VIEJO, CA

0 10' 20' 40'

Scale: 1" = 20'-0"

07.16.25

L-3

Collabora 2641

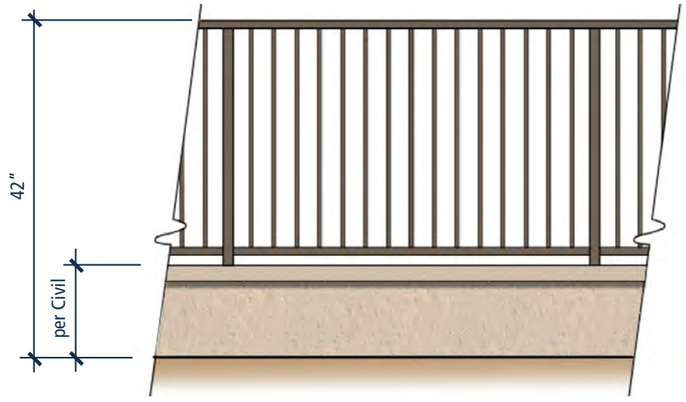
WALL AND FENCE DETAILS





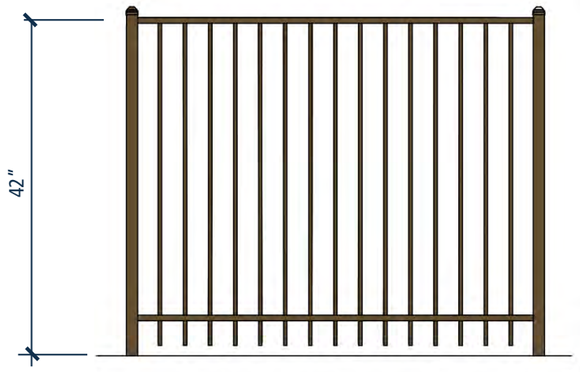
- Burnished CMU in stack bond pattern
- Precast concrete cap
- Color to match architecture
- Wood plank and stainless steel channel letter

Monument Signage Wall



- Stucco finish with precast concrete cap
- Color to match architecture

Retaining Wall with Guardrail



- Tubular steel
- Paint Color: SW7048 Urbane Bronze or equal

Perimeter Fence

SITE AMENITIES



Maglin - Iconic Tables (Or Equal)

Picnic Table and Benches



Maglin - Iconic Backed/Backless Benches (Or Equal)

Bench



Maglin - 250 Trash Container (Or Equal)

Trash Receptacle



BBQGUYS
Electri-Chef Rubby Built-In (Or Equal)

BBQ Grill



MailboxUSA

Mailbox



LEGEND

- Low Water Use
- Medium Water Use
- High Water Use

Project Name: MH107- Aliso Viejo - Argonaut
Date: June 23, 2025

WATER EFFICIENT WORK SHEET

Maximum Applied Water Allowance (MAWA)
Total MAWA = (Eto x 0.50 x LA in Sq.ft. x 0.62)+(Eto x 1.0 x SLA in Sq.ft. x 0.62)= Gallons per year for LA + SLA

Hydrozone:	Eto:	KL	LA Sq. Ft.	Conversion	SLA Sq. Ft.	MAWA
Landscaped Area	49.6	0.55	31,244	0.62	NA	528,449

MAWA= Maximum Applied Water Allowance (gallons per year)
Eto= Reference Evapotranspiration from Appendix C (inches per year)
0.50= Evapotranspiration Adjustment Factor (ETAF)
1.0= ETAF for Special Landscaped Area
LA= Landscaped Area includes Special Landscape Area (square feet)
0.62= Conversion Factor (to gallons per square foot)
0.3= the additional ET adjustment Factor for Special Landscape Area (1.0- 0.7= 0.3)
SLA= Special Landscape Area (square feet)

Applicant to fill in boxes below:

Eto (Reference Evapotranspiration from Appendix C inches per year)	49.6
Landscaped Area includes Special Landscape Area (square feet)	31,244
Spsical Landscape Area (square feet)	0

Estimated Annual Water Use
Total EAWU = (Eto x KL x LA in Sq.ft. / IE)= Gallons per Year

Hydrozone:	Eto:	KL	Sq. Ft.	Conversion	IE	EAWU
Low Water Use	49.6	0.2	20,084	0.62	0.81	**152,500**
Medium Water Use S	49.6	0.5	9,534	0.62	0.81	**180,981**
High Water Use	49.6	0.8	1,626	0.62	0.73	**54,798**
Total EAWU:			31,244			**388,278**

EAWU= Estimated Applied Water Use (gallons per year)
Eto= Reference Evapotranspiration from Appendix C (inches per year)
KL= Landscape Coefficient
LA= Landscaped Area (square feet)
0.62= Conversion Factor (to gallons per square foot)
IE= Irrigation Efficiency= IME X DU (See definication in Appendix E for exmapline IE percentages)
IME= Irrigation Management Efficiency (90%)
DU= Distribution Uniformity of Irrigation Head
KL= KL x Kc x Kmc
Ks= species factor (range 1.0- 0.9) (see WUCOLS list for values)
Kd= density factor (range 0.5- 1.3) (see WUCOLS list for density value)
Kmc= microclimatic factor (range 0.5- 1.4) (see WUCOLS)

Table A- PF (Plant Factor)
Cool Season Turf= 0.8
Warm Season Turf= 0.7
High Water Use Plants= 0.7 (can be between 0.7-0.9)
Moderate Water Use Plants= 0.5 (can be between 0.4-0.6)
Low Water Use Plants= 0.2 (can be between 0.1-0.3)
Very Low Water Use Plants= 0.1

IE (Irrigation Efficiency)- Appendix E
Pop-up Stream Rotor= 0.73
Rotor Heads= 0.76
Microsprays= 0.76
Bubblers= 0.77
Drip Emitters= 0.81
Subsurface Irrigation= 0.81

Irrigation Note:

1. All planting areas shall have a fully automatic irrigation system. Utilization water conserving features such as low-precipitation rate heads; low-flow micro sprays or drip irrigation, water sensors and multi-program controllers with weather station capability and drip circuit features. "Water Efficient Landscapes" irrigation system, scheduling and water use WELO calculations shall be designed to meet the requirements of the specifications of the City of Aliso Viejo.

2. All utility infrastructure and other potential conflicts including off site and below-grade that could affect irrigation design considered.

TREE SCHEDULE:

BOTANICAL NAME	COMMON NAME	SIZE	FORM
Agonis flexuosa	Australian Myrtle	24" box min.	STD
Albizia julibrissin	Silk Tree	24" box min.	STD
Arbutus 'Marina'	N.C.N.	24" box min.	STD
Cassia leptophylla	Gold Medallion Tree	24" box min.	STD
Chitalpa tashkentensis	Chitalpa	24" box min.	STD
Geijera parvifolia	Australian Willow	24" box min.	STD
Koelreuteria bipinnatta	Chinese Flame Tree	24" box min.	STD
Laurus nobilis	Sweet Bay	24" box min.	STD
Olea europae 'Wilsonii'	Fruitless Olive	24" box min.	STD
Pinus eldarica	Afghan Pine	24" box min.	STD
Pinus halepensis	Aleppo Pine	24" box min.	STD
Pinus spp	Pine	24" box min.	STD
Platanus acerifolia 'Columbia'	London Plane Tree	24" box min.	STD
Prosopis chilensis 'Phoenix'	Chilean Mesquite	24" box min.	STD
Quercus agrifolia	Coast Live Oak	24" box min.	STD
Quercus engelmannii	Engelmann Oak	24" box min.	STD
Quercus ilex	Holly Oak	24" box min.	STD
Quercus virginiana	Southern Live Oak	24" box min.	STD

GROUNDCOVER SCHEDULE:

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Acacia redolens 'Low Boy'	Prostrate Acacia	1 gal	24"o.c.
Baccharis pilularis	Coyote Bush	1 gal	24"o.c.
Ceanothus griseus horizontalis	Carmel Creeper	1 gal	18"o.c.
Cerastium tomentosum	Snow in summer	1 gal	24"o.c.
Cotoneaster parneyi	Red Clusterberry	1 gal	24"o.c.
Cotoneaster dammeri 'Lowfast'	Lowfast Clusterberry	1 gal	24"o.c.
Lantana Camara	Lantana	1 gal	18"o.c.
Lantana montevidensis	Creeping Lantana	1 gal	24"o.c.
Myoporum parvifolium	Creeping Myoporum	1 gal	24"o.c.
Rosmarinus officinalis 'Prostratus'	Creeping Rosemary	1 gal	24"o.c.
Senecio mandraliscae	Blue Chalk Sticks	1 gal	18"o.c.

VINE SCHEDULE:

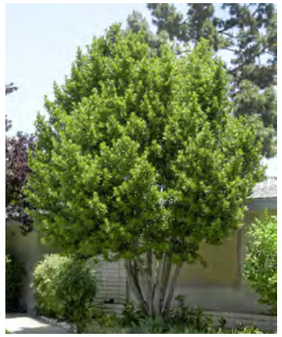
BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Bougainvillea 'Barbara Karst'	Bougainvillea	15 gal	10'o.c.
Macfadyena unguis-cati	Yellow Trumpet Vine	15 gal	10'o.c.

Note: All plants in this list are derive from City of Aliso Viejo's Landscape Plant Palette of low water plants.

SHRUB SCHEDULE:

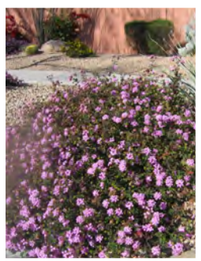
BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Aeonium arboreum 'Atropurpureum'	N.C.N.	5 gal	36" 0.c.
Agave attenuata 'Nerva'	Agave	15 gal	36" 0.c.
Aloe barbadensis	N.C.N.	5 gal	30" 0.c.
Aloe striata	Coral Aloe	5 gal	30" 0.c.
Arbutus unedo 'Compacta'	Dwarf Strawberry Tree	15 gal	48" 0.c.
Baccharis pilularis 'Pigeon Point'	Dwarf Coyote Brush	5 gal	36" 0.c.
Bambusa multiplex 'Alphonse Karr'	Bamboo	5 gal	30" 0.c.
Ceanothus 'Heart's Desire' Heart's	Desire Ceanothus	5 gal	36" 0.c.
Ceanothus spp.	Ceanothus	5 gal	36" 0.c.
Cotoneaster parneyi	Red Clusterberry	5 gal	36" 0.c.
Dietes dicoler	Fortnight Lily	5 gal	24" 0.c.
Dudleya caespitosa	Dudleya	5 gal	36" 0.c.
Echium fastuosum	Pride of Madeira	5 gal	36" 0.c.
Elaegnus pungens	Silverberry	15 gal	48" 0.c.
Encelia californica	California Encelia	5 gal	36" 0.c.
Feijoa sellowiana	Pineapple Guava	15 gal	48" 0.c.
Festuca mairei	Atlas Fescue	5 gal	30" 0.c.
Festuca ovina 'Glauca'	Blue Fescue	5 gal	30" 0.c.
Hesperaloe parviflora	Red Yucca	5 gal	36" 0.c.
Heteromeles arbutifolia	Toyon	15 gal	48" 0.c.
Lantana montevidensis ' Alba'	Lantana	5 gal	30" 0.c.
Lavandula angustifolia 'Mustead'	English Lavender	5 gal	30" 0.c.
Leptospermum scoparium	New Zealand Tea Tree	5 gal	36" 0.c.
Leucophyllum F.	White Cloud Texas Ranger	5 gal	36" 0.c.
Mimulus hybrids	Monkey Flower	5 gal	36" 0.c.
Muhlenbergia rigens	Deergrass	5 gal	30" 0.c.
Myrsine Africana	African Boxwood	5 gal	30" 0.c.
Opuntia littoralis	Prickly Pear	5 gal	48" 0.c.
Phormium tenax 'Jack Sprat'	Flax	5 gal	36" 0.c.
Photinia fraseri	Photinia	15 gal	36" 0.c.
Prunus ilicifolia	Hollyleaf Cherry	15 gal	48" 0.c.
Pyracantha spp.	Firethorn	5 gal	36" 0.c.
Rhamnis californica	Coffeeberry	5 gal	36" 0.c.
Rhaphiolepis indica Indian	Hawthorne	5 gal	36" 0.c.
Rhus integrifolia	Lemonade Berry	5 gal	36" 0.c.
Romneya coulteri	Matilija Poppy	5 gal	30" 0.c.
Rosa floribunda 'Iceberg'	Iceberg Rose	5 gal	30" 0.c.
Rosa 'Flower Carpet'	Flower Carpet Rose	5 gal	30" 0.c.
Rosmarinus officinalis	Rosemary	5 gal	36" 0.c.
Salvia leucantha	Mexican Blue Sage	5 gal	30" 0.c.
Salvia sonomensis 'Dara's Choice'	Creeping Sage	5 gal	30" 0.c.
Salvia spp.	Sage	5 gal	30" 0.c.
Senecio mandraliscae	German Ivy	5 gal	24" 0.c.















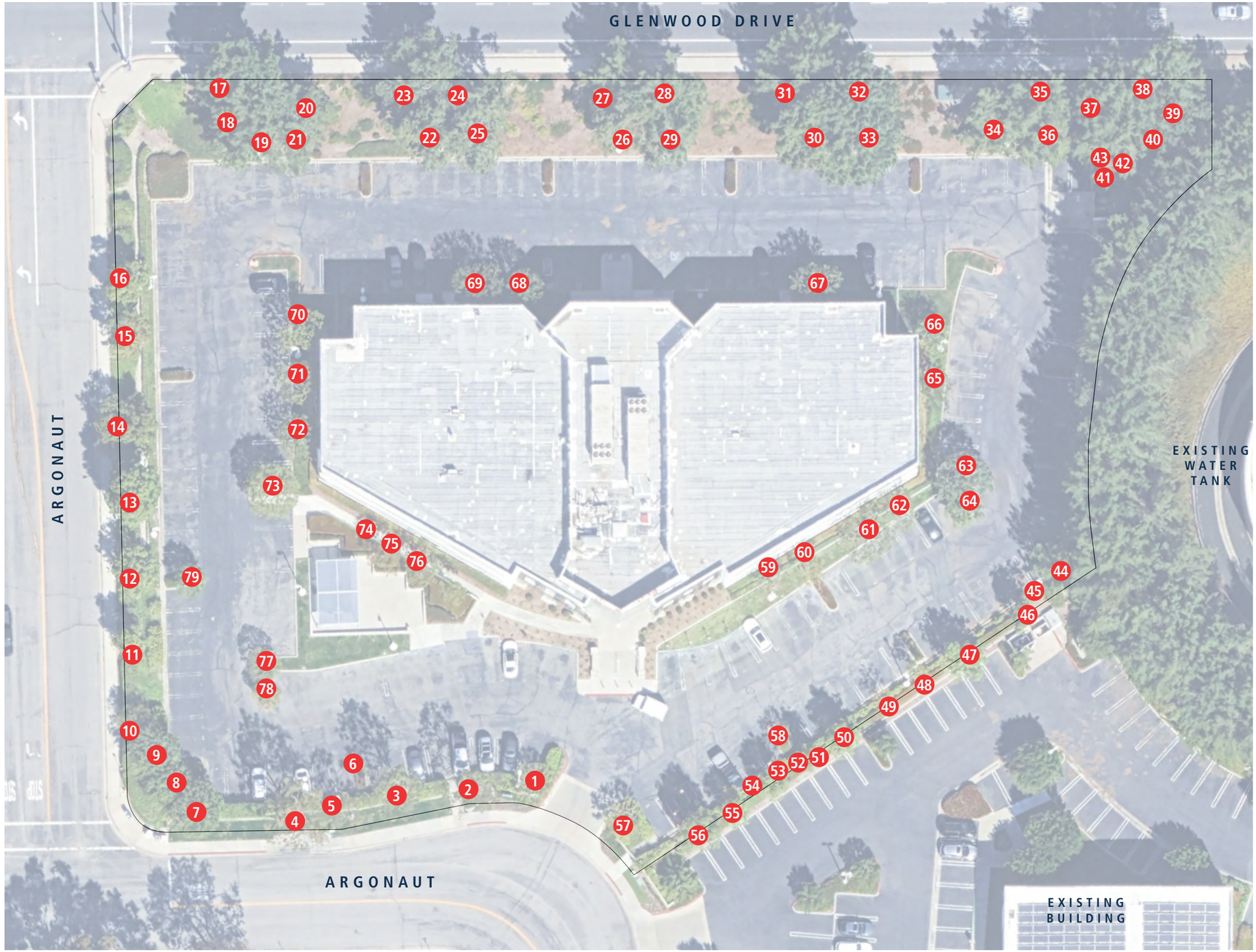












Project Name:		Argonaut, Aliso Viejo		
NO.	Botanical Name	Common Name	Size (DBH)	Remove/Keep
1	Ficus aurea	Florida Strangler Fig	6 trunks (5.5",8",13")	Remove
2	Eucalyptus leucoxylon	Yellow Gum	9"	Remove
3	Eucalyptus leucoxylon	Yellow Gum	7"	Remove
4	Eucalyptus leucoxylon	Yellow Gum	12.5"	Remove
5	Eucalyptus leucoxylon	Yellow Gum	12.5"	Remove
6	Ficus aurea	Florida Strangler Fig	6"	Remove
7	Ficus aurea	Florida Strangler Fig	4 trunks (8", 11", 13")	Remove
8	Ficus aurea	Florida Strangler Fig	6 trunks (7.5", 8", 12")	Remove
9	Ficus aurea	Florida Strangler Fig	7 trunks (6", 9",15")	Remove
10	Lophostemon confertus	Brisbane Box	6.5"	Remove
11	Lophostemon confertus	Brisbane Box	9.5"	Remove
12	Lophostemon confertus	Brisbane Box	8.5"	Remove
13	Lophostemon confertus	Brisbane Box	12"	Remove
14	Lophostemon confertus	Brisbane Box	13.5"	Remove
15	Lophostemon confertus	Brisbane Box	12"	Remove
16	Lophostemon confertus	Brisbane Box	9"	Remove
17	Pinus eldarica	Afghan Pine	16.5"	Remove
18	Pinus eldarica	Afghan Pine	17"	Remove
19	Pinus eldarica	Afghan Pine	12.5"	Remove
20	Pinus eldarica	Afghan Pine	13"	Remove
21	Pinus eldarica	Afghan Pine	14"	Remove
22	Pinus eldarica	Afghan Pine	15"	Remove
23	Pinus eldarica	Afghan Pine	15.5"	Remove
24	Pinus eldarica	Afghan Pine	17"	Remove
25	Pinus eldarica	Afghan Pine	14.5"	Remove
26	Pinus eldarica	Afghan Pine	12"	Remove
27	Pinus eldarica	Afghan Pine	14"	Remove
28	Pinus eldarica	Afghan Pine	17"	Remove
29	Pinus eldarica	Afghan Pine	19"	Remove
30	Pinus eldarica	Afghan Pine	17"	Remove
31	Pinus eldarica	Afghan Pine	17"	Remove
32	Pinus eldarica	Afghan Pine	16.5"	Remove
33	Pinus eldarica	Afghan Pine	18"	Remove
34	Pinus eldarica	Afghan Pine	15"	Remove
35	Pinus eldarica	Afghan Pine	14"	Remove
36	Pinus eldarica	Afghan Pine	12"	Remove
37	Pinus eldarica	Afghan Pine	18"	Remove
38	Pinus eldarica	Afghan Pine	15"	Keep
39	Pinus eldarica	Afghan Pine	14"	Keep
40	Pinus eldarica	Afghan Pine	15"	Remove
41	Pinus eldarica	Afghan Pine	5.6"	Remove
42	Pinus eldarica	Afghan Pine	4"	Remove
43	Pinus eldarica	Afghan Pine	1"	Remove
44	Lophostemon confertus	Brisbane Box	5"	Remove
45	Lophostemon confertus	Brisbane Box	5"	Remove
46	Lophostemon confertus	Brisbane Box	7"	Remove
47	Lophostemon confertus	Brisbane Box	9"	Remove
48	Lophostemon confertus	Brisbane Box	4.5"	Remove
49	Lophostemon confertus	Brisbane Box	4.5"	Remove
50	Lophostemon confertus	Brisbane Box	9"	Remove
51	Lophostemon confertus	Brisbane Box	7"	Remove
52	Lophostemon confertus	Brisbane Box	4"	Remove
53	Lophostemon confertus	Brisbane Box	8"	Remove
54	Lophostemon confertus	Brisbane Box	4.5"	Remove
55	Lophostemon confertus	Brisbane Box	6"	Remove
56	Lophostemon confertus	Brisbane Box	11"	Remove
57	Ficus aurea	Florida Strangler Fig	7 trunks (5", 9", 14")	Remove
58	Ficus aurea	Florida Strangler Fig	7.6"	Remove
59	Lophostemon confertus	Brisbane Box	7"	Remove
60	Lophostemon confertus	Brisbane Box	8"	Remove
61	Lophostemon confertus	Brisbane Box	13"	Remove
62	Lophostemon confertus	Brisbane Box	11"	Remove
63	Ficus aurea	Florida Strangler Fig	15"	Remove
64	Ficus aurea	Florida Strangler Fig	11"	Remove
65	Cupaniopsis anacardioides	Carrotwood	6"	Remove
66	Cupaniopsis anacardioides	Carrotwood	8"	Remove
67	Cupaniopsis anacardioides	Carrotwood	11.5"	Remove
68	Cupaniopsis anacardioides	Carrotwood	9"	Remove
69	Cupaniopsis anacardioides	Carrotwood	11"	Remove
70	Cupaniopsis anacardioides	Carrotwood	8"	Remove
71	Cupaniopsis anacardioides	Carrotwood	10"	Remove
72	Cupaniopsis anacardioides	Carrotwood	11"	Remove
73	Ficus aurea	Florida Strangler Fig	13"	Remove
74	Lophostemon confertus	Brisbane Box	8"	Remove
75	Lophostemon confertus	Brisbane Box	9"	Remove
76	Lophostemon confertus	Brisbane Box	6"	Remove
77	Ficus aurea	Florida Strangler Fig	9"	Remove
78	Ficus aurea	Florida Strangler Fig	8"	Remove
79	Ficus aurea	Florida Strangler Fig	9"	Remove



LEGEND

Usable Open Space:
5,587.4 SQFT

Other Open Space:
34,597.7 SQFT

Common Open Space Total:
40,185.1 SQFT

Site Area:
123,275 SQFT

Proposed Common Open Space Percentage:
32.6%

MLC Holdings, Inc.

ARGONAUT - CONCEPTUAL COMMON OPEN SPACE CALCULATION

ALISO VIEJO, CA

0 10' 20' 40'
Scale: 1" = 20'-0"

07.16.25

Collabora 2646

ARGONAUT - CONCEPTUAL PLAN

SUMMARIES AND SCHEDULES

Meritage Homes | VCL Visual Concepts Lighting 2647

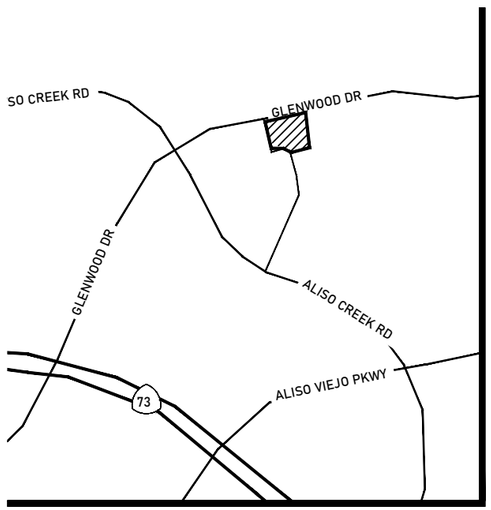
Luminaire Schedule								
Symbol	Qty	Manufacturer	Order Number	Description	Color Temperature	Luminaire Lumens	Luminaire Watts	Total Watts
	07	NLS LIGHTING	FIXTURE: TRC-2-T2-16L-7-30K7-UNV-SGL-BLK-18 POLE:TRAC POLE	P1-STREET LIGHT TYPE 2 @18' MH	3000K	4385	36	252
	01	NLS LIGHTING	FIXTURE: TRC-1-T2-16L-40-30K7-UNV-SGL-BLK-HSS-12 POLE:TRAC POLE	P2-PEDESTRIAN LIGHT TYPE 2 HSS @12'MH	3000K	1775	18	18
	05	NLS LIGHTING	FIXTURE: TBL-42-T2-16L-175-30K7-UNV-AB-BLK	B1-BOLLARD LIGHT TYPE 2 @3.5'MH	3000K	774	10	50
	06	ECOSENSE	FIXTURE: F080-1S-MO-30-8-70-K-X-C CANOPY PLATE: RISE-CANOPY-04-Z	D1- DOWN LIGHT	3000K	584	7.5	45
	60	PORCH LIGHT	TO BE SPECIFIED BY ARCHITECT	TBD	TBD	TBD	TBD	TBD
	67	GARAGE LIGHT	TO BE SPECIFIED BY ARCHITECT	TBD	TBD	TBD	TBD	TBD

SHEET INDEX

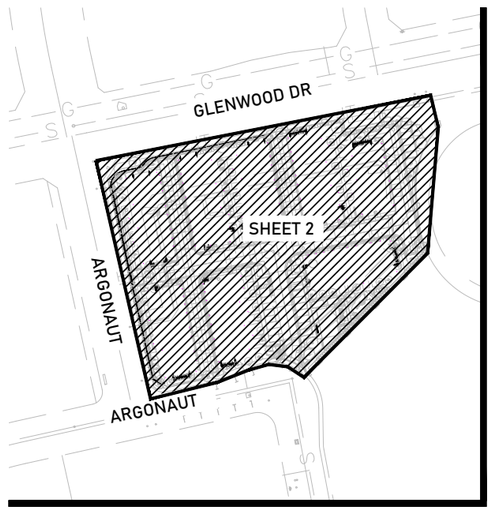
1 SUMMARIES & SCHEDULES
2 LIGHTING PLAN 1
3 SPECIFICATION: STREET LIGHT
4 SPECIFICATION: PEDESTRIAN LIGHT
5 SPECIFICATION: BOLLARD LIGHT
6 SPECIFICATION: DOWN LIGHT

SITE LOCATION

ALISO VIEJO, CALIFORNIA



SITE MAP



PROPOSED LIGHTING

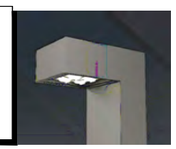
MAKE: NLS- STREET LIGHT
MODEL: TRC-2-STREET LIGHT
QTY: 7
WATTAGE: 36
SPEC: 03



MAKE: NLS- STREET LIGHT
MODEL: TRC-1-PEDESTRIAN LIGHT
QTY: 01
WATTAGE: 18
SPEC: 04



MAKE: NLS LIGHTING
MODEL: TBL-BOLLARD LIGHT
QTY: 05
WATTAGE: 10
SPEC: 05



MAKE: ECOSENSE LIGHTING
MODEL: RISE-DOWN LIGHT
QTY: 6
WATTAGE: 7.5
SPEC: 06

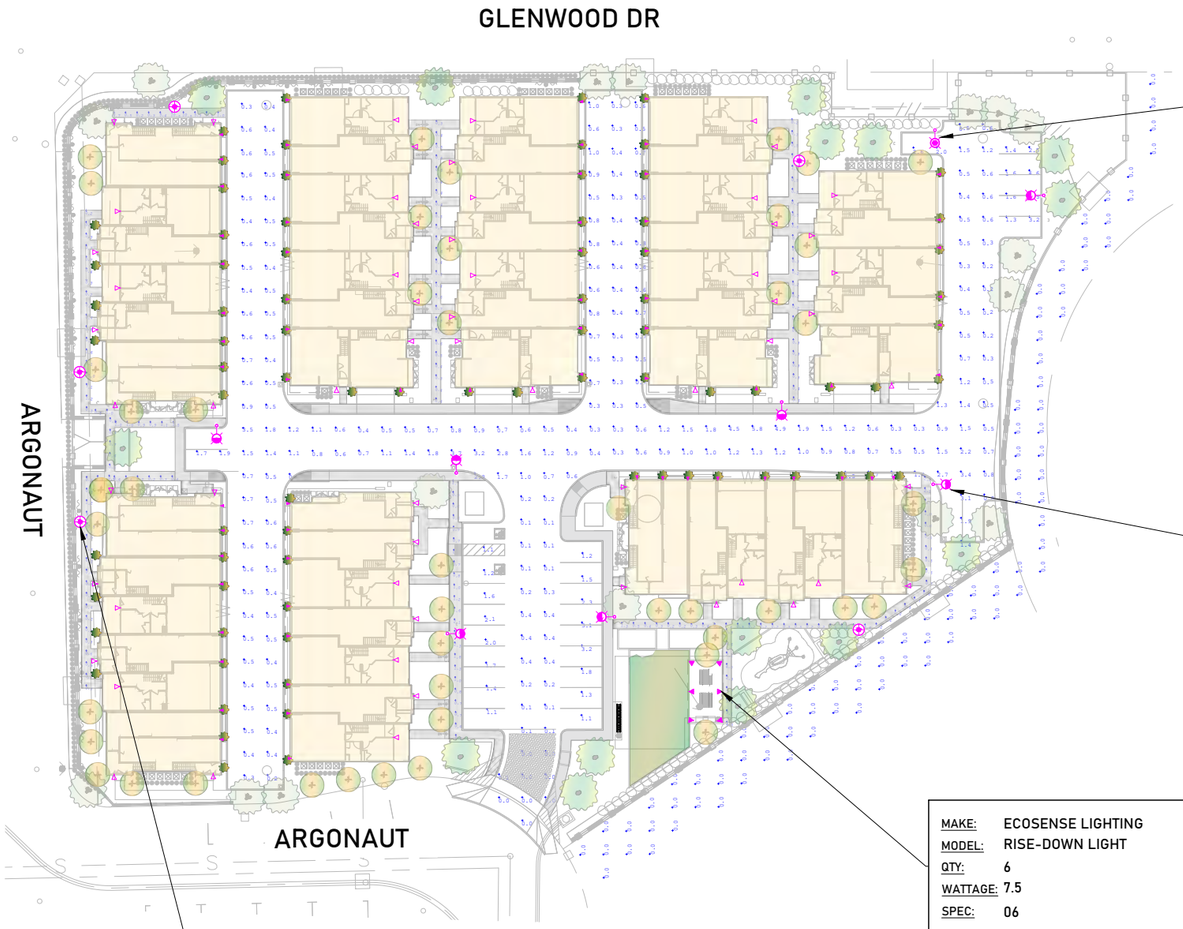


ARGONAUT - CONCEPTUAL PLAN

LIGHTING PLAN

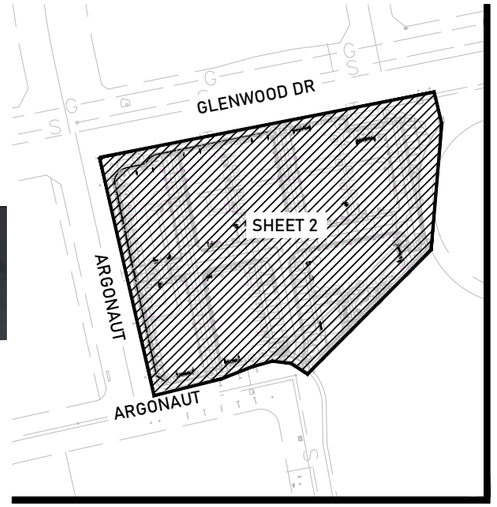
Meritage Homes

VCL 2648
Visual Concepts Lighting



MAKE: NLS- STREET LIGHT
MODEL: TRC-1-PEDESTRIAN LIGHT
QTY: 01
WATTAGE: 18
SPEC: 04





KEY MAP

N.T.S.

NORTH

MAKE: NLS- STREET LIGHT
MODEL: TRC-2-STREET LIGHT
QTY: 7
WATTAGE: 36
SPEC: 03



MAKE: ECOSENSE LIGHTING
MODEL: RISE-DOWN LIGHT
QTY: 6
WATTAGE: 7.5
SPEC: 06



MAKE: NLS LIGHTING
MODEL: TBL-BOLLARD LIGHT
QTY: 05
WATTAGE: 10
SPEC: 05



NOTE:

ANY CHANGE OR DEVIATION FROM THE LIGHTING SPECIFICATIONS ON PLAN SHALL INVALIDATE THIS PHOTOMETRIC ANALYSIS.

0' 15' 30' 60'
SCALE: 1"=30'-0"

NORTH

JUNE 25, 2025

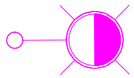
ARGONAUT - CONCEPTUAL PLAN

SPECIFICATION: STREET LIGHT

Meritage Homes

VCL 2649 Visual Concepts Lighting

MAKE: NLS- STREET LIGHT
MODEL: TRC-2-STREET LIGHT
QTY: 7
WATTAGE: 36
SPEC: 03



Project Name: | Type:

TRC-2 ORDERING GUIDE

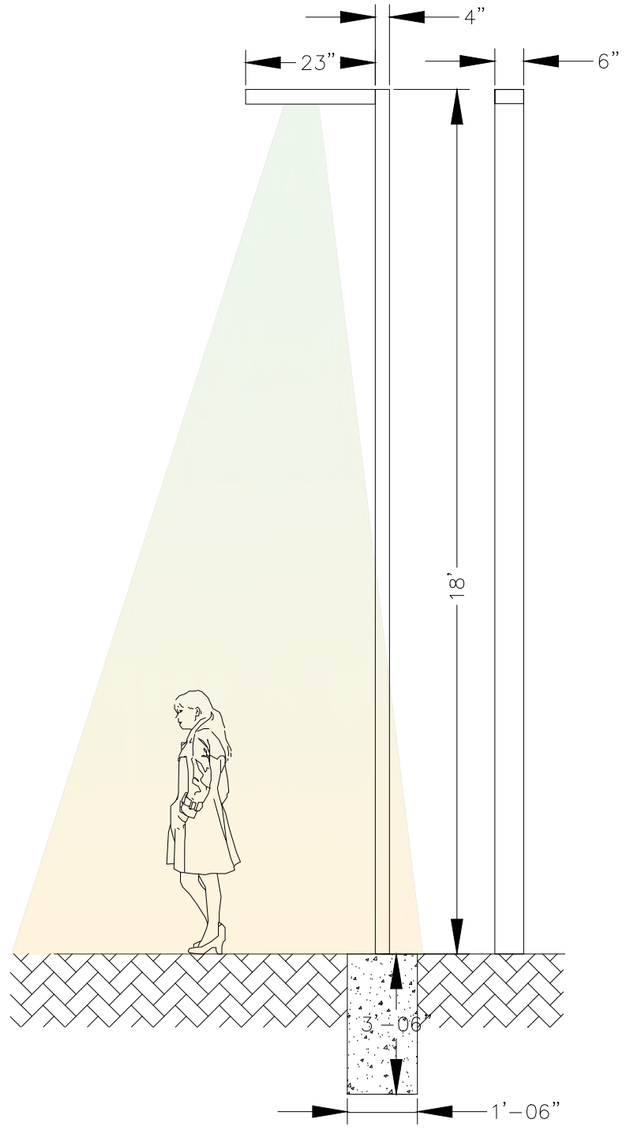
Cat#	Light Dist.	# of LEDs	Milliamps	Kelvin	Volts
trc-2		16L	7	30k7	unv
Trac 2 (TRC-2)	Type 2 (T2)	16 (16L)	700 (7)	Amber 585-600nM (AMBER) [1,3,5,10]	120-277 (UNV)
	Type 3 (T3)	32 (32L)	1050 (1)	2700K, 70 CRI (27K7) [3]	347-480 (HV)
	Type 4 (T4)			2700K, 80 CRI (27K8) [1,3]	
	Type 5 (T5)			3000K, 70 CRI (30K7) [3]	
				3000K, 80 CRI (30K8) [1,3]	
				3500K, 80 CRI (35K8)	
				4000K, 70 CRI (40K7)	
				4000K, 80 CRI (40K8) [1]	
				5000K, 70 CRI (50K7)	
				5000K, 80 CRI (50K8) [1]	

Config.	Color	Controls Options	Options	Pole Height
sgl	blk			10
Single (SGL)	Bronze Textured (BRZ)	Nema 7-Pin Receptacle (P07) [4]	Marine Grade Finish (MGF)	10' (10)
Double (D-180)	White Textured (WHT)	Button Photocell (PC) [4]	House Side Shield (HSS)	12' (12)
MPF Triple (TRI) [2]	Smooth White Gloss (SWT)	FSP-211 with Motion Sensor/Photocell 9-20' Heights (FSP211-20) [4,11]	Rotated Optic Left (ROL)	14' (14)
MPF Quad (QDO) [2]	Silver Metallic (SVR)	21-40' Heights (FSP211-40) [4,11]	Rotated Optic Right (ROR)	16' (16)
MPF (MPFY) [2]	Black Textured (BLK)	FSP-221 with Motion Sensor/Photocell 9-20' Heights (FSP221-20) [11]	Buy American Act (BAA) [6]	No Pole (NO)
Wall Mount (WM)	Smooth Black Gloss (SBK)	21-40' Heights (FSP221-40) [11]	Trade Agreement Act (TAA) [6]	Aluminum Pole .250 Wall Comes With 12" Anchor Base 1" Thick, 1" Anchor Bolts
	Graphite Textured (GPH)	Custom Controls Integration (CCI) [4]	Build America Buy American (BABA) [6]	
	Grey Textured (GRY)	No Options (NO)	No Options (NO)	
	Green Textured (GRN)			
	Hunter Green Textured (HGN)			
	Custom (CS)			

NOTES:
1. Consult Factory For Lead Time. Consult Factory For 90 CRI Requests.
2. MPF Mid Pole Fixture. Consult Factory
3. Only Available When Ordering NLS Pole
4. Universal Voltage 120-277
5. 3000k or lower must be selected to meet International Dark-Sky Association certification.
6. Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, CasambI, Dali II, Avi-On, or other control systems)
7. Turtle Safe
8. Consult factory for all BAA/TAA/BABA requests
9. Consult Factory for Lead Time
10. Not Available above 700mA
11. FSP-211, 120V/277V, 230-240VAC (single phase), 50/60Hz
12. FSP-221, 100–347VAC (single phase) or 208/230/480VAC (phase-to-phase)







PRODUCT SPECIFICATIONS

TRAC 2 LUMEN CHART

TRAC LUMEN CHART

PART NUMBER	T2	LM/W	BUG	T3	LM/W	BUG	T4	LM/W	BUG	T5	LM/W	BUG	WATTS
TRC-1	4,440	123	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	36
TRC-1	4,440	123	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	4,728	131	B1-U0-G1	36
TRC-1	4,440	123	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	4,728	131	B1-U0-G1	36
TRC-2-16L-1-30K7	6,022	108	B1-U0-G1	6,056	108	B1-U0-G1	6,056	108	B1-U0-G1	6,174	110	B3-U0-G1	56
TRC-2-16L-1-40K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G1	6,482	116	B3-U0-G1	56
TRC-2-16L-1-50K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G2	6,482	116	B3-U0-G1	56
TRC-2	8,711	78	B1-U0-G1	8,811	79	B1-U0-G1	8,811	79	B1-U0-G1	8,930	80	B1-U0-G1	111
TRC-2	8,938	80	B1-U0-G1	8,811	79	B1-U0-G1	8,811	79	B1-U0-G1	8,930	80	B1-U0-G1	111
TRC-2	9,198	83	B1-U0-G1	9,198	83	B1-U0-G1	9,198	83	B1-U0-G1	9,333	84	B1-U0-G1	111
TRC-2-32L-1-30K7	11,797	111	B2-U0-G2	11,863	112	B2-U0-G2	11863	112	B2-U0-G2	12,094	114	B4-U0-G2	106
TRC-2-32L-1-40K7	12,387	117	B2-U0-G2	12,456	118	B2-U0-G2	12456	118	B2-U0-G2	12,698	120	B4-U0-G2	106
TRC-2-32L-1-50K7	12,387	117	B2-U0-G2	12,456	118	B2-U0-G2	12456	118	B2-U0-G2	12,698	120	B4-U0-G2	106

3000k or lower must be selected to meet International Dark-Sky Association certification.

TRAC 2 LUMEN CHART HSS

PART NUMBER	T2 HSS	LM/W	BUG	T3 HSS	LM/W	BUG	T4 HSS	LM/W	BUG	WATTS
TRC	4,440	123	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	36
TRC	4,440	123	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	36
TRC	4,440	123	B1-U0-G1	4,800	133	B1-U0-G1	4,800	133	B1-U0-G1	36
TRC-2-16L-1-30K7	4,433	79	B1-U0-G1	4,285	77	B0-U0-G1	4,145	74	B1-U0-G1	56
TRC-2-16L-1-40K7	4,654	83	B1-U0-G1	4,499	80	B1-U0-G1	4,353	78	B1-U0-G1	56
TRC-2-16L-1-50K7	4,654	83	B1-U0-G1	4,499	80	B1-U0-G1	4,353	78	B1-U0-G1	56
TRC	8,938	80	B1-U0-G1	8,811	79	B1-U0-G1	8,930	80	B1-U0-G1	111
TRC	8,777	79	B1-U0-G1	8,811	79	B1-U0-G1	8,930	80	B1-U0-G1	111
TRC	8,777	79	B1-U0-G1	8,811	79	B1-U0-G1	8,930	80	B1-U0-G1	111
TRC-2-32L-1-30K7	8,683	82	B1-U0-G2	8,394	79	B1-U0-G2	8,120	77	B1-U0-G2	106
TRC-2-32L-1-40K7	9,117	86	B1-U0-G2	8,813	83	B1-U0-G2	8,526	80	B1-U0-G2	106
TRC-2-32L-1-50K7	9,117	86	B1-U0-G2	8,813	83	B1-U0-G2	8,526	80	B1-U0-G2	106

Lumen Maintenance Data

Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,00 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%

*Reported extrapolations per IESNA TM-21 **Projected extrapolations per IESNA TM-21

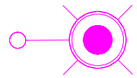
POLE EPA DATA

Catalog Number	Style	Wall Thick (in)	Shaft Area (sq ft)	Base Plate (in)	Anchor Bolt Circle (in)	Bolts	BC Adj	Drilling Pattern	BC Adj	Drilling Pattern	SS Adj	Drilling Pattern	Max Adj	SS Drilling Pattern	SQ Adj	Drilling Pattern	TD Adj	Drilling Pattern	Max Adj	Drilling Pattern	SQ Adj	Drilling Pattern	TD Adj	Drilling Pattern	Max Adj	Drilling Pattern	SQ Adj	Drilling Pattern	TD Adj	Drilling Pattern	Max Adj	Drilling Pattern
TRAC-10-SSS-10B-10L	10	8.000	4ft	17 sq	14	4	1.267	20.5	18	22.5	20	20.5	20	20.5	18	20.5	20	20.5	20	20.5	1.15	23.5	1.13	23.5	20.5	20	1.1	24	1.08	24	20	20.5
TRAC-12-SSS-10B-10L	12	8.000	4ft	17 sq	14	4	1.267	20.5	18	22.5	20	20.5	20	20.5	18	20.5	20	20.5	20	20.5	1.15	23.5	1.13	23.5	20.5	20	1.1	24	1.08	24	20	20.5
TRAC-14-SSS-10B-10L	14	8.000	4ft	17 sq	14	4	1.267	20.5	18	22.5	20	20.5	20	20.5	18	20.5	20	20.5	20	20.5	1.15	23.5	1.13	23.5	20.5	20	1.1	24	1.08	24	20	20.5
TRAC-16-SSS-10B-10L	16	8.000	4ft	17 sq	14	4	1.267	20.5	18	22.5	20	20.5	20	20.5	18	20.5	20	20.5	20	20.5	1.15	23.5	1.13	23.5	20.5	20	1.1	24	1.08	24	20	20.5

ARGONAUT - CONCEPTUAL PLAN

SPECIFICATION: PEDESTRIAN LIGHT

MAKE: NLS- STREET LIGHT
MODEL: TRC-1-PEDESTRIAN LIGHT
QTY: 01
WATTAGE: 18
SPEC: 04



Project Name: | Type:

TRC-1 ORDERING GUIDE

Cat#	Light Dist.	# of LEDs	Milliamps	Kelvin	Volts
TRC-1	T2	16L	40	30K7	UNV
Trac 1 (TRC-1)	Type 2 (T2) Type 3 (T3) Type 4 (T4) Type 5 (T5)	16 (16L)	400 (40) 530 (53) 700 (7) 1000 (1)	Amber 585-600nM (AMBER) [4,5,6,10] 2700K, 70 CRI (27K7) [4] 2700K, 80 CRI (27K8) [4,5] 3000K, 70 CRI (30K7) [4] 3000K, 80 CRI (30K8) [4,5] 3500K, 80 CRI (35K8) 4000K, 70 CRI (40K7) 4000K, 80 CRI (40K8) [4] 5000K, 70 CRI (50K7) 5000K, 80 CRI (50K8) [4]	120-277 (UNV) 347-480 (HV)

Config.	Color	Controls Options	Options	Pole Height
SGL	BLK			12
Single (SGL) Double (D-180) MPF Triple (TRI) [2] MPF Quad (QDS) [2] MPF (MPF) [2]	Bronze Textured (BRZ) White Textured (WHT) Smooth White Gloss (SWT) Silver Metallic (SVR) Black Textured (BLK) Smooth Black Gloss (SBK) Graphite Textured (GPH) Grey Textured (GRY) Green Textured (GRN) Hunter Green Textured (HGN) Custom (CS)	Nema 7-Pin Receptacle (PE7) [1] Button Photocell (PC) [1] FSP-211 with Motion Sensor/Photocell (FSP211-SPC) [1,11] 9'-20' Heights (FSP211-20) [1,11] 21'-40' Heights (FSP211-40) [1,11] FSP-221 with Motion Sensor/Photocell (FSP221-SPC) [1,12] 21'-40' Heights (FSP221-40) [1,12] Custom Controls Integration (CCI) [1] No Options (NO)	Marine Grade Finish (MGF) House Side Shield (HSS) Rotated Optic Left (ROL) Rotated Optic Right (ROR) Buy American Act (BAA) [9] Trade Agreement Act (TAA) [9] Build America Buy American (BABAA) [9] No Options (NO)	8' (8) 10' (10) 12' (12) No Pole (NO) Aluminum Pole .250 Wall Comes With 12" Anchor Base 1" Thick, 1" Anchor Bolts

NOTES:
1. Consult Factory For Lead Time. Consult Factory For 90 CRI Requests.
2. MPF Mid Pole Fixture. Consult Factory
3. Only Available When Ordering NLS Pole
4. Universal Voltage 120-277
5. 3000k or lower must be selected to meet International Dark-Sky Association certification.
6. Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali-II, Avi-On, or other control systems)
7. Turtle Safe
8. Consult factory for all BAA/TAA/BABA requests
9. Consult Factory for Lead Time
10. Not Available above 700mA
11. FSP-211, 120V/277V, 230-240VAC (single phase), 50/60Hz
12. FSP-221, 100–347VAC (single phase) or 208/230/480VAC (phase-to-phase)



PRODUCT SPECIFICATIONS

TRAC 1 LUMEN CHART

TRAC LUMEN CHART

PART NUMBER	T2	LM/W	BUG	T3	LM/W	BUG	T4	LM/W	BUG	T5	LM/W	BUG	WATTS
TRC-1-16L-S3-30K7	3,508	125	B1-U0-G1	3,527	126	B1-U0-G1	3,527	126	B1-U0-G1	3,596	128	B2-U0-G1	28
TRC-1-16L-S3-40K7	3,683	132	B1-U0-G1	3,704	132	B1-U0-G1	3,704	132	B1-U0-G1	3,776	135	B2-U0-G1	28
TRC-1-16L-S3-50K7	3,683	132	B1-U0-G1	3,704	132	B1-U0-G1	3,704	132	B1-U0-G1	3,776	135	B2-U0-G1	28
TRC-1-16L-S3-30K7	6,022	108	B1-U0-G1	6,056	108	B1-U0-G1	6,056	108	B1-U0-G1	6,174	110	B3-U0-G1	56
TRC-1-16L-S3-40K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G1	6,482	116	B3-U0-G1	56
TRC-1-16L-S3-50K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G2	6,482	116	B3-U0-G1	56

3000k or lower must be selected to meet International Dark-Sky Association certification.

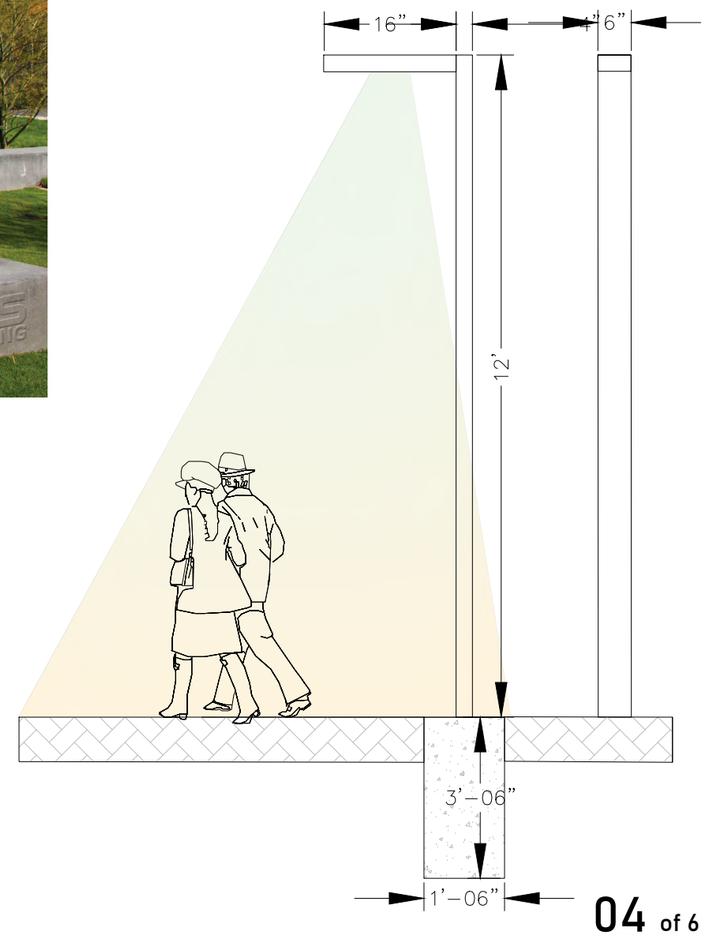
TRAC 1 LUMEN CHART HSS

PART NUMBER	T2 HSS	LM/W	BUG	T3 HSS	LM/W	BUG	T4 HSS	LM/W	BUG	WATTS
TRC-1-16L-S3-30K7	2,582	92	B0-U0-G1	2,496	89	B0-U0-G1	2,415	86	B0-U0-G1	28
TRC-1-16L-S3-40K7	2,711	97	B0-U0-G1	2,621	94	B0-U0-G1	2,535	91	B0-U0-G1	28
TRC-1-16L-S3-50K7	2,711	97	B0-U0-G1	2,621	94	B0-U0-G1	2,535	91	B0-U0-G1	28
TRC-1-16L-S3-30K7	4,433	79	B1-U0-G1	4,285	77	B0-U0-G1	4,145	74	B1-U0-G1	56
TRC-1-16L-S3-40K7	4,654	83	B1-U0-G1	4,499	80	B1-U0-G1	4,353	78	B1-U0-G1	56
TRC-1-16L-S3-50K7	4,654	83	B1-U0-G1	4,499	80	B1-U0-G1	4,353	78	B1-U0-G1	56

Lumen Maintenance Data

Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,00 Hours*	100,000 Hours**
25°C	Up to 700mA	56,000	173,000	95.7%	91.6%	89.6%	82.1%

*Reported extrapolations per IESNA TM-21 **Projected extrapolations per IESNA TM-21



ARGONAUT - CONCEPTUAL PLAN

SPECIFICATION: BOLLARD LIGHT

MAKE: NLS LIGHTING
MODEL: TBL-BOLLARD LIGHT
QTY: 05
WATTAGE: 10
SPEC: 05

Project Name: | Type:

TBL ORDERING GUIDE

Cat#	Length	Light Dist.	# of LEDs	Millamps
TBL	42		16L	175
Trac Linear Bollard (TBL)	24 in (24)	Type 2 (T2)	16 (16L)	175 (175)
	36 in (36)	Type 3 (T3)		400 (40)
	42 in (42)	Type 4 (T4)		530 (53)
				700 (7)
				1050 (1)

Kelvin	Volts	Mounting	Color	Options
30K			BLK	
Amber 585-620nM (AMBER) 4, 6, 6	120-277 (UNV)	Anchor Base (AB)	Bronze Textured (BRZ)	Marine Grade Finish (MGF)
2700K, 70 CRI (27K7)			White Textured (WHT)	Dual Head (DH)
2700K, 80 CRI (27K8)			Smooth White Gloss (SWT)	House Side Shield (HSS)
3000K, 70 CRI (30K7)			Silver Metallic (SVR)	20KA Surge Protector (20KA)
3000K, 80 CRI (30K8) 1			Black Textured (BLK)	Buy American Act (BAA) 4
3500K, 80 CRI (35K8)			Smooth Black Gloss (SBK)	Trade Agreement Act (TAA) 4
4000K, 70 CRI (40K7)			Graphite Textured (GPH)	Build America Buy American (BABA) 4
4000K, 80 CRI (40K8) 1			Grey Textured (GRY)	Custom Controls Integration (CCI) 2
5000K, 70 CRI (50K7)			Green Textured (GRN)	
5000K, 80 CRI (50K8) 1			Hunter Green Textured (HGN)	
			Custom (CS)	

NOTES:
1. Consult Factory for Lead Time. Consult Factory for 90 CRI Requests.
2. Please contact Factory for Custom Control Integration requests (KLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali II, 4wiOn, or other control systems)
3. Turtle Safe
4. Consult factory for all BAA/TAA/BABA requests
5. Consult Factory for Lead Time
6. Not Available above 1000mA



PRODUCT SPECIFICATIONS

TBL LUMEN CHART

TRAC LUMEN CHART

PART NUMBER	T2	LM/W	T3	LM/W	T4	LM/W	WATTS
TBL-16L-175-30K7	774	77	765	77	799	80	10
TBL-16L-175-40K7	799	80	791	79	825	83	10
TBL-16L-175-50K7	833	73	816	82	850	85	10
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TBL-16L-53-30K7	2968	106	2940	105	3080	110	28
TBL-16L-53-40K7	3220	115	3192	114	3332	119	28
TBL-16L-53-50K7	3472	124	3416	122	3584	128	28
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TBL-16L-1-30K7	5544	99	5488	98	5408	96	56
TBL-16L-1-40K7	6048	108	5936	106	5992	107	56
TBL-16L-1-50K7	6496	116	6384	114	6440	115	56

Lumen Maintenance Data

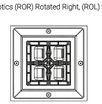
Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,00 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

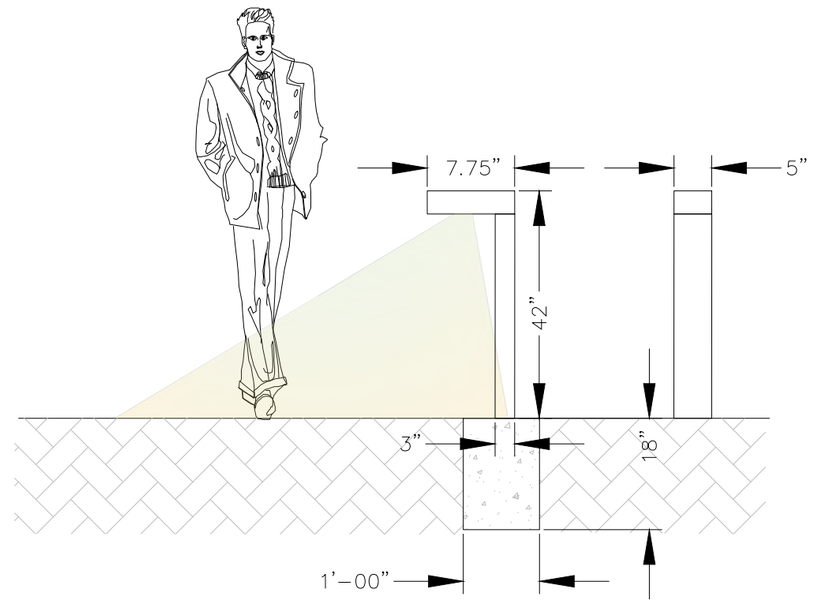
*Reported extrapolations per IESNA TM-21 **Projected extrapolations per IESNA TM-21

OPTICAL CONFIGURATIONS

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.

TBL / 16L





ARGONAUT - CONCEPTUAL PLAN

SPECIFICATION: DOWN LIGHT

Meritage Homes

VCL 2652 Visual Concepts Lighting

MAKE:	ECOSENSE LIGHTING
MODEL:	RISE-DOWN LIGHT
QTY:	6
WATTAGE:	7.5
SPEC:	06

RISE™

OVERVIEW • SPECIFICATIONS • ORDERING | INTERIOR + EXTERIOR | **FO80 SINGLE**

DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE FO80 SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE, DELIVERING UP TO 1170 LUMENS, THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AIMABILITY USING ONLY ONE TWIST.



FEATURES :

- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 1170 LUMENS
- MACRO™ LOCK • 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (110 V-277 V)
- 8 CCTS: 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED

FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
FO80	15	MO	30	8	70	K	X	
FO80	15 - Single Head	LO - Low Output MO - Medium Output HO - High Output	27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K	8 - 80 9 - 90+	05 – Laser Spot (5°) 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 40 - Flood (40°) 60 - Medium Flood (60°) 70 - Wide Flood (70°) 90 - Very Wide Flood (90°) E1 - Elliptical 1 (15°x60°) E2 - Elliptical 2 (30°x60°) E3 - Elliptical 3 (60°x15°) E4 - Elliptical 4 (60°x30°)	K - Black Z - Bronze S - Silver	X - No Accessory H - Half Snoot F - Full Snoot	A - 18" Flying Leads - Internal Cable IC; Bottom Exit; 1/2" NPT **UL/CE Listed** B* - 10' External Cable Side Exit; Surface Mount **UL Listed** C* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT **UL Listed** D* - 10' External Cable Side Exit; Surface Mount **CE Listed** E* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT **CE Listed**
OR DEMAND SHIPPING								
BUILD TO ORDER SHIPPING	*2200K and 2500K not available in 40°, 60°, 70° and 90°		22 - 2200K 25 - 2500K 50 - 5000K 65 - 6500K RD - Red GR - Green BL - Blue AM - Amber	X - For RD, GR, BL, AM *Kelvins available: 2200K, 2500K, 5000K and 6500K		W - White C - Custom*		

EXAMPLE: FO80-15-LO-22-8-05-S-X-A

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
*SEE PHOTOMETARY CHART FOR LUMEN DATA	4	Low Output	309	429	76	107	21,991	705
	7.5	Medium Output	531	761	71	101	37,824	1,293
	11.5	High Output	744	1,120	65	99	53,048	1,874

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX 80+, 90+
COLOR CONSISTENCY 3-STEP MACADAM ELLIPSE

LUMEN DEPRECIATION

WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
LOW	>60,500* >109,000**	>60,500* >109,000**	>60,500* >109,000**	>60,500* >109,000**
MEDIUM	>60,500* >109,000**	>60,500* >109,000**	>60,500* >109,000**	>60,500* >109,000**
HIGH	>60,500* >181,000**	>66,300*	>60,500* >159,800**	>33,200*

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR
** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/rise for the most updated information.

ECOSENSE LIGHTING INC.
837 NORTH SPRING STREET
SUITE 103
LOS ANGELES, CA 90012

SUPPORT@ECOSENSELIGHTING.COM

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PATENT PENDING
PART NUMBERS FREEDOM TO OBJECT. NUMBERS ALPHABETICALLY AS TRADEMARKS OF **ECOSENSE** LIGHTING INC.

RISE™

OVERVIEW • SPECIFICATIONS • ORDERING | INTERIOR + EXTERIOR | **FO80 SINGLE**

DATE | PROJECT | FIRM | TYPE

If inner optic = 40°,
Desired angle ..... Order the following spread lens

5 Degree	NOT SUPPORTED
10 Degree	NOT SUPPORTED
15 Degree	NOT SUPPORTED
20 Degree	NOT SUPPORTED
40 Degree	FO80-LENS-10
60 Degree	FO80-LENS-40
70 Degree	FO80-LENS-60
90 Degree	FO80-LENS-90
15x60 or 60x15 Degree	NOT SUPPORTED
30x60 or 60x30 Degree	NOT SUPPORTED
Full Set of Beam Angle Lens Degree (5, 10, 15, 20, 40, 60, 70, 90, 15X60 or 60X15, 30X60 or 60X30)	FO80-LENS-FULLSET

Honeycomb Louver
Honeycomb Louver FO80 ..... FO80-LV-HComb

Color Filters

Red	FO80-FILTER-RED
Blue	FO80-FILTER-BLUE
Green	FO80-FILTER-GREEN
Amber	FO80-FILTER-AMBER

FO80 Wall Mount Arm (for use only with Wiring Option C – External Cable Bottom Exit and not for use with multi-up fixtures)

Wall Mount Arm, 6 inch, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom)	
Wall Mount Arm, 12 inch, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom)	FO80-WMA-12-(K,Z,S,W,C)
Wall Mount Arm, 18 inch, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom)	FO80-WMA-18-(K,Z,S,W,C)
Wall Mount Arm, 24 inch, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom)	FO80-WMA-24-(K,Z,S,W,C)

Ground Stake (for use only with Wiring Option C – External Cable Bottom Exit and not for use with multi-up fixtures)
Landscape Stake, 12 in (for use with FO80 Single Head only, not for use with multi-fixture units) FO80-LS-15-STK-12

Ground Stake (for use only with Wiring Option C – External Cable Bottom Exit and not for use with multi-up fixtures)
Landscape Stake, 12 in (for use with FO80 Single Head only, not for use with multi-fixture units) FO80-LS-15-STK-12

Perma Post (for use only with Wiring Option A, C, or E - for use with Single and multi-up fixtures)
Perma Post and Cap - 19" x 2-3/4", Black, Post, and Cap with 1/2" NPT female thread RISE-PERMA-POST-19

Slip Fitter (for use only with Wiring Option A, C, or E – For use with Single and Multi-up fixtures)
Slip Fitter, 2-3/8" post, 1/2" NPT female threads, color finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) ..... RISE-SLIP-FITTER-(K,Z,S,W,C)

Canopy Plate (not for use with Wiring Option B or D - External Cable Side Exit)
Canopy Plate, 4" Dia Round J-Box Cover, 1/2" NPT female thread, (K=Black, Z=Bronze, Z=Silver, W=White, C=Custom) .....

Junction Box Cover (not for use with Wiring Option B or D – External Cable Side Exit)
Junction Box Cover, 2x4, Single 1/2" NPT female thread, Silver Grey RISE-JBC-RABR14

Tree Strap (not for use with Wiring Option B or D - External Cable Side Exit)
Tree mount with strap and junction box and cover, 72" strap for 21" diameter trees, Bronze RISE-TMS-TB-V153

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/rise for the most updated information.

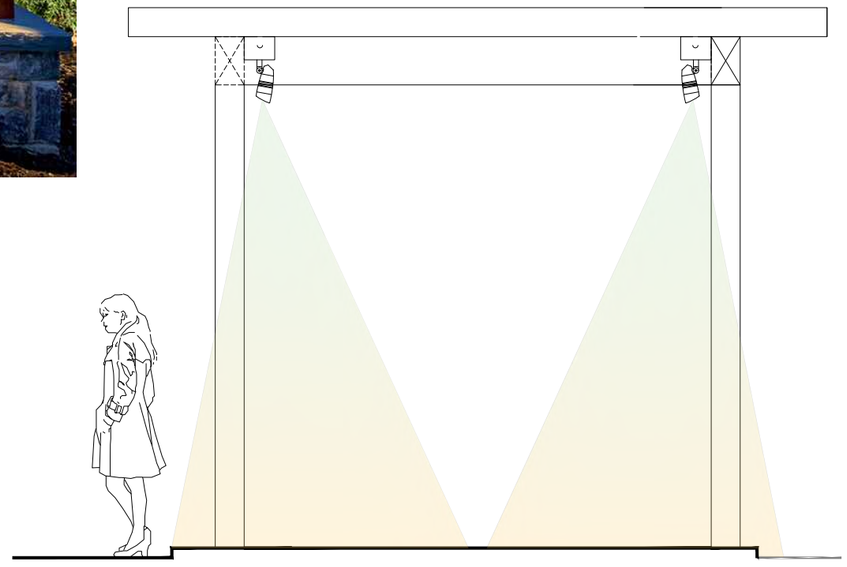
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ORDINANCE NO. 2026-___

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, APPROVING A DEVELOPMENT AGREEMENT BETWEEN THE CITY AND MLC HOLDINGS, INC. FOR THE DEVELOPMENT OF A 61-UNIT RESIDENTIAL TOWNHOME COMMUNITY LOCATED AT 95 ARGONAUT (APN: 623-091-01)

WHEREAS, the City of Aliso Viejo ("City") has found that development agreements strengthen the public planning process, encourage private participation in comprehensive planning by providing a greater degree of certainty in that process, reduce the economic costs of development, allow for the orderly planning of public improvements and services, allocate costs to achieve maximum utilization of public and private resources in the development process, and ensure that appropriate measures to enhance and protect the environment are achieved;

WHEREAS, pursuant to California Government Code section 65864 et seq., the City of is authorized to enter into development agreements providing for the development of land under terms and conditions set forth therein;

WHEREAS, on October 24, 2024, MLC Holdings, Inc. ("Applicant") submitted a general plan amendment, zone change, vesting tentative tract map, site development permit, and a development agreement application to demolish an existing office building to accommodate the construction of a multi-family residential community at 95 Argonaut ("Project");

WHEREAS, because of the logistics, magnitude of the expenditure and considerable lead time prerequisite to planning and developing the Project, Developer has proposed to enter into a development agreement concerning the Project ("Development Agreement") to provide assurances that the Project can proceed without disruption caused by a change in the City's planning policies and requirements except as provided in the Development Agreement, which assurance will thereby reduce the actual or perceived risk of planning for and proceeding with development of the Project;

WHEREAS, the City Council has determined that by entering into the Development Agreement: (i) the City will promote orderly growth and quality development on the Property in accordance with the goals and policies set forth in the General Plan; (ii) significant benefits will be created for City residents and the public generally from increased housing, parks and or park improvements, and the public gathering opportunities created by the Project;

WHEREAS, it is the intent of the City and Applicant to establish certain conditions and requirements related to review and development of the Project which are or will be the subject of subsequent development applications and land use entitlements for the Project as well as the Development Agreement;

WHEREAS, the City and Applicant have reached mutual agreement and desire to voluntarily enter into the Development Agreement to facilitate development of the Project subject to the conditions and requirements set forth therein;

WHEREAS, the Development Agreement contains, including, without limitation, property owner's vested right to complete development of the Project with governing land use regulations applicable at the time of approval; defines the scope of the Project; and identifies the public benefit obligations of the Applicant;

WHEREAS, on November 6, 2024, the City Council held a duly noticed public review to receive and provide initial feedback on concept plans for the Project;

WHEREAS, on November 5, 2025, the City Council held a study session to discuss development agreements and impact fees;

WHEREAS, on November 19, 2025, the City Council held a duly noticed public hearing, discussed the parameters of the public benefit contributions of the Development Agreement, and continued the meeting to December 3, 2025, to allow the Applicant additional time to address easement encroachment issues with the Aliso Viejo Community Association;

WHEREAS, the public benefits include, among other things, park in-lieu fees, as authorized by law and the City's ordinances, to rehabilitate and improve existing open space and recreational facilities in the City, including but not limited to, the Aquatic Center, Iglesia Community Center and Park, and the Ranch ("Facilities") in order to maintain the City's high standard of recreation and community services while accommodating a growing population, including future residents of the proposed subdivision;

WHEREAS, residents throughout the City regularly use the Facilities due to the variety of programs and services offered. Although the Facilities are located outside of the subdivision, future residents of the subdivision will undoubtedly use and benefit from use of the Facilities as well;

WHEREAS, on December 3, 2025, the City Council held a duly noticed public hearing and introduced the Ordinance;

WHEREAS, on January 21, 2025, the City held a duly noticed public hearing, at which time all interested persons had the opportunity to appear and be heard; and

WHEREAS, all legal prerequisites to the adoption of this Ordinance have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ALISO VIEJO DOES ORDAIN AS FOLLOWS:

Section 1: **Incorporation of Recitals.** The City Council hereby finds and determines that all of the recitals set forth above are true and correct. The above recitals are hereby incorporated as substantive findings of this Ordinance.

Section 2. **CEQA.** Pursuant to the California Environmental Quality Act (Public Resources Code, § 21000 et seq.) and State CEQA Guidelines (California Code of Regulations, title 14, § 15000 et seq.) (Collectively, "CEQA"), the City Council adopted Resolution No. _____, determining that there is no substantial evidence that the approval of the Project associated with the Development Agreement would result in a significant adverse effect on the environment, provided appropriate mitigation measures, as identified in the MMRP, are imposed on the Project.

Section 3. **Findings.** Pursuant to AVMC 15.82.010 (Development Agreement and Other Actions), the City Council determined that approving the Development Agreement is in the best interest of the City and for the common benefit of residents, and hereby makes the following findings of fact and approves the Development Agreement between the City and the Applicant as set forth in Exhibit "A", which are attached hereto and incorporated herein by reference.

1. Public Welfare. Approval of the development agreement will not create conditions materially detrimental to public health, safety and general welfare. The development agreement includes provisions to ensure compliance with applicable land use regulations, defines the scope of the Project, and identifies the public benefit obligations of the Applicant. The Project is compatible with adjacent multi-family and single-family communities in terms of layout, architectural style, materials, and open space; the site is served by existing infrastructure, including roads, utilities, and public services sufficient to support residential development; that the environmental assessment determined impacts would be less than significant with mitigation; the Project advances the City's housing goals by creating new housing opportunities; and future construction will be subject to plan check review and inspection to ensure compliance with all applicable building and safety standards.

2. General Plan Consistency. The development agreement is consistent with the goals, objectives, and policies of the general plan and any applicable specific plan. The Project is consistent with the goals and policies of the Conservation and Open Space, Housing, and Land Use element in that the Project promotes orderly growth, provides a compatible transition between non-residential and residential uses, supports housing objectives by creating new residential opportunities, and utilizes existing infrastructure in a manner consistent with the community's long-term vision and planning framework. The Project is also subject to mitigation measures and conditions of approval that address potential impacts related to traffic, noise, air quality, and emergency access. The Development Agreement incorporates, among other provisions, the scope of the Project, compliance with governing regulations, and the Applicant's public benefit obligations.

Section 4. **Minor Modifications.** The City Council hereby approves the Development Agreement attached hereto as Exhibit "A" and authorizes the Community Development Director to make any further minor, non-substantive changes and modifications thereto.

Section 5. **Effective Date.** This Ordinance shall not take effect unless and until General Plan Amendment GPA-2025-00002, Zone Change ZC-2025-00002, Vesting Tentative Tract Map 19340, and Site Development Permit SDP-2024-00001 are each approved by the City Council and have become effective, and the Development Agreement is executed by both parties.

Section 6. **Severability.** If any provision of this Ordinance or its application to any person or circumstance is held to be invalid by a court of competent jurisdiction, such invalidity has no effect on the other provisions or applications of the Ordinance that can be given effect without the invalid provision or application, and to this extent, the provisions of this Ordinance are severable. The City Council declares that it would have adopted this Ordinance irrespective of the invalidity of any portion thereof.

Section 7. **City Clerk's Certification.** The City Clerk shall certify to the adoption of this Ordinance and cause a summary thereof to be published five days prior to the date of adoption of this Ordinance, and, within 15 days after adoption, the City Clerk shall cause to be published the aforementioned summary and shall post a certified copy of this Ordinance, together with the vote for and against the same, in the Office of the City Clerk.

Section 8. The Mayor, City Manager, and City Clerk or their designees, are authorized to take such actions to affect execution, recordation, and enforcement of this Ordianance and the Development Agreement.

PASSED, APPROVED AND ADOPTED this ___ day of _____, 2026.

_____
[Insert Name]
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, Kathy Bailor, Interim City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that the foregoing is the original of Ordinance No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the ___ day of _____ 2026, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

I hereby certify that the foregoing is the original of Ordinance No. 2026-__ duly passed and adopted by the Aliso Viejo City Council at its regular meeting held _____, 2026, and that the Summary of the Ordinance was published on _____ and _____ in the Laguna Niguel News.

_____
KATHY BAILOR,
INTERIM CITY CLERK

(SEAL)

Exhibit “A”
Development Agreement

RECORDED AT REQUEST OF
AND WHEN RECORDED RETURN TO:
City of _____
Address
_____, California _____
Attn: City Manager

Fee Exempt - Gov't Code §6103

(Space above for Recorder's Use)

DEVELOPMENT AGREEMENT

between

THE CITY OF ALISO VIEJO,
a California municipal corporation

and

_____ WHICH WILL DO BUSINESS IN CALIFORNIA AS _____, A _____ LIMITED-LIABILITY COMPANY

THIS DEVELOPMENT AGREEMENT ("Agreement") is entered into by and between THE CITY OF ALISO VIEJO, a California municipal corporation ("City"), and _____. which will do business in California as _____, a _____limited-liability company ("Owner") with reference to the following facts:

RECITALS.

A. To strengthen the public planning process, encourage private participation in comprehensive planning and reduce the economic risk of development, the Legislature of the State of California adopted the "Development Agreement Statute," Sections 65864 et seq., of the Government Code. City, a general law city, is authorized by the Development Agreement Statute to enter into development agreements with persons and entities having legal or equitable interests in real property for the purpose of establishing predictability for both City and the property owner in the development process. Owner has requested that City enter into a development agreement for the development of the Property, as defined below. City enters into this Agreement pursuant to the provisions of the California Government Code, the City's General Plan, the City Municipal Code, and applicable City policies.

B. Owner has a legal or equitable interest in that certain real property consisting of approximately 2.85 acres of land located in the City of Aliso Viejo, County of Orange, State of California, more particularly described in Exhibit "A" (the "Property"). Owner desires to develop the Property for residential uses.

C. This Agreement is intended to ensure that Owner has provided funding sufficient to provide the adequate and appropriate public recreational facilities and services required by the development of the Property.

D. This Agreement also assures that the development will assist the City in meeting its goals for the provisions of affordable housing by contributing to the City's affordable housing stock.

E. This Agreement further assures that development of the Property may occur in accordance with City's General Plan, as amended by the General Plan Amendment and Zone Change. The development of the Property pursuant to the Existing Land Use Regulations, this Agreement, the Subsequent Land Use Regulations to which Owner has consented in writing, and Subsequent Development Approvals (as each of those terms and phrases is defined within this Agreement) shall be referred to as the "Development Plan."

F. This Agreement constitutes a current exercise of City's police powers to provide predictability to Owner in the development approval process by vesting the permitted use, density, intensity of use, and timing and phasing of development consistent with the Development Plan in exchange for Owner's commitment to provide significant public benefits to City (the "Public Benefits") as set forth in Section 9.

G. The provision by Owner of the Public Benefits allows the City to realize significant economic, recreational, park, open space, educational, social, and public

facilities benefits. The Public Benefits will advance the interests and meet the needs of Aliso Viejo's residents and visitors.

H. In return for Owner's participation and commitment to these significant contributions of private resources for public purposes, City is willing to exercise its authority to enter into this Agreement and to make a commitment of predictability for the development process for the Property. Absent City's willingness to make such a commitment, Owner would be unwilling to enter into this Agreement or make the significant investment of resources identified in this Agreement.

AGREEMENT

City and Owner agree as follows:

1. INTEREST OF OWNER. Owner represents that it has a legal or equitable interest in the Property and is authorized to enter into this Agreement.

2. PUBLIC HEARINGS. On December 3, 2025, after providing notice as required by law, the City Council held a public hearing on this Agreement and made the findings set forth in Section 3.

3. CITY COUNCIL FINDINGS. The City Council finds that:

   3.1 Subject to the approval of the General Plan Amendment and Zone Change becoming effective on or before the Effective Date, this Agreement is consistent with City's General Plan.

   3.2 This Agreement ensures a desirable and functional community environment, provides effective and efficient development of public facilities, infrastructure, and services appropriate for the development of the Project, enhances effective utilization of resources within the City, provides assurances to the developer in an effort to control the cost of housing and development to the consumer, and provides other significant benefits to the City and its residents.

   3.3 This Agreement provides public benefits beyond those which are necessary to mitigate the development of the Project.

   3.4 This Agreement strengthens the public planning process, encourages private participation in comprehensive planning, particularly with respect to the implementation of the City's General Plan, and reduces the economic costs of development and government.

   3.5 The best interests of the citizens of the City and the public health, safety, and welfare will be served by entering into this Agreement.

4. CONTINUING OBLIGATIONS. This Agreement binds the City now and in the future. By approving this Agreement, the City Council has elected to exercise

certain governmental powers at the time of entering into this Agreement rather than deferring its actions to some undetermined future date. The terms and conditions of this Agreement have undergone extensive review by the City staff and the City Council and have been found to be fair, just, and reasonable. City has concluded that the Project will serve the best interests of its citizens and that the public health, safety, and welfare will be best served by entering into this Agreement.

5. DEFINITIONS. In this Agreement, unless the context otherwise requires, the following terms and phrases shall have the following meanings:

5.1 "Agreement" shall mean this Development Agreement between the City and Owner. The term "Agreement" shall include any amendment properly approved and executed pursuant to Section 7.5.

5.2 "Approval Date" means the date on which the City Council conducted the first reading of the ordinance adopting this Agreement. That date is December 3, 2025.

5.3 "City" shall mean the City of Aliso Viejo, a California municipal corporation.

5.4 "City Council" shall mean the governing body of the City.

5.5 "City Municipal Code" shall mean the Aliso Viejo Municipal Code. However, changes to the Aliso Viejo Municipal Code occurring between the Approval Date and the Effective Date shall not be considered part of the City Municipal Code for purposes of this Agreement without Owner's prior written consent.

5.6 "Day" refers to a calendar day unless specifically stated as a "business day."

5.7 "Default" shall refer to a Major Default or Minor Default as defined herein.

5.8 "Development" shall mean the improvement of the Property for the purposes of completing the structures, improvements, and facilities comprising the Project including, but not limited to: grading; the construction of infrastructure and private facilities related to the Project whether located within or outside the Property; the construction of buildings and structures; the installation of landscaping; and other improvements.

5.9 "Development Approvals" shall mean all permits and other entitlements approved or issued by the City for the use of, construction upon, and/or development of the Property. For the purposes of this Agreement, Development Approvals shall be deemed to include, but are not limited to, the following actions, including revisions, addenda, amendments, and modifications to these actions:

a. this Agreement;

b. amendments to this Agreement;

c. amendments to the General Plan;

d. tentative and final subdivision and tract maps;

e. site development permit;

f. zoning;

g. grading and building permits;

h. certificates of compliance;

i. street, drainage, utility, stormwater, and landscape permits;

j. occupancy permits; and

k. environmental review documents for the Project.

5.10 "Development Impact Fees" shall mean all fees established and imposed upon the Project by the City and this Agreement.

5.11 "Development Plan" means the Existing Land Use Regulations, the Development Approvals, this Agreement, the Subsequent Land Use Regulations to which Owner has consented in writing, and Subsequent Development Approvals.

5.12 "Effective Date" shall mean the later of: (i) date the ordinance adopting this Agreement becomes effective; or (ii) expiration of the period provided by applicable law, including but not limited to Government Code Section 65009, for challenging the General Plan Amendment.

5.13 "Existing Land Use Regulations" means all Land Use Regulations in effect on the Effective Date, including the General Plan Amendment and Zone Change (including the range of Units approved for the Project by the General Plan Amendment). However, changes to Land Use and Zoning Regulations occurring between the Approval Date and the Effective Date shall not be considered part of the Existing Land Use or Zoning Regulations without Owner's prior written consent. Owner has consented to the General Plan Amendment and Zone Change, which shall be considered part of the Existing Land Use and Zoning Regulations.

5.14 "Final Map" refers to the final map which may be filed with respect to any Tentative Map, including the First Tentative Map, as set forth in Section 66456 et seq. of the Subdivision Map Act.

5.15 “First Tentative Map” shall mean the first Tentative Map for the Project which is approved by the City prior to or concurrent with the Effective Date of this Agreement. Owner may submit more than one Tentative Map to be considered concurrently as the First Tentative Map.

5.16 “First Tentative Map Submittal Package” shall mean the package of materials to be submitted with the Owner’s application for the First Tentative Map, which shall include the site development permit for the Project.

5.17 “General Plan” shall mean the general plan of the City.

5.18 “General Plan Amendment” shall refer to the amendment of the City’s General Plan on December 3, 2025, for the Property. A copy of the General Plan Amendment is attached as Exhibit “B”.

5.19 “Implementing Agreement” refers to any agreement entered into by Owner and the City for the implementation of obligations established in this Agreement.

5.20 “Land Use Regulations” shall mean all ordinances, resolutions, codes, rules, regulations and official policies of the City governing the development and use of land, including, without limitation, the permitted use of land, the density or intensity of use, subdivision requirements, timing and phasing of development, the maximum height and size of buildings, the provisions for reservation or dedication of land for public purposes, and the design, improvement, construction, and initial occupancy standards and specifications applicable to the Project. Land Use Regulations do not include any City ordinance, resolution, code, rule, regulation or official policy governing:

- The conduct or taxation of businesses, professions, and occupations applicable to all businesses, professions, and occupations in the City;

- Taxes and assessments of general application upon all residents of the City, provided that the taxes and assessments are not imposed for the purpose of taxing the right, power or privilege of developing or improving land (e.g., excise tax) or to directly finance the acquisition or dedication of open space or any other public improvement in respect of which the Owner is paying any fee (directly or through a Financing District) or providing any improvement pursuant to this Agreement;

- The control and abatement of nuisances.

5.21 “Major Default” refers to the material and substantial failure by (1) Owner to timely meet Owner’s Public Benefit obligations, or (2) City’s failure to issue Subsequent Development Approvals in accordance with its obligations

under this Agreement, or (3) either Party to provide the agreed upon cooperation needed to implement the Public Benefits and/or the development of the Property pursuant to the Development Plan, including but not limited to a failure to comply with the terms of any Implementing Agreement. This definition is not intended to expand or limit the legal definition of "materiality," but only to establish the agreement of the Parties as to the nature of a default which could lead to an early termination of this Agreement.

5.22 "Minor Default" means a failure by Owner or City to comply with the terms and conditions of this Agreement which is not a "Major Default" as defined herein.

5.23 "Mortgagee" means a mortgagee of a mortgage, a beneficiary under a deed of trust or any other security-device, a lender, and their successors and assigns.

5.24 "Owner" refers to _____., which will do business in California as _____, and Owner's successors and assigns as set forth in Section 14.14.

5.25 "Owner's Vested Right" refers to Owner's guaranteed right to develop the Property as set forth in this Agreement, with particular reference to Section 8.

5.26 "Paragraph" means a lettered or numbered paragraph of an Exhibit to this Agreement, unless specifically stated to refer to another document or matter. (Note below that "Section" means a lettered or numbered section of the main body of this Agreement.) A reference to a Paragraph includes all subparagraphs of that Paragraph.

5.27 The "Parties" means the City and Owner. A "Party" refers to either the City or the Owner.

5.28 "Per Square Foot" is a term used in calculating fees owed per Unit. The actual square footage of a Unit, excluding the garage, shown on the final approved construction plans shall be used in calculating the square footage of a Unit, provided such plans are consistent with all City Council approvals for the Project.

5.29 "Project" means the development of the Property as set forth in the Development Plan.

5.30 "Property" means the real property described in Exhibit "A".

5.31 "Public Benefits" refers to those benefits provided to the City and the community by Owner pursuant to Section 9 and Exhibit "C" below.

5.32 "Reservation of Authority" means the rights and authority specifically reserved to City which limits the assurances and rights provided to the Owner under this Agreement. The Reservation of Authority is described in Section 8.6.

5.33 "Section" refers to a numbered section of this Agreement, unless specifically stated to refer to another document or matter.

5.34 "Subsequent Development Approvals" means all Development Approvals and permits approved, granted, or issued after the Effective Date for the Project which are required or permitted by the Existing Land Use Regulations, the Subsequent Land Use Regulations to which Owner has consented in writing, and this Agreement. Subsequent Development Approvals include, without limitation, all development review approvals required under the Subdivision Map Act, the City's subdivision ordinance and/or other provisions of the City Municipal Code, site development permits, excavation, grading, building, construction, encroachment or street improvement permits, occupancy certificates, utility connection authorizations, drainage, landscape, or other permits or approvals necessary for the grading, construction, marketing, use and occupancy of the Project.

5.35 "Subsequent Land Use Regulations" means those Land Use Regulations which are both adopted and effective after the Approval Date and which are not included within the definition of Existing Land Use Regulations. "Subsequent Land Use Regulations" include any Land Use Regulations adopted by moratorium by initiative, City action, or otherwise

5.36 "Tentative Map" shall mean any tentative map, as defined in the Subdivision Map Act and the City Municipal Code, for the Project, including the First Tentative Map. With the approval of any Tentative Map, the City shall identify the conditions that shall be satisfied to process the map.

5.37 "Term" means the term of this Agreement as set forth in Section 7.2 of this Agreement.

5.38 "Unit" means a residential dwelling unit within the Project. This definition is provided solely for the purposes of determining the uses which may be built as a part of the Project and, if applicable, for calculating the City Fee described in Exhibit "C", and is not intended to allow for conversion of non-residential uses to residential uses.

5.39 "Very Low Income Household" means persons and families whose income does not exceed fifty percent (50%) of the then-current area median income of the County of Orange adjusted for family size by the State Department of Housing and Community Development in accordance with adjustment factors adopted and amended from time to time by the United States

Department of Housing and Urban Development pursuant to Section 8 of the United States Housing Act of 1937, as amended, and California Health and Safety Code Section 50105, as it may be amended from time-to-time. In no event, however, shall the maximum annual income for a Very Low Income Household be, for purposes of this Agreement, less than fifty percent (50%) of the then-current area median income of the County of Orange.

6. EXHIBITS. All exhibits attached to this Agreement are incorporated as a part of this Agreement. Those exhibits are:

Exhibit	Description
"A"	Legal Description of the Property
"B"	General Plan Amendment
"C"	Public Benefits
"D"	Density Bonus Housing Agreement
"E"	Assignment and Assumption Agreement

7. GENERAL PROVISIONS.

7.1 Binding Effect of Agreement. This Agreement shall be recorded against the Property and shall run with the land. The Development shall be carried out only in accordance with the terms of this Agreement. Until released or terminated pursuant to the provisions of this Agreement or until Owner has fully performed its obligations arising out of this Agreement, no portion of the Property shall be released from this Agreement.

7.2 Term of Agreement. The Term shall commence on the Effective Date. The Term shall continue for a period of ten (10) years from the Effective Date, subject to the following:

7.2.1 *Extensions of Term*. The Term shall be extended for periods equal to the time during which:

7.2.1.1 Litigation is pending which challenges any matter, including compliance with CEQA or any other local, state, or federal law, related in any way to the approval or implementation of all or any part of the Development Plan. Any such extension shall be equal to the time between the filing of litigation, on the one hand, and the entry of final judgment or dismissal, on the other. All such extensions shall be cumulative.

7.2.1.2 Any application by Owner for state or federal regulatory permits and/or approvals required for the Project has been pending more than one year after its submittal, beginning on the 366th day following its submittal for approval.

7.2.1.3 Any other delay occurs which is beyond the control of the Parties, as described in Section 14.10.

7.2.2 During the Term, certain portions of the Property may be released from this Agreement as provided elsewhere in this Agreement.

7.2.3 As provided in Section 7.3 and elsewhere within this Agreement, the Term may end earlier than the end of the Term specified in this Section.

7.3 Termination. This Agreement shall be deemed terminated and of no further effect upon the earlier occurrence of any of the following events:

7.3.1 Expiration of the Term as set forth in Section 7.2;

7.3.2 Entry of a final judgment setting aside, voiding, or annulling the adoption of the ordinance approving this Agreement;

7.3.3 The adoption of a referendum measure overriding or repealing the ordinance approving this Agreement;

7.3.4 Completion of the Project in accordance with the terms of this Agreement, including issuance of all required occupancy permits and acceptance, as required by state law, by City, or the applicable public agency, of all required dedications and the satisfaction of all of Owner's obligations under this Agreement; and

7.3.5 As may be provided by other specific provisions of this Agreement.

7.4 Effect of Termination. Subject to Section 8.9, upon any termination of this Agreement, the only rights or obligations under this Agreement which either Party shall have are:

7.4.1 The completion of obligations which were to have been performed prior to termination, other than those which are separately addressed by Section 12;

7.4.2 The performance and cure rights set forth in Section 12; and

7.4.3 Those obligations that are specifically set forth as surviving this Agreement, such as those described in Section 9 and in Sections 11.1 through 11.7 and Section 14.15.

7.5 Amendment or Cancellation of Agreement. This Agreement may be amended from time to time or canceled only by the written consent of both City and Owner in the same manner as its adoption, as set forth in California Government Code Section 65868. Any amendment or cancellation shall be in a form suitable for recording in the Official Records of Orange County, California. An amendment or other modification of this Agreement will continue to relate back to the Effective Date of this Agreement (as opposed to the effective date of the amendment or modification), unless the amendment or modification expressly states otherwise.

7.6 Release of Obligations With Respect to Individual Unit Upon Certification of Occupancy. Notwithstanding any other provision of this Agreement:

7.6.1 When any individual unit has been finally subdivided and sold, leased, or made available for lease to a member of the public or any other ultimate user, and a certificate of occupancy has been obtained for the building(s) on the lot, that unit and its owner shall have no further obligations under and shall be released from this Agreement.

7.6.2 Upon the conveyance of any lot, parcel, or other property, whether residential, commercial, or open space, to a homeowners' association, property owners' association, or public or quasi-public entity, that lot, parcel, or property and its owner shall have no further obligations under and shall be released from this Agreement, provided that this paragraph shall not be deemed to release any transferee (including a good faith purchaser) from obligations to pay assessments imposed in connection with a Financing District.

No formal action by the City is required to effect this release, but, upon Owner's request, City shall sign an estoppel certificate or other document to evidence the release.

7.7 Minor Changes. The provisions of this Agreement require a close degree of cooperation between the Parties and "Minor Changes" to the Project may be required from time to time to accommodate design changes, engineering changes, and other refinements related to the details of the Parties' performance. "Minor Changes" shall mean changes to the Project that are otherwise consistent with the Development Plan, and which do not result in a change in the type of use, an increase in density or intensity of use, significant new or increased environmental impacts that cannot be mitigated, or violations of any applicable health and safety regulations in effect on the Effective Date.

Accordingly, the Parties may mutually consent to adopting "Minor Changes" through their signing of an "Operating Memorandum" reflecting the Minor

Changes. Neither the Minor Changes nor any Operating Memorandum shall require public notice or hearing. The City Attorney and City Manager shall be authorized to determine whether proposed modifications and refinements are "Minor Changes" subject to this Section 7.7 or more significant changes requiring amendment of this Agreement. The City Manager may execute any Operating Memorandum without City Council action.

7.8 Term of Map(s) and Other Project Approvals.

7.8.1 Subdivision Maps. Pursuant to Government Code Section 66452.6, the term of all subdivision or tract maps that are approved for all or any portion of the Property shall be extended to a date coincident with the Term and, where not prohibited by State law, with any extension of the Term.

7.8.2 Site Development Permits. Site Development Permits for the Project shall have terms that coincide with the term of the subdivision or tract map for the portion of the Property to which a particular Site Development Permit pertains.

7.8.3 Other Development Approvals. Pursuant to Government Code Section 65863.9, any and all other Development Approvals for any portion of the Project shall automatically be extended for a term ending concurrently with the applicable tentative maps for the Project. Pursuant to Section 7.8.1, those terms shall be the same as the Term of this Agreement.

7.8.4 Decisions of Community Development Director. Any decision of the Community Development Director with respect to Subsequent Development Approvals may be appealed to the City's City Council pursuant to Section 15.70.080 of the Aliso Viejo Municipal Code.

7.9 Relationship of City and Owner. The contractual relationship between City and Owner arising out of this Agreement is one of independent contractor and not agency. This Agreement does not create any third-party beneficiary rights.

7.10 Notices. All notices, demands, and correspondence required or permitted by this Agreement shall be in writing and delivered in person, overnight delivery (e.g. Fedex) or mailed by first class and certified mail, return receipt requested, postage prepaid, addressed as follows:

If to City, to:
City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656

Attn: City Manager

With a copy to:
Scott C. Smith
18101 Von Karman Avenue
Suite 1000
Irvine, CA 92612

If to Owner, to:
_____. which will do business in California as _____, Inc., a _____ Corporation
[Address]

With a copy to:
Name
address

City or Owner may change its address by giving notice in writing to each of the other names and addresses listed above. Thereafter, notices, demands, and correspondence shall be addressed and transmitted to the new address. Notice shall be deemed given upon personal delivery or, notices shall be deemed given upon receipt as evidenced by the customary receipt provided by the delivery service.

7.11 Waiver of Right to Protest. Execution of this Agreement is made by Owner without protest. Owner knowingly and willingly waives any rights it may have under Government Code Section 66020 or any other provision of law to protest the imposition of any fees, dedications, reservations, or other exactions imposed on the Project as authorized by this Agreement.

8. DEVELOPMENT OF THE PROPERTY.

8.1 Owner's Vested Right. Owner shall have the vested right to complete Development of the Property in accordance with the Development Plan as provided in this Agreement ("Owner's Vested Right"). To enable Owner to complete the Project, Owner's Vested Right shall include, but not be limited to, the rights to (1) develop up to 58 market-rate for-sale residential Units and at least three (3) affordable for-sale units, all in accordance with the approved Project, (2) the timely issuance by the City of all Subsequent Development Approvals, and (3) the timely taking by the City of such other actions that are (i) requested by Owner, and (ii) consistent with the terms of this Agreement, including, but not limited, to the vested rights afforded pursuant to Section 8.9 of this Agreement. Where the Development Plan permits the development of some or all of the Property with a specified range of dwelling Units, Owner's Vested Right shall include the right to develop to the greater of: (i) the minimum number of dwelling Units

permitted by the General Plan Amendment; and (ii) any greater number of dwelling Units approved by City Council subsequent to the execution of this Agreement, provided that (i) Owner can comply with all applicable development standards contained in the Development Plan and (ii) the Project does not exceed the development limits set forth in the General Plan Amendment and Zone Change for the Property as a whole. Notwithstanding the foregoing, Owner shall develop at least three (3) affordable for sale units.

Owner's Vested Right shall be subject to the Reservation of Authority set forth in Section 8.6 and all provisions of this Agreement and may not be modified or terminated except as expressly provided by this Agreement.

8.2 Governing Land Use Regulations. The Land Use Regulations applicable to the Project and the Property shall be those contained in the Development Plan. An amendment or other modification of this Agreement will not change these applicable Land Use Regulations unless the amendment or modification expressly provides otherwise. Subsequent Land Use Regulations shall not apply to the Property except as authorized in Section 8.6 of this Agreement, unless the Owner and the City mutually agree in writing that the Project will be subject to one or more Subsequent Land Use Regulations. To the extent of any inconsistency between this Agreement and any provision of the City's subdivision ordinance (comprising Title 14 of the Aliso Viejo Municipal Code), this Agreement shall control.

Nothing contained in this Section shall be deemed to authorize City to withhold any building permit, approval, and/or certificate of occupancy based on Owner's failure to comply with any Land Use Regulation that is not applicable to the Project because of this Agreement.

8.3 Permitted Uses. Except as otherwise provided within this Agreement, the permitted uses on the Property shall be as provided in the Development Plan.

8.4 Density and Intensity; Requirement for Reservation and Dedication of Land. Except as otherwise provided within this Agreement, the density and intensity of use for all Development on the Property, and the requirements for reservation and dedication of land, shall be as provided in the Development Plan.

8.5 Unit Counts to be Determined with First Tentative Map Approval. The City Council will, concurrently with the approval of the First Tentative Map, determine the specific number of Units which may be built as part of the Project in accordance with Owner's Vested Right set forth in Section 8.1 of this Agreement. In order for the City to make this determination, Owner shall submit the First Tentative Map Submittal Package, concurrently with its application for the First Tentative Map.

8.6 Reservation of Authority. The following Land Use Regulations or Subsequent Land Use Regulations shall apply to the Property and the Project:

8.6.1 Processing fees and charges imposed by the City to cover the City's estimated or actual costs of reviewing and processing applications for the Project, providing inspections, conducting annual reviews, providing environmental analysis, or for monitoring compliance with this Agreement or any Development Approvals granted or issued, provided such fees and charges are in force and effect on a general basis on the date of filing such applications with the City. This Section shall not be construed to limit the authority of City to charge its then-current, normal and customary application, processing, and permit fees for Subsequent Development Approvals, building permits and other similar permits, which fees are designed to reimburse City's expenses attributable to such application, processing, and permitting and are in force and effect on a City-wide basis at such time as the Subsequent Development Approvals and permits are granted by City, notwithstanding the fact that such fees may have been increased by City subsequent to the Effective Date;

8.6.2 Procedural regulations relating to hearing bodies, petitions, applications, notices, findings, records, hearings, reports, recommendations, appeals, and any other matter of procedure;

8.6.3 The following, provided that (i) they are uniformly applied to all development projects within the City and (ii) are not applied retroactively to any Development Approval issued before their adoption or amendment:

8.6.3.1 Uniform codes governing engineering and construction standards and specifications adopted by the City pursuant to state law. Such codes include, without limitation, the City's Municipal Code, adopted version of the California Building Code, California Plumbing Code, California Mechanical Code, California Electrical Code, California Energy Code, California Green Building Standards Code, California Residential Code, and California Fire Code;

8.6.3.2 Local amendments to those uniform codes which are adopted by the City pursuant to state law, provided they pertain exclusively to the preservation of life and safety; and

8.6.3.3 The City's standards and procedures regarding the granting of encroachment permits and the conveyance of rights and interests which provide for the use of or the entry upon public property.

8.6.4 Regulations which may be in conflict with this Agreement, but which are objectively required (and there are no available reasonable alternatives) to protect the public health and safety in the event of a sudden, unexpected occurrence involving a clear and imminent danger, and demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services within the immediate community. Such regulations must be a valid exercise of the City's police power and must be applied and construed so as to provide Owner, to the maximum extent possible, with the rights and assurances provided in this Agreement. To apply to the Property, such regulations must be adopted after a public hearing and must be based upon findings of necessity established by a preponderance of the evidence. Any regulations, including moratoria, enacted by City and imposed on the Property to protect the public health and safety in the circumstances described above shall toll the Term and any time periods for performance by Owner and City set forth in this Agreement;

8.6.5 Owner shall be issued building permits for the Project after permit applications are reviewed and approved by City in the City's customary fashion for such review and approval; and

8.6.6 The exercise of the power of eminent domain.

8.7 County-Mandated Impact Fees. Nothing in this Agreement shall relieve Owner of the responsibility to pay any impact fees established by the County of Orange or associated with any County program and for which Owner is legally responsible. Owner shall pay any such fees the City is required to collect or otherwise collects on behalf of the County of Orange. Owner understands and acknowledges that Exhibit "C" reflects only the City's estimate of fees paid and fees owed, and may not accurately reflect Owner's County fee obligations. The omission of any fee from Exhibit "C" which is due to the County or any other public agency shall not invalidate or otherwise affect Owner's obligation to pay that fee.

8.8 Adequacy of Required Infrastructure. The City acknowledges and agrees that there will be sufficient capacity to accommodate the Project in the infrastructure and services owned, operated, outsourced, controlled, and/or provided by the City, including, without limitation, traffic circulation, storm drainage, trash collection, and flood control. Where City renders or outsources such services or owns such infrastructure, City shall serve the

Project and there shall be no restrictions placed upon Owner concerning hookups or service for the Project, except for reasons beyond City's control. Notwithstanding the foregoing, City does not warrant the adequacy of, and City shall not be responsible or liable for any infrastructure or services that are not owned, operated, outsourced, controlled, and/or provided by City.

8.9 Vested Rights Upon Termination. Termination of the Agreement shall not invalidate any Land Use Regulations or terminate any Subsequent Development Approvals obtained prior to the date of termination. Upon any termination of this Agreement, Owner's vested rights, if any, shall be determined by this Agreement to the extent development has occurred hereunder, and as to the remainder of the Project, by state and federal statutes and case law and then current factual state of the Development. Subject to that determination of rights and all other applicable law, Owner's right to continue development of the Project pursuant to some or all of the Development Plan shall be subject to the ordinary exercise of the City's police power, including the adoption of a general plan amendment, zoning change, or other Land Use Regulations applicable to the Property. Owner acknowledges that following termination or expiration of this Agreement, except as to any development that has vested, City may amend the general plan designation of the Property and/or the zoning designation applicable to the Property.

8.10 Waiver of Density Bonus. While this Agreement is in effect, Owner waives any right Owner may have to a density bonus under Government Code Sections 65915 through 65917.5 or the Aliso Viejo Municipal Code. Densities vested hereunder include all densities available as density bonuses under the Aliso Viejo Municipal Code and Government Code Sections 65915 through 65917.5; Owner shall not be entitled to further density bonuses.

8.11 Staffing and Expedited Processing. City shall employ all lawful actions capable of being undertaken by City to (i) promptly receive and, when complete, accept all applications for Subsequent Development Approvals and related environmental analysis, if any (collectively, "Applications"), and (ii) expeditiously process and take action upon the Applications in accordance with applicable law.

8.12 Changes in Federal and State Law. The Property may be subject to subsequently enacted state or federal laws or regulations that preempt local regulations or mandate the adoption of local regulations that conflict with the Development Plan. Upon discovery of such a subsequently enacted federal or state law, City or Owner shall provide the other Party with written notice, a copy of the state or federal law or regulation, and a written explanation of the legal or regulatory conflict created. Within ten (10) days thereafter, City and Owner shall meet and confer in good faith in a reasonable attempt to modify this Agreement, as necessary, to comply with

such federal or state law or regulation. In such negotiations, City and Owner agree to preserve the terms of this Agreement and the rights of Owner and City as derived from this Agreement to the maximum feasible extent while resolving the conflict. City agrees to cooperate with Owner in resolving the conflict in a manner which minimizes any financial impact of the conflict upon Owner or City. City also agrees to process, in the same expedited manner as set forth for Applications in Section 8.11, Owner's proposed changes to the Development Plan as needed to comply with such federal or state law, and to process those changes in accordance with City procedures. Any delays caused by such changes in state or federal law shall toll the term of this Agreement and the time periods for performance by Owner and City set forth in this Agreement.

8.13 Cooperation in Securing Other Governmental Approvals and Permits. City agrees to make its staff available, at Owner's cost, to assist Owner in securing permits and approvals required by other governmental agencies to assure Owner's ability to (i) implement the Development Plan and (ii) perform its obligations under this Agreement in a timely manner. City does not warrant or represent that any other governmental permits or approvals will be granted.

8.14 Compliance with CEQA. Where the California Environmental Quality Act requires that an environmental analysis be performed in connection with a future discretionary approval granted by the City for the Project, the City, consistent with Section 8.13, shall provide the cooperation needed to expeditiously complete those actions.

8.15 Timing of Development. Because the California Supreme Court held in *Pardee Construction Co. v. City of Camarillo*, 37 Cal. 3d 465 (1984), that the failure of the parties in that case to provide for the timing of development resulted in a later-adopted initiative restricting the timing of development to prevail over the parties' agreement, it is the specific intent of the Parties to provide for the timing of the Project in this Agreement. To do so, the Parties acknowledge and provide that Owner shall have the right, but not the obligation, to complete the Project in such order, at such rate, at such times, and in as many development phases and sub-phases as Owner deems appropriate in its sole subjective business judgment but subject to Section 9.4 of this Agreement.

8.16 Conditions, Covenants and Restrictions. Owner shall have the ability to reserve and record such covenants, conditions, and restrictions ("CC&Rs") against the Property as Owner deems appropriate, in its sole and absolute discretion. Such CC&Rs may not conflict with this Agreement or the General Plan. Before recording any CC&Rs, Owner shall provide a copy of the CC&Rs to the City for review and approval by the City Attorney. The City Attorney's review shall be limited to determining if the CC&Rs substantially comply with this Agreement. Within forty-five (45) days after receiving a

copy of the proposed CC&Rs from Owner, the City Attorney shall provide Owner with either (i) a statement that the CC&Rs comply with this Agreement ("CC&R Approval") or (ii) written comments identifying each aspect of the CC&Rs which the City Attorney believes not to be in compliance with this Agreement (a "Statement of Non-Compliance"). If the City Attorney fails to provide Owner with either CC&R Approval or a Statement of Non-Compliance within forty-five (45) days following a written request by Owner, City shall be deemed to have approved the CC&Rs and Owner may record the CC&Rs against the Property. If the City Attorney provides a Statement of Non-Compliance, Owner shall have thirty (30) days in which to respond to the Statement of Non-Compliance. Upon submittal of Owner's response, the procedure described above for the initial submittal and City Attorney review of proposed CC&Rs shall again be followed. This procedure shall be followed until Owner either (1) receives CC&R Approval, (2) submits the compliance issues to binding arbitration pursuant to the rules of the American Arbitration Association, (3) files an action for declaratory relief in Orange County Superior Court seeking a judicial determination of the compliance of the proposed CC&Rs, or (4) agreement is otherwise reached between the Parties allowing for the recording of the CC&Rs. The CC&Rs may run with the land and bind Owner's successors and assigns. Except as provided above, any dispute between the Parties regarding the City's approval or rejection of the CC&Rs shall be subject to immediate and binding arbitration pursuant to the rules of the American Arbitration Association.

9. PUBLIC BENEFITS.

9.1 Intent. This Agreement is entered into by the City in consideration of, and in exchange for, Owner's agreement to contribute to the development and rehabilitation of public recreational facilities, affordable housing, and other services.

9.2 Public Benefits. Owner's development and financial obligations related to public benefits are set forth in this Section 9 and Exhibit "C". This Section 9 and Exhibit "C" shall survive the termination, cancellation, or expiration of this Agreement.

9.3 Independent Nature of Obligations. Owner's Public Benefit obligations are independent of the obligations of any other landowner or any other property which the City intends to participate in providing some or all of the Public Benefits. Provided that Owner satisfies its Public Benefit obligations and is not in Material Default, Owner's Vested Right to complete the full development of the Project shall not be limited, diminished, or otherwise adversely affected by the failure of any other landowner or property to participate in providing the Public Benefits as anticipated by the City. Similarly, the City's obligations to Owner and the Property are independent of the City's obligations to any other property or landowner. Owner

acknowledges that the provisions of this paragraph shall not apply to any fee the amount of which is not controlled by the City, including but not limited to fees paid to the Capistrano Unified School District, the County of Orange, and/or any other government agency.

9.4 Affordable Housing Obligations. Owner recognizes the policy stated in the Housing Element of the Aliso Viejo General Plan to encourage the provision of affordable housing in new development. Owner agrees to satisfy its obligation to provide for affordable housing by constructing at least three (3) units restricted to Very Low Income Households. All affordable housing Units must be developed on-site at the Property. The affordable Units shall be constructed concurrently with the market Units.

Owner shall enter into a Density Bonus Housing Agreement with the City, in the form attached hereto as Exhibit "D", which shall set forth the terms, conditions, and restrictions governing the development, affordability, and occupancy of the affordable housing Units. Execution of the Density Bonus Housing Agreement shall be completed prior to the issuance of any building permit for the Project. The City shall have no obligation to issue any building permit for the Project until the fully executed Density Bonus Housing Agreement has been submitted to and accepted by the City. Any delay in the issuance of building permits resulting from the Owner's failure to timely submit the executed agreement shall be solely the responsibility of the Owner.

10. ANNUAL REVIEW.

10.1 Timing of Annual Review. Pursuant to Government Code Section 65865.1, at least once during every twelve (12) month period of the Term, City shall review the good faith compliance of Owner with the terms of this Agreement ("Annual Review").

10.2 Standards for Annual Review. During the Annual Review, Owner shall be required to demonstrate good faith compliance with the terms of this Agreement. "Good faith compliance" shall be established if Owner is in compliance with every term and condition of this Agreement. If the City Council or its designee finds and determines, based on substantial evidence, that Owner is not in good faith compliance, then City may proceed in accordance with Section 12 pertaining to the potential Default of Owner and the opportunities for cure. Owner shall pay a reasonable fee to cover the costs incurred by City (*i.e*., staff time and necessary consultant costs) in connection with the Annual Review.

10.3 Procedures for Annual Review. The Annual Review shall be conducted by the City Council or its designee. Owner shall be given a minimum of thirty (30) days' notice of any date scheduled for an Annual Review. Owner shall not be limited in the information it presents to the City Council for the Annual

Review and may, if needed, provide information to the City Council in the first instance at the City Council hearing on the Annual Review. Should the City Council designate a party other than itself to conduct the Annual Review, these same notice and procedural requirements shall apply to the conduct by the designee of the Annual Review.

11. THIRD PARTY LITIGATION.

11.1 General Plan Litigation. City has determined that this Agreement is consistent with its General Plan. Owner has reviewed the General Plan and concurs with City's determination. Neither Owner nor City shall have any liability under this Agreement or otherwise for any failure of City to perform under this Agreement, or for the inability of Owner to develop the Property as contemplated by the Development Plan or this Agreement, if such failure or inability is the result of a judicial determination that part or all of the General Plan is invalid, inadequate, or not in compliance with law.

11.2 Third Party Litigation Concerning Agreement. Owner shall, at Owner's expense (including attorneys' fees), defend, indemnify, and hold City, its officials, officers, employees and independent contractors engaged in project planning or implementation, harmless from any third-party claim, action or proceeding against City, its agents, officials, officers or employees to attack, set aside, void, or annul the approval of this Agreement. City shall promptly notify Owner of any such claim, action or proceeding, and City shall cooperate in the defense at Owner's cost. City may in its discretion participate in the defense of any such claim, action or proceeding at City's cost. Owner reserves the right to withdraw its application for the Project or request that City revoke or rescind Project approvals in the event of third party litigation. If Owner requests such application withdrawal or Project revocation or rescission, Owner shall also pay City's costs related to processing those requests and bringing them to City Council for hearing. Notwithstanding the foregoing, Owner shall continue to pay for any and all litigation costs until such litigation has been resolved by a Court (*i.e*., obtaining a dismissal of the case), unless City expressly notifies Owner in writing that City wishes to continue to litigate the matter by itself, in which case City may in its discretion proceed at City's cost.

11.3 Indemnity. In addition to the provisions of Section 11.2, Owner shall indemnify and hold City, its officials, officers, agents, employees and independent contractors, engaged in project planning or implementation, free and harmless from any third-party liability or claims based or alleged upon any act or omission of Owner, its officers, agents, employees, subcontractors and independent contractors, for property damage, bodily injury or death (Owner's employees included) or any other element of damage of any kind or nature, relating to or arising from development of the Project, except for claims for damages arising through active negligence or willful misconduct of City, its officials, officers, agents, employees and

independent contractors. Owner shall defend, at Owner's expense, including attorneys' fees, City, its officials, officers, agents, employees and independent contractors in any legal action based upon such alleged acts or omissions of Owner. City may in its discretion participate in the defense of any such legal claim, action, or proceeding at City's cost.

11.4 Environmental Contamination. Owner shall indemnify and hold City, its officers, agents, and employees free and harmless from any liability, based or alleged, upon any act or omission of Owner, its officers, agents, employees, subcontractors, predecessors in interest, successors, assigns, and independent contractors, resulting in any violation of any federal, state or local law, ordinance or regulation relating to industrial hygiene or to environmental conditions on, under, or about the Property, including, but not limited to, soil and groundwater conditions, and Owner shall defend, at its expense, including attorneys' fees, City, its officials, officers, agents and employees in any action based or asserted upon any such alleged act or omission. City may in its discretion participate in the defense of any such claim, action, or proceeding. Notwithstanding anything to the contrary set forth in this Section, Owner shall not be responsible for clean-up and removal of groundwater contamination migrating to or from an adjacent property not owned by Owner.

11.5 City to Reasonably Approve Counsel; Conduct of Litigation. With respect to Sections 11.2 through 11.4, City reserves the right to reasonably approve the attorney(s) that Owner selects, hires, or otherwise engages to defend City, which approval shall not be unreasonably withheld or delayed To the extent that Owner withdraws its Project application or requests that the City rescind or repeal Project approvals, City reserves the right to reduce or abandon its defense of any litigation.

11.6 Processing During Third Party Litigation. The filing of any third party lawsuit(s) against City or Owner relating to this Agreement, the General Plan, any Development Approvals, including Subsequent Development Approvals, or other development issues affecting the Property shall not delay or stop the development, processing, or construction of the Project, approval of Subsequent Development Approvals, or issuance of "Ministerial Approvals," unless the third party obtains a court order preventing the activity or invalidating this Agreement or any provision thereof. City shall not stipulate to the issuance of any such order without Owner's prior written consent. For purposes of this Section, the term "Ministerial Approvals" shall mean the issuance of approvals or permits requiring the determination of conformance with Land Use Regulations and Development Approvals, including, without limitation, site plans, site development permits, area plans, design review, development plans, land use plans, grading plans, improvement plans, building plans and specifications, ministerial issuance or approval of one or more final maps, zoning clearances, grading permits, improvement permits, stormwater management plans, wall permits, building

permits, lot line adjustments, conditional and temporary use permits, certificates of use and occupancy, approvals, entitlements, and related matters as may be necessary for the completion of the Project.

11.7 Survival. The provisions of Sections 11.1 through 11.7 inclusive, shall survive the termination, cancellation, or expiration of this Agreement.

12. DEFAULTS AND REMEDIES.

12.1 Major Default Defined. A Major Default, as defined in Section 5.24 of this Agreement, may establish cause for early termination of this Agreement. This provision does not limit the right of either Party to pursue other non-termination remedies permitted by this Section 12 for Minor Defaults.

12.2 Notice and Termination. Before either Party may declare a Major Default or termination of this Agreement or bring a legal action to terminate this Agreement, the procedures of this Section must be followed. In the case of a Major Default arising from the conduct of an Annual Review, the procedures of this Section shall be strictly followed and shall constitute a second and independent review of the good faith compliance of Owner.

The Party asserting a Default (the "Non-Defaulting Party") may elect to do so by providing written notice to the Party alleged to be in Default (the "Defaulting Party") setting forth the nature of the Default and the actions, if any, required by the Defaulting Party to cure the Default. The Defaulting Party shall be deemed in Default if the Defaulting Party fails to cure the Default within thirty (30) business days after the date of such notice (for monetary defaults) or within sixty business (60) days after the date of such notice (for non-monetary defaults) ("cure periods"). If the nature of the alleged Default is such that it cannot reasonably be cured within the applicable cure period, the Defaulting Party shall not be deemed to be in Default if it has commenced efforts to cure the Default within the applicable cure period and continues to diligently pursue completion of the cure.

12.3 Default Remedies. A Party who complies with the notice of Default and opportunity to cure requirements of Section 12.2 may, at its option, institute legal action to cure, correct, or remedy the alleged Default, enjoin any threatened or attempted violation, enforce the terms of this Agreement by specific performance, or pursue any other legal or equitable remedy. These remedies shall be cumulative rather than exclusive, except as otherwise provided by law.

Furthermore, the City, after first following the procedures set forth in Section 12.2, may give notice of its intent to terminate or modify this Agreement for an uncured Major Default, in which event the matter shall be scheduled for consideration and review by the City Council, using the notice and procedure provisions set forth in Section 10.3 for an Annual Review. The

"preponderance of evidence" standard of review set forth in Section 12.4, however, shall be employed rather than the "substantial evidence" standard set forth in Section 10.2.

12.4 Standard of Review. Any determination by City that Owner is in Default shall be based on the preponderance of evidence before the City. In any legal action by Owner challenging the City's determination of Default, the court shall conduct a de novo review of Owner's compliance based on the administrative record and determine if the preponderance of evidence supports the City's determination.

12.5 Owner's and City's Exclusive Remedy. City and Owner acknowledge that neither City nor Owner would have entered into this Agreement if it were to be liable in damages under or with respect to all or any part of the Development Plan. Accordingly, except as stated below, neither Party shall sue the other for damages or monetary relief for any matter related to the Development Plan. City may, however, sue Owner for the payment of sums due from Owner to City under provisions of this Agreement which are expressly stated to survive termination of this Agreement. With these exceptions, Owner's and City's litigation remedies shall be limited to declaratory and injunctive relief, mandate, and specific performance.

12.6 Waiver; Remedies Cumulative. All waivers of performance must be in a writing signed by the Party granting the waiver. There are no implied waivers. Failure by City or Owner to insist upon the strict performance of any provision of this Agreement, irrespective of the length of time for which such failure continues, shall not constitute a waiver of the right to demand strict compliance with this Agreement in the future.

A written waiver affects only the specific matter waived and defines the performance waived and the duration of the waiver. Unless expressly stated in a written waiver, future performance of the same or any other condition is not waived.

A Party who complies with the notice of Default and opportunity to cure requirements of Section 12.2, where applicable, and elects to pursue a legal or equitable remedy available under this Agreement does not waive its right to pursue any other remedy available under this Agreement, unless prohibited by statute, court rules, or judicial precedent.

Delays, tolling, and other actions arising under Section 14.10 shall not be considered waivers subject to this Section 12.6.

12.7 Alternative Dispute Resolution. Any dispute between the Parties may, upon the mutual agreement of the Parties, be submitted to mediation, binding arbitration, or any other mutually agreeable form of alternative dispute resolution. While an alternative dispute process is pending, the statute of

limitation shall be tolled for any claim or cause of action which either of the Parties may have against the other.

13. ENCUMBRANCES, ASSIGNMENTS, AND RELEASES.

13.1 Discretion to Encumber. This Agreement shall not prevent or limit Owner, in any manner, at Owner's sole discretion, from encumbering some or all of the Property or any improvement on the Property by any mortgage, deed of trust, or other security device to secure financing related to the Property or the Project.

13.2 Mortgagee Protection. City acknowledges that the Lender(s) providing financing secured by the Property and/or its improvements may require certain Agreement interpretations and modifications. City shall, at any time requested by Owner or the lender, meet with Owner and representatives of such lender(s) to negotiate in good faith any such interpretation or modification. City will not unreasonably withhold or delay its consent to any requested interpretation or modification provided such interpretation or modification is consistent with the intent and purposes of this Agreement. Any Mortgagee of the Property shall be entitled to the following rights and privileges:

13.2.1 Neither entering into this Agreement nor a breach of this Agreement shall defeat, render invalid, diminish, or impair the lien of any mortgage or deed of trust on the Property made in good faith and for value.

13.2.2 If City timely receives a request from a Mortgagee requesting a copy of any notice of Default given to Owner under the terms of this Agreement, City shall provide a copy of that notice to the Mortgagee within ten (10) days of sending the notice of Default to Owner. The Mortgagee shall have the right, but not the obligation, to cure the Default during the remaining cure period allowed Owner under Section 12.2 of this Agreement.

13.2.3 Except as otherwise provided within this Agreement, any Mortgagee who comes into possession of some or all of the Property pursuant to foreclosure of a mortgage or deed of trust, or deed in lieu of such foreclosure or otherwise, shall:

13.2.3.1 Take that property subject to the terms of this Agreement and as Owner's successor;

13.2.3.2 Have the rights and obligations of an Assignee as set forth in Sections 13.3 and 13.4;

13.2.3.3 Have the right to rely on the provisions of Section 8 of this Agreement, provided that any development

proposed by the Mortgagee is in substantial conformance with the terms of this Agreement; and

13.2.3.4 Not be liable for any defaults, whether material or immaterial, or monetary obligations of Owner arising prior to acquisition of title to the Property by the Mortgagee, except that the Mortgagee may not pursue development pursuant to this Agreement until all delinquent and current fees and other monetary obligations due under this Agreement for the portions of the Property acquired by the Mortgagee have been paid to City.

13.3 Transfer or Assignment. Subject to Section 13.5, Owner shall have the right to sell, transfer, or assign its rights and obligations under this Agreement (collectively, an "Assignment") in connection with a transfer of Owner's interest in all, any portion of, or any interest in the Property (the "Transferred Property"). No Assignment shall be made unless made together with the sale, transfer, or assignment of all or any portion of Owner's interest in the Property.

Concurrent with any Assignment, Owner shall notify City in writing of the Assignment and shall provide City with an executed Assignment and Assumption Agreement, in a form substantially similar to Exhibit "E", executed by the purchaser, transferee, or assignee (collectively, the "Assignee") to expressly and unconditionally assume all duties and obligations of Owner under this Agreement remaining to be performed at the time of the Assignment. Any Assignment not made in strict compliance with the foregoing conditions shall constitute a default by Owner under this Agreement. Notwithstanding the failure of any Assignee to execute the agreement required herein this Subsection 13.3, the burdens of this Agreement shall be binding upon such Assignee, but the benefits of this Agreement shall not inure to such Assignee until and unless such agreement is executed.

13.4 Effect of Assignment. Subject to Section 13.5 and unless otherwise stated within the Assignment, upon an Assignment:

13.4.1 The Assignee shall be liable for the performance of all obligations of Owner with respect to Transferred Property, but shall have no obligations with respect to the portions of the Property, if any, not transferred (the "Retained Property").

13.4.2 The owner of the Retained Property shall be liable for the performance of all obligations of Owner with respect to the Retained Property, but shall have no further obligations with respect to the Transferred Property.

13.4.3 The Assignee's exercise, use, and enjoyment of the Transferred Property shall be subject to the terms of this Agreement to the same extent as if the Assignee were the Owner.

13.5 City's Consent. The City's consent shall not be required to a transfer between Owner and any other entity controlling, controlled by, or under common control with Owner, except an assignment and assumption agreement must be executed between the two entities in a form substantially conforming to Exhibit "E". Moreover, the City's consent shall not be required unless, at the time of the Assignment, Owner has been determined to be in Major Default pursuant to Section 12 and the Major Default has not been cured. If Owner is in Major Default, City shall consent to any Assignment which provides adequate security to City, in the reasonable exercise of City's discretion, to guarantee the cure of the Major Default upon completion of the Assignment.

14. MISCELLANEOUS PROVISIONS.

14.1 Rules of Construction. The singular includes the plural; the masculine gender includes the feminine; "shall" is mandatory; "may" is permissive.

14.2 Entire Agreement. This Agreement constitutes the entire understanding and agreement of City and Owner with respect to the matters set forth in this Agreement. This Agreement supersedes all negotiations or previous agreements between City and Owner respecting the subject matter of this Agreement including, without limitation, the Original City Agreement.

14.3 Recorded Statement Upon Termination. Upon the completion of performance of this Agreement or its cancellation or termination, a statement evidencing completion, cancellation, or termination signed by the appropriate agents of City, shall be recorded in the Official Records of Orange County, California.

14.4 Project as a Private Undertaking. It is specifically understood by City and Owner that (i) the Project is a private development; (ii) City has no interest in or responsibilities for or duty to third parties concerning any improvements to the Property unless City accepts the improvements pursuant to the provisions of this Agreement or in connection with subdivision map approvals; and (iii) Owner shall have the full power and exclusive control of the Property, subject to the obligations of Owner set forth in this Agreement.

14.5 Incorporation of Recitals. Each of the Recitals set forth at the beginning of this Agreement are part of this Agreement.

14.6 Captions. The captions of this Agreement are for convenience and reference only and shall not define, explain, modify, construe, limit, amplify,

or aid in the interpretation, construction, or meaning of any of the provisions of this Agreement.

14.7 Consent. Where the consent or approval of City or Owner is needed to implement Development under this Agreement, the consent or approval shall not be unreasonably withheld, delayed, or conditioned.

14.8 Covenant of Cooperation. City and Owner shall cooperate and deal with each other in good faith and assist each other in the performance of the provisions of this Agreement.

14.9 Execution and Recording. The City Clerk shall cause a copy of this Agreement to be signed by the appropriate representatives of the City and recorded with the Office of the County Recorder of Orange County, California, within six months following the effective date of Ordinance No. _____, the ordinance adopting this Agreement, or prior to building permit issuance, whichever comes first. The failure of the City to sign and/or record this Agreement shall not affect the validity of and binding obligations set forth within this Agreement.

14.10 Delay for Events Beyond the Parties' Control. Performance by either Party of its obligations under this Agreement shall be excused, and the Term shall be extended, for periods equal to the time during which (1) litigation is pending which challenges any matter, including compliance with CEQA or any other local, state, or federal law, related in any way to the approval or implementation of all or any part of the Development Plan. Any such extension shall be equal to the time between the filing of litigation, on the one hand, and the entry of final judgment or dismissal, on the other. All such extensions shall be cumulative; (2) any application by Owner for state or federal regulatory permits and/or approvals required for the Project has been pending more than one year after its submittal; or (3) a delay is caused by reason of any event beyond the control of City or Owner which prevents or delays performance by City or Owner of obligations under this Agreement. Such events shall include, by way of example and not limitation, acts of nature, enactment of new conflicting federal or state laws or regulations (example: listing of a species as threatened or endangered), judicial actions such as the issuance of restraining orders and injunctions, delay in the issuance of bonds or formation of any Financing Districts, and riots, strikes, or damage to work in process by reason of fire, mud, rain, floods, earthquake, or other such casualties.

If City or Owner seeks excuse from performance, it shall provide written notice of such delay to the other within thirty (30) days of the commencement of such delay. If the delay or default, whether material or immaterial, is beyond the control of City or Owner it shall be excused, and an extension of time for such cause shall be granted in writing for the period of the enforced delay, or longer as may be mutually agreed upon. Any

disagreement between the Parties with respect to whether this Section 14.10 applies to a particular delay or default is subject to the filing by either Party of an action for judicial review of the matter, including requests for declaratory and/or injunctive relief.

14.11 Interpretation and Governing Law. In any dispute regarding this Agreement, the Agreement shall be governed and interpreted in accordance with the laws of the State of California. Venue for any litigation concerning this Agreement shall be in Orange County, California.

14.12 Time of Essence. Time is of the essence in the performance of the provisions of this Agreement as to which time is an element.

14.13 Estoppel Certificate. Within ten (10) business days following a written request by either of the Parties, the other Party shall execute and deliver to the requesting Party a statement certifying that (i) either this Agreement is unmodified and in full force and effect or there have been specified (date and nature) modifications to the Agreement, but it remains in full force and effect as modified; and (ii) either there are no known current uncured Major Defaults under this Agreement or that the responding Party alleges that specified (date and nature) Major Defaults exist. The statement shall also provide any other reasonable information requested. The failure to timely deliver this statement shall constitute a conclusive presumption that this Agreement is in full force and effect without modification, except as may be represented by the requesting Party and that there are no uncured Major Defaults in the performance of the requesting Party, except as may be represented by the requesting Party. Owner shall pay to City all reasonable administrative costs incurred by City in connection with the issuance of estoppel certificates under this Section 14.13 prior to City's issuance of such certificates.

14.14 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and assigns.

14.15 Future Litigation Expenses.

14.15.1 Payment to Prevailing Party. If either Party brings a legal or equitable proceeding against the other Party which arises in any way out of this Agreement, the prevailing Party shall be entitled to recover its reasonable attorneys' fees and all other reasonable costs and expenses incurred in that proceeding.

14.15.2 Scope of Fees. Attorneys' fees under this Section shall include attorneys' fees on any appeal and in any post-judgment proceedings to collect or enforce the judgment. The provisions in 14.15.1 through 14.15.3 are separate and several and shall survive the termination of this Agreement.

14.15.3 Limitation of Liability. Owner's obligations under this Agreement are solely those of Owner. In no event shall any present, past or future officer, director, shareholder, member, employee, partner, affiliate, manager, representative or agent of Owner (a "Related Party") have any personal liability, directly or indirectly, under this Agreement. Recourse in any way connected with or arising from this Agreement shall not be available against any Related Party.

Owner and City have executed this Agreement on the dates set forth below.

CITY	OWNER
City of Aliso Viejo	_____a limited-liability company
By:_____ Tiffany Ackley Mayor	By: _____ Its:
Date:	Date:
ATTEST:	OWNER:
By: _____ City Clerk	By: _____
APPROVED AS TO FORM:	Date:
By:_____ Scott C. Smith City Attorney	By: _____ Name: Title:

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of_____)

On _____ before me, _____
(insert name and title of the officer)

personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____(Seal)

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of_____)

On _____ before me, _____
(insert name and title of the officer)

personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____(Seal)

EXHIBIT "A"
LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF ALISO VIEJO, IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

PARCEL 1 OF PARCEL MAP 85-158, IN THE UNINCORPORATED AREA OF ORANGE COUNTY, STATE OF CALIFORNIA, FILED IN BOOK 218, PAGES 27 THROUGH 30 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO OIL, GAS, AND OTHER HYDROCARBON AND MINERAL SUBSTANCES LYING UNDER OR THAT MAY BE PRODUCED FROM THE ABOVE DESCRIBED LAND, TOGETHER WITH ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO THE PROCEEDS THEREFROM AND ONE HUNDRED PERCENT (100%) OF ALL RENTS, BONUSES, AND PROFITS ACCRUING THEREFROM, WITHOUT, HOWEVER, ANY RIGHTS INCLUDING RIGHTS OF ENTRY IN OR WITH RESPECT TO ANY PORTION OF THE SURFACE OR SUBSURFACE TO A VERTICAL DEPTH OF 500 FEET FROM THE SURFACE AS THE SAME MAY FROM TIME TO TIME EXIST, AS RESERVED BY DEEDS FROM LLOYDS BANK OF CALIFORNIA, FORMERLY FIRST WESTERN BANK AND TRUST COMPANY, A CORPORATION, SUCCESSOR TO FIRST NATIONAL BANK IN SANTA ANA, A CORPORATION, RECORDED SEPTEMBER 30, 1976, IN BOOK 11908, PAGES 573 AND IN BOOK 11908, PAGE 582, BOTH OF OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA.

PARCEL B:
NON-EXCLUSIVE EASEMENTS FOR ACCESS, INGRESS, EGRESS, MAINTENANCE, REPAIR AND FOR OTHER PURPOSES, ALL AS DESCRIBED IN THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR ALISO VIEJO COMMUNITY ASSOCIATION RECORDED APRIL 6, 1982, AS INSTRUMENT NO. 82-118353 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA; THE NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR PACIFIC PARK BUSINESS CENTER 1 (DELEGATE DISTRICT NO. 14) OF ALISO VIEJO COMMUNITY ASSOCIATION, RECORDED APRIL 13, 1987, AS INSTRUMENT NO. 87-201111 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA, AS AMENDED BY THE FIRST CERTIFICATE OF AMENDMENT OF NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS, PACIFIC PARK BUSINESS CENTER 1 (TERRACE A) RECORDED SEPTEMBER 4, 1987, AS INSTRUMENT NO. 87-505204 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA.

APN: 623-091-01

EXHIBIT "B"
GENERAL PLAN AMENDMENT
GPA-2025-00002

Property Location – 95 Argonaut (see red-circled area below)
Existing Land Use Designation – Business Park ("BP")
Proposed Land Use Designation – High Density Residential (Max. 50 units/acre) ("HDR")

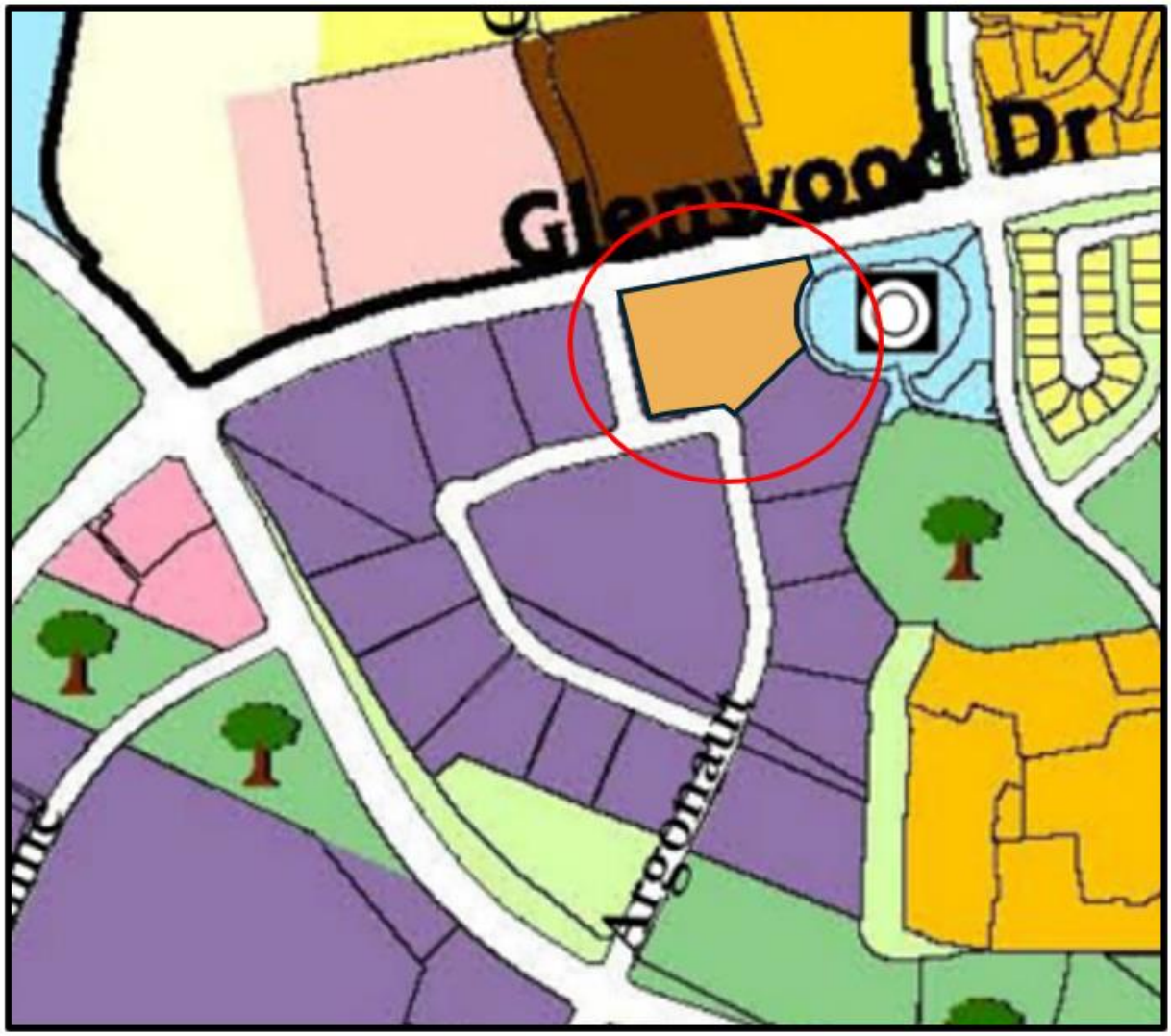


EXHIBIT "C"
PUBLIC BENEFITS

In addition to complying with the Project conditions of approval, Owner has committed by this Agreement to contribute to the City for, among other things, the development of certain "Public Benefits." Owner shall make contributions to the City, as follows:
Or

1. City Fiscal Impact Fee. Owner shall pay a one-time City Fiscal Impact Fee in the amount of Two Hundred Thirteen Thousand, Eight Hundred and Fifty Dollars ($213,850). Because this fee is an obligation arising from a Development Agreement, it is not subject to the Mitigation Fee Act. This Agreement does not limit the purposes for which the City may use City Fiscal Impact Fees, and the use and timing of such use of City Fiscal Impact Fees shall be entirely within the City's discretion.

2. Parks. Owner shall pay one-time park in-lieu fee under the Quimby Act and/or Aliso Viejo Municipal Code Chapter 14.16 in the amount of Eight Hundred Twenty Four Thousand Eight Hundred and Two Dollars ($824,802) that is required of the Owner as subdivider. The Parties agree that City's use of the park in-lieu fee for the development and rehabilitation of City recreational facilities, including but not limited to, AV Ranch, Aliso Viejo Aquatic Center, and Iglesia Park shall be deemed to serve the residents of the Property and Project area. City shall have sole discretion on the use of, and the timing of the use of the park in-lieu fees for park and recreation purposes.

Payment of the full City Fiscal Impact Fee and Park in-lieu fee amounts shall be made to the City prior to the issuance of any building permit for the Project. No building permit shall be issued until the City has received the full payments and has confirmed compliance with all applicable fee requirements. The City shall have no obligation to issue any building permit until and unless such payments and in-lieu fees are received in full, and any delay resulting from non-payment shall be solely the responsibility of the Owner.

EXHIBIT "D"
DENSITY BONUS HOUSING AGREEMENT

EXHIBIT "E"
ASSIGNMENT AND ASSUMPTION AGREEMENT

ASSIGNMENT AND ASSUMPTION OF DEVELOPMENT AGREEMENT BETWEEN CITY OF ALISO VIEJO AND _____, WHICH WILL DO BUSINESS IN CALIFORNIA AS _____.,

THIS ASSIGNMENT AND ASSUMPTION OF DEVELOPMENT AGREEMENT BETWEEN CITY OF ALISO VIEJO AND _____ WHICH WILL DO BUSINESS IN CALIFORNIA AS _____.**("Assignment")** is made as of the ___ day of _____, 2025 (**"Effective Date"**), by and among [ENTITY] ("[ENTITY]") a [LEGAL DESIGNATION] and _____ ("**Assignee**") with reference to the following facts:

RECITALS

A. [ENTITY] has entered into that certain Development Agreement, dated _____, 2025, by and between the City of Aliso Viejo ("**City**"), on the one hand, and [ENTITY], on the other hand ("**Agreement"**) for certain real property consisting of approximately 2.85 acres of land located in the City, more particularly described in Exhibit "A" ("**Property**").

B. [ENTITY] desires to assign and delegate, and Assignee desires to accept and assume, all of [ENTITY'S] rights and obligations under the Agreement in accordance with the terms and conditions set forth herein.

C. City has approved the Assignment in accordance with the terms and conditions set forth herein and in the Agreement.

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [ENTITY] and Assignee do hereby agree as follows:

1. Assignment and Assumption. Effective as of the Effective Date, [ENTITY] hereby assigns, transfers, and conveys to Assignee all of [ENTITY'S] rights, interest, duties, liabilities, and obligations in, to, and under the Agreement, and Assignee hereby accepts and assumes all such rights, interests, duties, liabilities, and obligations under the Agreement from [ENTITY] for [the Property or a portion of the Property] ("Assigned Property") [, except to the extent [ENTITY] has retained a portion of the Property (the "Retained Property")].

2. City Consent to Assignment. Effective as of the Effective Date, City hereby consents to the Assignment and hereby fully releases and forever discharges [ENTITY] from any and all obligations to City under the Agreement for the Assigned Property, [except [ENTITY'S] obligations with respect to the Retained Property].

3. Entire Agreement. This Agreement represents the final and entire agreement between the parties in connection with the subject matter hereof, and may not be modified except by a written agreement signed by both [ENTITY] and Assignee.

4. Governing Law. This Agreement has been prepared, negotiated, and executed in, and shall be construed in accordance with, the laws of the State of California, without regard to conflict of law rules.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

[ENTITY]**:**

[ENTITY]
a [LEGAL DESIGNATION]

By: _____
Name:
Its:

Assignee:

_____
_____

By: _____
Name:
Its:

City:

City of Aliso Viejo,
a California Municipal Corporation

By: _____
Name: Mitzi Ortiz
Its: City Manager

RECORDING REQUESTED BY:

AND WHEN RECORDED MAIL TO:

City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656-5335
Attn: City Manager

Free Recording pursuant to
Government Code 6103 & 27383

DENSITY BONUS HOUSING AGREEMENT

(PROJECT NAME/ADDRESS)

This DENSITY BONUS HOUSING AGREEMENT ("**Agreement**"), is made and entered into this [date], by and between the City of Aliso Viejo ("**City**"), a California municipal corporation, and **[NAME AND ENTITY TYPE OF THE ENTITY THAT ACQUIRES TITLE TO THE PROJECT AT THE PENDING CLOSING TO BE INSERTED]** ("**Developer**"). City and Developer are sometimes referred to collectively as the "**Parties**" and individually as a "**Party**."

RECITALS

A. Developer owns that certain real property located within the Aliso Viejo, County of Orange, State of California, commonly known as 95 Argonaut, Aliso Viejo, CA 92656 (APN 623-091-01) and more particularly described in the legal description attached as Exhibit A and more particularly depicted in Exhibit B ("**Property**").

B. Developer is proposing construction of 61 units on the Property, with related amenities and improvements, as further set forth in [resolution/entitlement] approving the project ("**Project**").

C. The Project qualifies for a density bonus and/or certain concessions, incentives, and waivers under California Government Code section 65915 *et seq*. ("**State Density Bonus Law**"). Under the State Density Bonus Law, the Project is proposing a total number of three (3) residential units restricted for sale to Very Low Income Households, as set forth in this Agreement.

D. In accordance with State Density Bonus Law, Developer has requested, and City has granted, certain concessions, incentives, and waivers more particularly set forth herein.

E. This Agreement and the attached exhibits set forth the terms and conditions for implementing the Project's requirement to provide affordable housing units in exchange for receiving the concessions, incentives and waivers, as set forth herein.

NOW, THEREFORE, in consideration of the above recitals, which are incorporated herein by this reference, and of the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. DEFINITIONS AND EXHIBITS

1.1 Definitions. In addition to the terms that may be defined elsewhere in this Agreement, the following terms when used in this Agreement shall be defined as follows:

1.1.1 "**Adjusted for family size appropriate to the unit**" has the meaning provided in California Health and Safety Code section 50052.5(h).

1.1.2 "**Affordable Housing Cost**" means the purchase price which would result in a Monthly Housing Cost which does not exceed the price authorized for a Very Low Income Household pursuant to Health and Safety Code section 50052.5(b) and any implementing regulations published by HCD, including 25 C.C.R. section 6924, as applicable.

1.1.3 "**Affordable Unit**" means individually, and "Affordable Units" means collectively, the three (3) dwelling units within the Project to be sold by Developer to Eligible Households in accordance with this Agreement.

1.1.4 "**AMI**" means the Orange County, California, area median income, adjusted for family size appropriate to the unit pursuant to California Health and Safety Code section 50052.5(h), as periodically published by HCD.

1.1.5 "**City**" means the City of Aliso Viejo, California.

1.1.6 "**City Attorney**" means the City Attorney for the City.

1.1.7 "**City Council**" means the City Council of the City.

1.1.8 "**City Deed of Trust**" means a Deed of Trust and Security Agreement executed by a Qualified Purchaser and recorded as a lien against the Affordable Unit acquired by that Qualified Purchaser as required by the terms of the Equity Sharing Agreement, the form of which is attached to the Equity Sharing Agreement.

1.1.9 "**City Manager**" means the City Manager for the City.

1.1.10 "**Developer**" means **[NAME AND ENTITY TYPE OF THE ENTITY THAT ACQUIRES TITLE TO THE PROJECT AT THE PENDING CLOSING TO BE INSERTED]**, and its successors and assigns to all or any part of the Property, the Project, or this Agreement (but not homebuyers of the Units).

1.1.11 "**Effective Date**" means the date that City executes this Agreement, and then on, this Agreement shall be in full force and effect.

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1.1.12 "**Equity Sharing Agreement**" means that certain Owner Occupancy and Equity Sharing Agreement to be entered into by and between City and each Qualified Purchaser that purchases an Affordable Unit, which shall be recorded against each Affordable Unit in the form attached hereto as Exhibit C.

1.1.13 "**HCD**" means the California Department of Housing and Community Development.

1.1.14 "**Household**" means all persons residing in a Unit.

1.1.15 "**Income Verification Materials**" means those materials specified in Section 4.5 to verify the income of a proposed purchaser of an Affordable Unit.

1.1.16 "**Market Rate Units**" means the Units within the Project to be sold by Developer to a Household without restriction.

1.1.17 "**Project**" means that certain residential development as more particularly described in the Recitals above and Section 2 below.

1.1.18 "**Project Approvals**" means the Project's approved entitlements pursuant to [resolution(s)], and all terms and conditions stated therein. The Project Approvals include, but are not limited to, that certain Development Agreement dated January 21, 2025 between Developer and City governing the development of the Project on the Property.

1.1.19 "**Property**" means that certain real property more particularly described in the legal description in Exhibit A and improvements thereon.

1.1.20 "**Qualified Purchaser**" means a person or family who complies with all Income Verification Requirements and qualifies as a Very Low Income Household.

1.1.21 "**State Density Bonus Law**" means Government Code section 65915 *et seq*., as of the Effective Date.

1.1.22 "**Unit**" means a residential dwelling unit within the Project to be constructed by Developer pursuant to this Agreement. The Project contains a total of sixty one (61) Units, with three (3) Affordable Units and fifty eight (58) Market Rate Units.

1.1.23 "**Very Low Income Household**" means persons and families whose income does not exceed 50 percent of the AMI, adjusted for household size, as determined in accordance with California Health and Safety Code section 50105, and implementing regulations published by HCD.

1.2 Exhibits. The following documents are attached hereto and incorporated herein by this reference:

Exhibit "A" – Legal Description of Property

Exhibit "B" – Map Showing Property and its Location

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2. DEVELOPMENT OF THE PROPERTY

2.1 Project. Developer shall develop the Project on the Property in accordance with this Agreement and the Project Approvals.

2.2 No Increase in Density. Developer acknowledges and agrees that Developer has not requested, and the Project is not receiving, an increase in density under State Density Bonus Law.

2.3 Market Rate Units. The Project shall have no more than fifty-eight (58) Market Rate Units with unit sizes as may be determined by Developer in accordance with the Project Approvals. Developer may alter the unit distribution of the Market Rate Units in Developer's discretion, provided that the Project has the minimum number of Affordable Units and the minimum distribution thereof as specified in this Agreement.

2.4 Affordable Units. The Project shall have no less than three (3) Affordable Units pursuant to the terms and conditions of this Agreement. The Affordable Units shall be consistent in terms of type, design, and number of bedrooms with the Market Rate Unit types as depicted in the Project Approvals. The Affordable Units shall be located throughout the Project and not clustered in one area or building.

2.5 Minimum Development Standards for Affordable Units; Access and Restrictions. The Affordable Units shall be constructed with the same exterior appearance and standard interior features, fixtures, and amenities, and shall use the same type and quality of materials as provided for the Market Rate Units of the same model and size. City acknowledges that purchasers of Market Rate Units may elect to purchase optional upgrades and such optional upgrades may not be available for the Affordable Units. Except as otherwise authorized by City in writing, the Affordable Units shall be constructed concurrently with the Market Rate Units. The Affordable Units, and their occupants, shall have access to all common areas of the Project to the same extent as occupants of the Market Rate Units.

2.6 Development Concessions, Incentives, and Waivers. In accordance with State Density Bonus Law, the Project is hereby granted the following: one concession for reduced minimum perimeter setback up to 7' and waivers for reduced minimum boundary landscaping setback up to 7', and placement of mechanical units in front yard setbacks.

2.7 Parking Requirements. The Project's onsite parking shall be provided in compliance with Government Code sections 65915(p)(1)(A)-(B). The Project will provide 150 total onsite parking spaces.

2.8 No Further Concessions, Incentives, or Waivers. Developer acknowledges and agrees that the concessions, incentives, and waivers set forth in section 2.6 and section 2.7 above fully satisfy City's duty to grant a density bonus and any other incentive, concession, or waiver of any building, zoning, or other requirement in connection with a density bonus. By way of this Agreement, Developer releases any and all claims Developer may have against City in any way

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relating to or arising from any density bonus request for the Project other than those expressly set forth above.

2.9 Permits and Processing; Compliance with Laws. Developer, at its sole cost and expense, or as otherwise set forth in a separate written agreement, shall secure or cause to be secured any and all permits that may be required for development of the Project by City or any other federal, state, or local governmental entity having or claiming jurisdiction over the Property or Project. Upon securing any and all permits, Developer shall carry out and perform the development of the Project, or cause the performance of the development of the Project, in conformity with all applicable federal, state, and local laws and regulations, and all conditions of approval issued by City, including the Project Approvals.

2.10 [intentionally omitted due to inapplicability]

2.11 Mechanic's Liens; Indemnification. Prior to the closing of the sale of an Affordable Unit, Developer shall take all actions necessary to remove any future mechanic's liens or other similar liens (including design professional liens) against such Affordable Unit by reason of work, labor, services, or materials supplied or claimed to have been supplied to Developer or caused by, at the direction of, or on behalf of Developer. Prior to the recording of this Agreement pursuant to Section 3.1 below, Developer shall provide evidence from a reputable title company of any new recordings against the Property or Project. City hereby reserves all rights to post notices of non-responsibility and any other notices as may be appropriate upon a filing of a mechanic's lien. In addition to any other indemnity provided by Developer under this Agreement, Developer shall indemnify, defend (with counsel of Developer's choosing and reasonably approved by City), and hold harmless City and all of its officials, officers, employees, representatives, volunteers and agents from any and all alleged or actual claims, causes of action, liabilities, and damages from any third party by reason of a mechanic's lien or work, labor, services, or materials supplied or claimed to have been supplied to Developer or caused by, at the direction of, or on behalf of Developer.

3. RECORDING OF AGREEMENT

3.1 Recording. Prior to the issuance of any building permit for the Project, Developer shall record or shall cause to be recorded in the Official Records for Orange County, California, an executed original of this Agreement. City shall cooperate with Developer in promptly executing in recordable form this Agreement.

4. SALE OF UNITS

4.1 Conveyance of Units. Developer may convey title to the Units at any time after the Effective Date, in accordance with this Agreement and any and all federal, state, and local laws and regulations. Developer may offer to sell some or all Units in phases or all at once in Developer's discretion, provided Developer's sale complies with applicable federal, state, and local laws and regulations. Developer shall convey title to each Affordable Unit through a purchase and sale agreement to be serviced through an escrow. Upon City's request, Developer shall deliver to City a copy of the purchase and sale agreement and preliminary title report for the conveyance of an Affordable Unit.

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4.2 Notice to City. Developer shall provide City with no less than 60 days written notice prior to the date that Developer intends to commence activities to market, offer, or sell the Affordable Units.

4.3 Designation of Affordable Units. Prior to commencement of any activities to market, offer, or sell the Units, Developer shall designate the three (3) Units as Affordable Units. Developer's notice to City under Section 4.2 above shall disclose to City which Units Developer has designated as the Affordable Units.

4.4 Sale of Affordable Units. The sale price of each Affordable Unit shall be the Affordable Housing Cost. So that City may verify the amount is not more than the Affordable Housing Cost, Developer shall provide written notice to City of the sale price of each Affordable Unit prior to offering for sale the Affordable Unit. City verification shall be provided within 30 days of City's receipt of Developer's written notice of the proposed sale price. Developer shall sell each Affordable Unit only to those who qualify as a Qualified Purchaser, as determined pursuant to Sections 4.5 and 4.6. Developer shall not knowingly convey title to any Affordable Unit to a Household that does not qualify as a Very Low Income Household, and Developer shall not convey fee title to any Affordable Unit to a Very Low Income Household at a price that exceeds the Affordable Housing Cost for that Affordable Unit.

4.5 Income Verification. The proposed purchaser of an Affordable Unit shall provide and certify, for the purpose of City approval, the following information: the Social Security Number of the proposed purchaser; copies of the federal and state income tax returns filed by the proposed purchaser for the prior two calendar years; preceding six months of bank statements of the proposed purchaser; background documentation of any income (i.e. Social Security award letter, stock interest forms, court statement regarding support payments, retirement or pension benefit statement, etc.); copies of the two most current wage earning statements of the proposed purchaser; the purchase price that the proposed purchaser intends to pay for the Affordable Unit; and any other information that City may reasonably require to verify the income of the proposed purchaser. The proposed purchaser of an Affordable Unit shall also provide, for the purpose of City approval, a written statement signed by the proposed purchaser (in a form acceptable to City) that authorizes City to inspect, use, and rely on the information provided by the proposed purchaser, and waiving and releasing any right or claim that said proposed purchaser might otherwise have in the absence of such written authorization to maintain the privacy or confidentiality of such information. The information, statements, agreements, and other documents that a proposed purchaser is required to provide pursuant to this section 4.5 are collectively the "Income Verification Materials." Developer shall have the obligation to collect and compile all Income Verification Materials from a proposed purchaser of an Affordable Unit. Developer shall be responsible for working with the proposed purchaser to compile all required Income Verification Materials to be submitted to the City for approval, which may be accomplished by Developer contracting with a third-party consultant to provide such services.

4.6 City Verification. Developer shall not convey fee title to any Affordable Units to a proposed purchaser until such time as City has determined (i) the proposed purchaser intends to occupy the Affordable Unit as a principal residence; (ii) the proposed purchaser is a Very Low Income Household; (iii) the purchase price for the Affordable Unit does not exceed the Affordable Housing Cost; (iv) the proposed purchaser and City have executed the Equity Sharing Agreement

and City Deed of Trust, both in a recordable form; and (v) the proposed conveyance will not otherwise violate the terms and conditions of this Agreement. Developer shall reasonably cooperate with City in its determination of the matters set forth in clauses (i)-(v) herein and Developer shall be entitled to conclusively rely on any City determination regarding Developer's compliance with this Section 4.6. City shall respond to a request from Developer for verification of the matters in clauses (i)-(v) herein by written notice, which shall be delivered to Developer within 30 days of City's receipt of all Income Verification Materials for the proposed purchaser of the Affordable Unit. If City is unable to verify the proposed purchaser's income as provided herein, then the prospective purchaser's income shall be deemed to exceed the maximum allowable limit for a Very Low Income Household. If City determines a proposed conveyance would violate this Agreement, City shall specify the reasons for the violation. If the proposed violation is not corrected to the satisfaction of City within 30 days after the date of the notice specifying the violation, or within such further time as City determines in its sole and absolute discretion is necessary to correct said violation, Developer shall not convey title to the proposed purchaser. City may apply to a court of competent jurisdiction for specific performance of this Agreement, for a declaration that the proposed conveyance is void, or for any such relief as may be appropriate under law or equity.

4.7 Quality Standards for Affordable Units. At the time of conveyance of an Affordable Unit from Developer to a Qualified Purchaser, the physical condition and quality of the Affordable Unit shall be in the same physical condition and of the same quality (as to standard features, but not upgrades) as the other Market Rate Units of the same model and size that Developer has offered for sale.

4.8 Execution and Recording of Equity Sharing Agreement and City Deed of Trust. Prior to the close of escrow for each Affordable Unit, Developer shall coordinate the execution of the Equity Sharing Agreement by the City and the purchaser of the Affordable Unit and the execution of the City Deed of Trust by the purchaser of the Affordable Unit, with the Equity Sharing Agreement and City Deed of Trust executed in a recordable form. At the close of escrow, the escrow agent handing such close of escrow shall record or cause to be recorded the instruments effectuating the conveyance of the Affordable Unit in the Official Records for Orange County in the following order: (i) the grant deed conveying title to the Qualified Purchaser, (ii) the Equity Sharing Agreement, (iii) the City Deed of Trust, and (iv) any other required documents. Upon the date of recording, the terms and conditions of the Equity Sharing Agreement and the City Deed of Trust shall be binding upon and run with the Affordable Unit. City shall cooperate with Developer and each Qualified Purchaser to execute the Equity Sharing Agreement and City Deed of Trust and the attachments thereto for each Affordable Unit so that the Equity Sharing Agreement and City Deed of Trust may be recorded at the close of escrow for that particular Affordable Unit.

4.9 Sale of Units; Indemnification. In addition to any other indemnification provided in this Agreement, Developer shall indemnify, defend (with counsel of Developer's choosing and reasonably approved by City), and hold harmless City and its officials, officers, employees, representatives, agents, and volunteers (collectively, "Indemnitees") from and against any claims, liabilities, damages, or losses alleged or made against Indemnitees by any person or entity for any alleged or actual violation by Developer of any federal, state, or local law or regulation in connection with the sale by Developer of the Units or otherwise arising from any act or omission of Developer in violation of this Section 4, except in each instance to the extent caused by the

gross negligence or willful misconduct of any of the Indemnitees or caused by Developer's compliance with the express requirements of this Agreement.

4.10 Qualified Purchaser Marketing and Orientation. Developer shall be responsible for marketing the Affordable Units to potential Qualified Purchasers. Developer shall coordinate with designated City staff for the marketing plan of any Affordable Units. As part of the marketing plan, and in no event later than the close of escrow of an Affordable Unit, City shall provide to the Qualified Purchaser of the Affordable Unit an in-person, informational session that will explain, in plain and simple language, the resale restrictions and other provisions of the Equity Sharing Agreement. Upon completion of the informational session, City shall cause the Qualified Purchaser to execute an agreement, in a form approved by City, acknowledging the Qualified Purchaser's attendance at the informational session and providing for the Qualified Purchaser's waiver and release of Developer and City from any claims or causes of action related to the restrictions on the marketability of the Affordable Unit, provided that the Qualified Purchaser represents that he or she understands the restrictions on marketability.

4.11 Transfer to Qualified Nonprofit Housing Corporation. If, despite bona fide good faith documented marketing efforts, Developer is unable to locate a Qualifying Household to purchase an Affordable Unit within one hundred eighty (180) calendar days after the issuance of a certificate of occupancy for such Affordable Unit, Developer may sell or otherwise transfer such Affordable Unit to a qualified nonprofit housing corporation that meets all of the requirements set forth in Government Code section 65915(c)(2)(A)(ii) and any other applicable provisions of state law, which sale or transfer shall satisfy the requirements of this Agreement applicable to Developer.

5. TERM

5.1 Term. The term of this Agreement commences on the Effective Date and will continue until all of the Affordable Units have been conveyed to Very Low Income Households pursuant to this Agreement and each Qualified Purchaser has entered into an Equity Sharing Agreement with City, which has been executed by both City and the Qualified Purchaser, each Qualified Purchaser has executed a City Deed of Trust in favor of City, and all of the Equity Sharing Agreements and City Deeds of Trust for all Affordable Units have been recorded. Developer shall provide, upon City's request, evidence that Equity Sharing Agreements and Deeds of Trust have been recorded for all of the Affordable Units. Each and every Qualified Purchaser of an Affordable Unit, however, shall continue to be bound by the restrictions set forth in this Agreement despite the termination of this Agreement, and said Qualified Purchaser shall be bound by the terms and conditions of the Equity Sharing Agreement and City Deed of Trust.

6. DEFAULT AND TERMINATION; INDEMNIFICATION

6.1 Default. Failure or delay by any Party to perform any term or provision of this Agreement that is not cured within 30 days after receipt of notice from the other Party specifying the default (or such other period specifically provided herein) constitutes a default under this Agreement; provided, however, if such default is of the nature requiring more than 30 days to cure, the defaulting Party shall avoid default hereunder by commencing to cure within such 30 day period, and thereafter diligently pursuing such cure to completion within an additional 60 days

following the conclusion of such thirty 30 day period (for a total of 90 days). Except as required to protect against further damages, the injured Party may not institute proceedings against the Party in default until the time for cure has expired. Failure or delay in giving such notice shall not constitute a waiver of any default, nor shall it change the time of default.

6.2 Rights and Remedies Cumulative. The rights and remedies of the Parties are cumulative, and the exercise by either Party of one or more of its rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other Party.

6.3 Indemnification. In addition to any other indemnity specifically provided in this Agreement, Developer agrees to defend (with counsel of Developer's choosing and reasonably approved by City), indemnify and hold harmless the Indemnitees from and against any loss, liability, claim, or judgment arising from or related to any act or omission of Developer in connection with its obligations under this Agreement, except to the extent caused by the gross negligence or willful misconduct of any of the Indemnitees or caused by Developer's compliance with the express requirements of this Agreement. The provisions of this Section 6.3 shall survive the termination of this Agreement.

7. ASSIGNMENT; COVENANTS RUN WITH THE LAND

7.1 [intentionally omitted]

7.2 Covenants Run with the Land. The Property shall be developed and sold subject to the covenants, conditions, and restrictions set forth herein. The covenants, conditions, restrictions, reservations, equitable servitudes, liens and charges set forth in this Agreement shall run with the Property and shall be binding upon Developer and all persons having any right, title or interest in the Property, or any part thereof, their heirs, and successive owners and assigns, shall inure to the benefit of City and its successors and assigns, and may be enforced by City and its successors and assigns. The covenants established in this Agreement shall, without regard to technical classification and designation, be binding for the benefit and in favor of City and its successors and assigns, and the parties hereto expressly agree that this Agreement and the covenants herein shall run in favor of City. City is deemed the beneficiary of the terms and provisions of this Agreement and of the covenants running with the land, for and in its own right and for the purposes of protecting the interests of the community and other parties, public or private, in whose favor and for whose benefit this Agreement and the covenants running with the land have been provided. Developer hereby declares its understanding and intent that the burden of the covenants set forth herein touch and concern the land and that Developer's interest in the Property may be rendered less valuable thereby. Developer hereby further declares its understanding and intent that this Agreement provides a public benefit in furtherance of benefit of such covenants touch and concern the land by enhancing and increasing the enjoyment and use of the Property by the citizens of City and by furthering the health, safety, and welfare of the residents of City. Notwithstanding anything in this Agreement to the contrary: (a) in the event that Developer transfers its interest in the Property to a successor, Developer shall have no further obligation or liability under this Agreement except to the extent arising out of an Event of Default by Developer under this Agreement that existed at the time of such transfer; and (b) this Agreement shall automatically terminate and be of no further force or effect, without any additional instrument

or other action required, as to each of the Market Rate Units upon the closing of the sale of each such Market Rate Unit to the initial purchaser thereof.

8. MISCELLANEOUS

8.1 Entire Agreement. This Agreement and all of its exhibits and attachments contains the Parties' entire understanding and agreement with respect to the matters set forth herein, and there are no oral or written representations, understandings or ancillary covenants, undertakings or agreements which are not contained or expressly referred to herein. No testimony or evidence of any such representations, understandings or covenants shall be admissible in any proceeding of any kind or nature to interpret or determine this Agreement's terms or conditions.

8.2 Notices.

8.2.1 Delivery. As used in this Agreement, "notice" includes, but is not limited to, the communication of notice, request, demand, approval, statement, report, acceptance, consent, waiver, appointment or other communication required or permitted hereunder. All notices shall be in writing and shall be considered given either: (i) when delivered in person to the recipient named below; or (ii) on the date of delivery shown on the return receipt, after deposit in the United States mail in a sealed envelope as either registered or certified mail with return receipt requested, and postage and postal charges prepaid, and addressed to the recipient named below; or (iii) on the date of delivery shown on the delivery receipt, after deposit with a known and reliable next-day document delivery service (such as FedEx), charges prepaid and addressed to the recipient named below. All notices shall be addressed as follows:

If to City: City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656-5335
Attn: City Manager
Email: mortiz@AVCity.org

With a copy to: Best Best & Krieger LLP
18101 Von Karman Ave.
Unit 1000
Irvine, CA 92612
Attn: Scott Smith
Email: Scott.Smith@bbklaw.com

If to Developer: **[NAME AND ADDRESS OF THE ENTITY THAT ACQUIRES TITLE TO THE PROJECT AT THE PENDING CLOSING TO BE INSERTED]**

With a copy to: Meritage Homes
18655 North Claret Drive, Suite 400
Scottsdale, AZ 85255

DRAFT

Attention: CA Regional Counsel
Email: [insert]

8.2.2 Courtesy Email Notice. The noticing Party shall make a good-faith effort to also send a courtesy copy of the notice to the other Party by email. Failure to receive a courtesy copy under this Section 8.2.2 is not a defect in notice.

8.2.3 Change of Address. Either Party may, by notice given at any time, require subsequent notices to be given to another person or entity, whether a party or an officer or representative of a party, or to a different address, or both. Notices given before actual receipt of notice of change shall not be invalidated by the change.

8.3 Severability. If any term, provision, covenant or condition of this Agreement shall be determined invalid, void or unenforceable by a court of competent jurisdiction, the remainder of this Agreement shall not be affected thereby to the extent such remaining provisions are not rendered impractical to perform, taking into consideration the purposes of this Agreement.

8.4 Interpretation and Governing Law. This Agreement and any dispute hereunder shall be governed and interpreted in accordance with the laws of the State of California without regard to conflict of law principles. This Agreement shall be construed as a whole according to its fair language and common meaning to achieve the objectives and purposes of the Parties hereto, and the rule of construction to the effect that ambiguities are to be resolved against the drafting Party shall not be employed in interpreting this Agreement, all Parties having been represented by counsel in the negotiation and preparation hereof.

8.5 Section Headings. All section headings and subheadings are inserted for convenience only and shall not affect any construction or interpretation of this Agreement.

8.6 Singular and Plural. As used herein, the singular of any word includes the plural, and vice versa, as context so dictates. Masculine, feminine, and neuter forms of any word include the other as context so dictates.

8.7 Joint and Several Obligations. If at any time during the term of this Agreement the Property or Project is owned, in whole or in part, by more than one party developing or selling the Units to the initial purchasers thereof, then all obligations of the Developer under this Agreement shall be joint and several as to such parties, and the default of any one of such Developers shall be the default of all such Developers.

8.8 Time of Essence. Time is of the essence in the performance of the provisions of this Agreement as to which time is an element.

8.9 Computation of Days. Unless otherwise specified in this Agreement or any exhibit attached hereto, use of the term "days" shall mean calendar days. For purposes of this Agreement and all exhibits attached hereto, "business days" means every day of the week except Saturdays, Sundays, official State holidays as recognized in Government Code section 19853(a) or successor statute, and any days in which City is closed for business.

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8.10 Waiver. Failure by a Party to insist upon the strict performance of any of the provisions of this Agreement by the other Party, or the failure by a Party to exercise its rights upon the default of the other Party, shall not constitute a waiver of such Party's right to insist and demand strict compliance by the other Party with the terms of this Agreement thereafter.

8.11 Non-Discrimination. In performing its obligations under this Agreement, Developer shall not discriminate because of race, color, religion, sex, gender, gender identity, gender expression, sexual orientation, marital status, national origin, ancestry, familial status, disability, veteran or military status, source of income, or genetic information, as defined and prohibited by applicable law. Developer affirms that it is an equal opportunity employer and shall comply with all applicable federal, state and local laws and regulations.

8.12 Counterparts. This Agreement may be executed by the Parties in counterparts, which counterparts shall be construed together and have the same effect as if all of the Parties had executed the same instrument.

8.13 Jurisdiction and Venue. Any action at law or in equity under this Agreement or brought by a Party hereto for the purpose of enforcing, construing or determining the validity of any provision of this Agreement shall be filed and tried in the Superior Court of the County of Orange, State of California, and the Parties hereto waive all provisions of law providing for the filing, removal or change of venue to any other court.

8.14 Attorneys' Fees and Costs. If any party to this Agreement institutes any action, suit, counterclaim, appeal or arbitration for any relief against another party, declaratory or otherwise (collectively an "Action"), to enforce the terms hereof or to declare rights hereunder or with respect to any inaccuracies or material omissions in connection with any of the terms, conditions, representations or warranties on the part of the other party to this Agreement, then the prevailing party in such Action, whether by arbitration or final judgment, shall be entitled to have and recover from the other party all costs and expenses of the Action, including reasonable attorneys' fees and cost incurred in bringing and prosecuting such Action and/or enforcing any judgment, order, ruling or award (collectively, a "Decision") granted therein, all of which shall be deemed to have accrued on the commencement of such Action. For purposes of this section, costs shall include, without limitation, in addition to costs incurred in prosecution or defense of the underlying action, reasonable attorneys' fees, costs, expenses and expert fees and costs incurred in the following: (a) post judgment motions and collection actions; (b) discovery; and (c) appeals of any order or judgment. For the purposes of this Agreement the term "prevailing party" shall have the meaning set forth in California Code of Civil Procedure section 1032(a)(4).

8.15 Project as a Private Undertaking. It is specifically understood and agreed by and between the Parties hereto that the development of the Project is a private development, that neither Party is acting as the agent of the other in any respect hereunder, and that each Party is an independent contracting entity with respect to the terms, covenants and conditions contained in this Agreement. No partnership, joint venture or other association of any kind is formed by this Agreement. The only relationship between City and Developer is that of a government entity regulating the development of private property and the development of such property.

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8.16 Further Actions and Instruments. Each of the Parties shall cooperate with and provide reasonable assistance to the other to the extent contemplated hereunder in the performance of all obligations under this Agreement and in the satisfaction of the Project and conditions of this Agreement. Upon the request of either Party at any time, the other Party shall promptly execute, with acknowledgment or affidavit if reasonably required, and file or record such required instruments and writings and take any actions as may be reasonably necessary under the terms of this Agreement to carry out the intent and to fulfill the provisions of this Agreement or the Project or to evidence or consummate the transactions contemplated by this Agreement. City hereby authorizes City Manager to take such other actions and negotiate and execute any additional agreements as may be reasonably necessary or proper to fulfill City's obligations under this Agreement. The City Manager may delegate their powers and duties under this Agreement to an authorized management level employee of City.

8.17 Amendment. Any alteration, change, or modification of or to this Agreement, in order to become effective, shall be made in writing and in each instance approved by the City Council and signed on behalf of each Party. Any requested alteration, change, or modification of this Agreement by Developer shall require the payment of fees or deposit by Developer to City, as applicable, for City's review of the request. Each alteration, change, or modification to this Agreement shall be recorded against the Property in the Official Records of Orange County, California.

{Signatures on following page}

DRAFT

IN WITNESS WHEREOF, the parties hereto have caused this Density Bonus Housing Agreement to be executed on the date set forth at the beginning of this Agreement.

DEVELOPER:

[NAME AND ENTITY TYPE OF THE ENTITY THAT ACQUIRES TITLE TO THE PROJECT AT THE PENDING CLOSING TO BE INSERTED]

By: _____

Name: _____

Title: _____

CITY:

City of Aliso Viejo,
a California municipal corporation

By: _____
Name:
Title:

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

DRAFT

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of _____)

On _____ before me, _____, Notary Public
(insert name and title of the officer)

personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

DRAFT

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of _____)

On _____ before me, _____, Notary Public
(insert name and title of the officer)

personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

DRAFT

DRAFT

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF ALISO VIEJO, IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

PARCEL 1 OF PARCEL MAP 85-158, IN THE UNINCORPORATED AREA OF ORANGE COUNTY, STATE OF CALIFORNIA, FILED IN BOOK 218, PAGES 27 THROUGH 30 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO OIL, GAS, AND OTHER HYDROCARBON AND MINERAL SUBSTANCES LYING UNDER OR THAT MAY BE PRODUCED FROM THE ABOVE DESCRIBED LAND, TOGETHER WITH ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO THE PROCEEDS THEREFROM AND ONE HUNDRED PERCENT (100%) OF ALL RENTS, BONUSES, AND PROFITS ACCRUING THEREFROM, WITHOUT, HOWEVER, ANY RIGHTS INCLUDING RIGHTS OF ENTRY IN OR WITH RESPECT TO ANY PORTION OF THE SURFACE OR SUBSURFACE TO A VERTICAL DEPTH OF 500 FEET FROM THE SURFACE AS THE SAME MAY FROM TIME TO TIME EXIST, AS RESERVED BY DEEDS FROM LLOYDS BANK OF CALIFORNIA, FORMERLY FIRST WESTERN BANK AND TRUST COMPANY, A CORPORATION, SUCCESSOR TO FIRST NATIONAL BANK IN SANTA ANA, A CORPORATION, RECORDED SEPTEMBER 30, 1976, IN BOOK 11908, PAGES 573 AND IN BOOK 11908, PAGE 582, BOTH OF OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA.

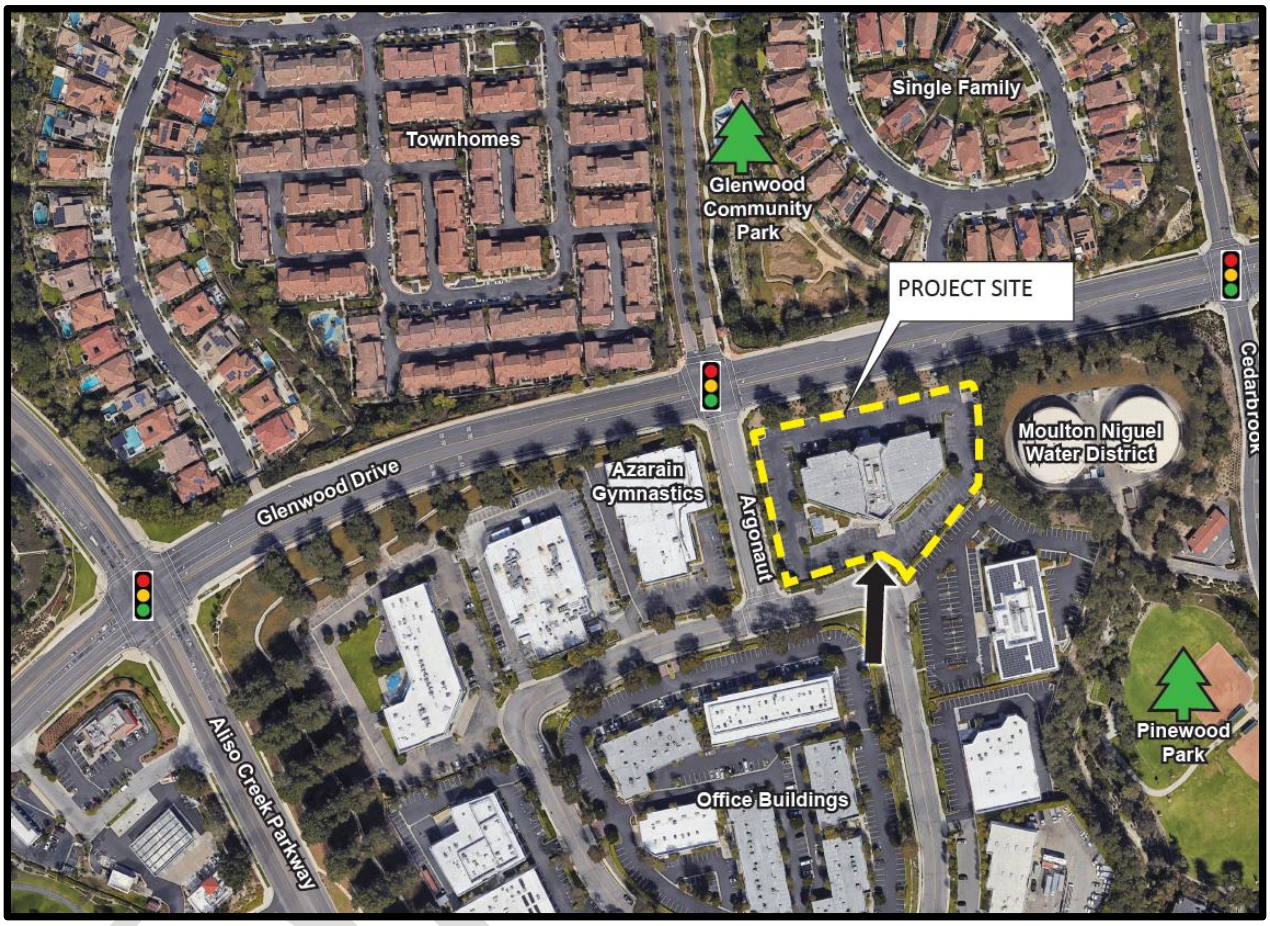
PARCEL B:
NON-EXCLUSIVE EASEMENTS FOR ACCESS, INGRESS, EGRESS, MAINTENANCE, REPAIR AND FOR OTHER PURPOSES, ALL AS DESCRIBED IN THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR ALISO VIEJO COMMUNITY ASSOCIATION RECORDED APRIL 6, 1982, AS INSTRUMENT NO. 82-118353 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA; THE NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR PACIFIC PARK BUSINESS CENTER 1 (DELEGATE DISTRICT NO. 14) OF ALISO VIEJO COMMUNITY ASSOCIATION, RECORDED APRIL 13, 1987, AS INSTRUMENT NO. 87-201111 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA, AS AMENDED BY THE FIRST CERTIFICATE OF AMENDMENT OF NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS, PACIFIC PARK BUSINESS CENTER 1 (TERRACE A) RECORDED SEPTEMBER 4, 1987, AS INSTRUMENT NO. 87-505204 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA.

APN: 623-091-01

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EXHIBIT B

MAP SHOWING PROPERTY AND ITS LOCATION



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EXHIBIT C

EQUITY SHARING AGREEMENT (AND ATTACHMENTS)

(Attached behind this cover page)

RECORDING REQUESTED BY:

AND WHEN RECORDED MAIL TO:

City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656-5335
Attn: City Manager

Free Recording pursuant to Government Code 6103 & 27383

OWNER OCCUPANCY AND EQUITY SHARING AGREEMENT (DENSITY BONUS UNIT)

Owner:	_____
Property:	_____
Purchase Price:	$_____
Original Fair Market Value:	$_____
City Subsidy Amount:	$_____

This Owner Occupancy and Equity Sharing Agreement ("**Equity Sharing Agreement**") is entered into as of this [date], by and between the City of Aliso Viejo, California, ("**City**") and [name(s)] (referred to herein as "**Buyer**" and sometimes as "**Owner**").

RECITALS

A. [developer name], a [entity type] applied for and received development entitlements from City for the development of a 61-unit residential project (three of which will be designated affordable units for very low income households ("**Affordable Units**")), with related amenities and improvements ("**Project**").

B. Pursuant to Government Code section 65915 *et seq*. ("**State Density Bonus Law**"), projects that include specified levels of affordable housing are entitled to receive certain density bonuses and other incentives to facilitate the economic feasibility of those projects.

C. In accordance with State Density Bonus Law, Developer has proposed to include five percent of the dwelling units in the Project for sale to persons or families of very low income and requested a [specify: density bonus, concession and waiver] in order to accommodate building a total development of 61 units.

D. On [date], City and Developer entered into that certain "**Density Bonus Housing Agreement**" pursuant to which Developer agreed to sell three of the Project's units to households of very low income.

E. Buyer intends to purchase the property located at 95 Argonaut in the City of Aliso Viejo, California, County of Orange more particularly described in Exhibit A-1 ("**Property**"), which Property contains one of the dwelling units that is to be sold by Developer to a household of very low income pursuant to the terms of the Density Bonus Housing Agreement.

F. To comply with the requirements of the Density Bonus Housing Agreement, Developer agrees to sell the Property to Buyer for a purchase price of $[insert] ("**Original Purchase Price**"). Buyer and City agree that the fair market value of the Property at time of purchase is $[insert] ("**Original Fair Market Value**"), which price is based on an appraisal conducted at the time of the purchase of the Property by Buyer, or such other method as agreed to by City and Buyer. The Original Purchase Price has been reduced from fair market value as a direct result of the requirements imposed by City on the Project pursuant to the Density Bonus Housing Agreement. City and Buyer acknowledge that the difference between the Original Fair Market Value and the Original Purchase Price, which is equal to $[insert], is a subsidy from City that has enabled Buyer to acquire the Property at an affordable price ("**City Subsidy**").

G. State Density Bonus Law requires City to enter into an agreement with the purchaser of any affordable dwelling unit constructed and sold in exchange for such density bonus that allows City to recapture any initial subsidy and its proportionate share of appreciation. Buyer has agreed to execute and comply with this Equity Sharing Agreement in compliance with such requirements in consideration of the opportunity to purchase the Property at an affordable price, which is below the fair market value of the Property.

H. The purpose of this Equity Sharing Agreement is to: (i) place controls on ownership and occupancy of the Property; (ii) provide City with a right of first refusal in the event Owner desires or is compelled to Transfer the Property; and (iii) require payment of the City Subsidy and a share of the Property's appreciation to City in accordance with the State Density Bonus Law. In accordance with the foregoing, Owner shall execute a promissory note in favor of City ("**City Note**") to ensure the repayment of the City Subsidy and the City Shared Appreciation, as defined in Section 8.a. The form of the City Note is attached hereto as Exhibit B-1.

I. Buyer is receiving a first mortgage loan ("**First Mortgage Loan**") from [lender name] ("**First Lender**"). The First Mortgage Loan is secured by a deed of trust dated [insert], executed by Buyer in favor of First Lender and recorded in the County of Orange concurrently herewith ("**First Mortgage Deed of Trust**").

J. This Equity Sharing Agreement and the City Note shall be secured by a deed of trust on the Property ("**City Deed of Trust**"). The form of the City Deed of Trust is attached hereto as Exhibit C-1. This Equity Sharing Agreement and the City Deed of Trust shall be subordinate to the lien of the First Mortgage Deed of Trust.

NOW, THEREFORE, in consideration of the benefits received by Buyer and City hereunder, Buyer and City agree as follows:

AGREEMENT

1. DEFINITIONS

The following terms are specially defined for this Equity Sharing Agreement and their definitions can be found in the sections indicated below:

a. "Affordable Housing Cost" — Same meaning as provided in the Density Bonus Housing Agreement.

b. "Buyer" or "Owner" — First sentence on page 1 of this Equity Sharing Agreement

c. "City" — First sentence on page 1 of this Equity Sharing Agreement

d. "City Deed of Trust" — Recital J

e. "City Note" — Recital H

f. "City Shared Appreciation" — Section 8.a

g. "City Subsidy" — Recital F

h. "Default" — Section 9

i. "Density Bonus Housing Agreement" – Recital D

j. "Eligible Capital Improvements" — Section 8.b

k. "Fair Market Value" — Section 6

l. "First Lender" — Recital I

m. "First Mortgage Deed of Trust" — Recital I

n. "First Mortgage Loan" — Recital I

o. "Original Fair Market Value" — Recital F

p. "Original Purchase Price" — Recital F

q. "Owner's Notice of Intent to Transfer" — Section 6

r. "Property" — Recital E and Section 2

s. "Transfer" — Section 5

2. DESCRIPTION OF PROPERTY

This Agreement concerns the real property commonly known as 95 Argonaut, Aliso Viejo, California 92656, which is more fully described in Exhibit A-1 ("**Property**").

3. BUYER CERTIFICATIONS; OWNER OCCUPANCY REQUIREMENT

a. Owner Occupancy Requirement. The purpose of the City assistance provided pursuant to this Equity Sharing Agreement is to provide Buyer with the opportunity to become a homeowner. Investment in real estate is not the primary purpose of this Equity Sharing Agreement. Therefore, Buyer shall occupy the Property as Buyer's principal place of residence residing in the unit for at least 10 months out of any 12-month period. City may grant a temporary waiver of this occupancy requirement for good cause in its sole discretion.

b. Buyer Certifications. Buyer certifies that the financial and other information previously provided in order to qualify to purchase the Property is true and correct as of the date first written above.

4. MAINTENANCE AND INSURANCE REQUIREMENTS

Buyer shall maintain a standard all risk property insurance policy equal to the replacement value of the Property (adjusted every five years by appraisal, if requested by City), naming City as an additional insured. Additional insurance requirements are set forth in Section 5 of the City Deed of Trust.

5. RESTRICTIONS ON RESALE OF THE PROPERTY

Any Transfer of the Property will be subject to the provisions of this Agreement. "**Transfer**" means any sale, assignment or transfer, voluntary or involuntary, of any interest in the Property, including, but not limited to, a fee simple interest, a joint tenancy interest, a life estate, a leasehold interest, an interest evidenced by a land contract by which possession of the Property is transferred and Owner retains title, or a deed of trust. Any Transfer without satisfaction of the provisions of this Agreement is prohibited and shall constitute a default by Owner for which City may exercise any and all remedies under this Agreement, the City Note and the City Deed of Trust. A Transfer shall not include a conveyance: (i) to an existing spouse or domestic partner; (ii) by an Owner to a spouse or domestic partner where the spouse or domestic partner becomes the co-owner of the Property; (iii) between spouses as part of a marriage dissolution proceeding; (iv) by Owner into an *inter vivos* trust in which Owner is the beneficiary; or (iv) refinance of the First Mortgage Loan meeting the requirements of Section 17; provided, however, that Owner shall provide written notice to City of all such conveyances within 30 days of the conveyance and Owner shall continue to occupy the Property as Owner's principal place of residence (except where the conveyance occurs pursuant to subsection (iii) above, in which event the new owner shall occupy the Property and affirmatively assume Owner's obligations under this Agreement, the City Note, and the City Deed of Trust).

6. NOTICE OF INTENDED TRANSFER; CITY'S RIGHT OF FIRST REFUSAL; PREPARATION OF PROPERTY FOR SALE

a. Notice of Intent to Transfer. If Owner intends to Transfer the Property, Owner shall promptly give City written notice of such intent ("**Owner's Notice of Intent to Transfer**"). Owner shall give City the Owner's Notice of Intent to Transfer prior to notifying real estate brokers or lenders of Owner's intent to Transfer the Property and prior to listing of the Property on the Multiple Listing Service. The Owner's Notice of Intent to Transfer shall be sent to City by certified mail, return receipt requested at the address provided in Section 22 below. The Owner's Notice of Intent to Transfer shall include the information necessary for City to determine the Shared Appreciation of the Property, including the following information:

(1) The address of the Property;

(2) The date of purchase of the Property by Owner;

(3) The Original Fair Market Value of the Property at the time of Owner's purchase as determined by City and Owner and set forth on the first page of this Equity Sharing Agreement;

(4) A copy of the HUD-1 Settlement Statement or equivalent document from the close of escrow on Owner's purchase of the Property;

(5) If Owner has made Eligible Capital Improvements to the Property that Owner wishes to include in the calculation of Shared Appreciation, a description of the improvements, the date the improvements were made, a copy of the letter granting prior City approval of the improvements (provided, however, if Owner did not obtain City approval of the Capital Improvements Owner may still include such Capital Improvements in the Notice of Intent to Transfer, however, it shall be within City's sole discretion to determine whether to accept these Capital Improvements as Eligible Capital Improvements and if so, their value), evidence of cost of the improvements, and an appraisal that documents the value added to the Property by the Eligible Capital Improvements. Acceptance shall not be unreasonably withheld.;

(6) The date the Property will be placed on the market; and

(7) The name and phone number of the person to contact to schedule inspection of the Property by City.

b. Fair Market Value Appraisal. Prior to the Transfer of the Property, the Fair Market Value of the Property at the time of Transfer shall be determined by a certified MAI or other qualified real estate appraiser approved in advance by City. If possible, the appraisal shall be based upon the sales prices of comparable properties sold in the market area during the preceding three month period. The cost of the appraisal shall be paid by Owner, unless the appraisal is obtained from a new purchaser. Further, in the event that Owner has made Eligible Capital Improvements, the value of which Owner wishes to retain, the appraisal shall determine the value of such Eligible Capital Improvements in accordance with Section 8.b below. Nothing in this section precludes

Owner and City from establishing the Fair Market Value of the Property at the time of Transfer by mutual agreement in lieu of an appraisal pursuant to this section.

c. City's Right of First Refusal. Upon receipt of an Owner's Notice of Intent to Transfer, City shall have the first right to purchase the Property at the price and terms determined by Owner but for not more than an Affordable Housing Cost purchase price as determined at such time of proposed sale. City shall have such right and option ("**First Option**") for 45 days after City receives Owner's Notice of Intent to Transfer, after which, if not exercised, such First Option shall terminate. If City exercises the First Option, Owner shall not be liable for payment of the City Subsidy or the City Shared Appreciation pursuant to Section 8 below.

7. SALE OF PROPERTY BY OWNER

a. Subject to Section 6.c above, Owner may Transfer the Property to a person of Owner's choosing at an unrestricted price (supported by an MAI or other qualified appraisal), and City shall reconvey the liens of this Equity Sharing Agreement and the City Deed of Trust from the Property, provided that Owner pays the full amount owed under the City Note to the City pursuant to Section 8 below. Owner shall provide City with the following documentation associated with such a Transfer:

(1) The name and address of the purchaser;

(2) The final sales contract and all other related documents which shall set forth all the terms of the sale of the Property, including a HUD-1 Settlement Statement. Said documents shall include at least the following terms: (a) the sales price; and (b) the price to be paid by the purchaser for Owner's personal property, if any, for the services of Owner, if any, and any credits, allowances or other consideration, if any.

(3) A written certification, from Owner and the purchaser in a form acceptable to City that the sale shall be closed in accordance with the terms of the sales contract and other documents submitted to and approved by City. The certification shall also provide that the purchaser or any other party has not paid and will not pay to Owner, and Owner has not received and will not receive from the purchaser or any other party, money or other consideration, including personal property, in addition to what is set forth in the sales contract and documents submitted to City. The written certification shall also include a provision that in the event a Transfer is made in violation of the terms of this Equity Sharing Agreement or false or misleading statements are made in any documents or certification submitted to City, City shall have the right to foreclose on the Property or file an action at law or in equity as may be appropriate. In any event, any costs, liabilities or obligations incurred by Owner and the purchaser for the return of any moneys paid or received in violation of this Equity Sharing Agreement or for any costs and legal expenses, shall be borne by Owner and/or the purchaser and they shall hold City and its designee harmless and reimburse

their expenses, legal fees and costs for any action they reasonably take in good faith in enforcing the terms of this Equity Sharing Agreement.

(4) A copy of the MAI or other qualified appraisal prepared for the Property in accordance with Section 6.b.

(5) Upon the close of the proposed sale, a copy of the final sales contract, HUD-1 Settlement Statement, escrow instructions, and any other documents which City may reasonably request.

8. PAYMENT TO CITY OF CITY SUBSIDY AND SHARED APPRECIATION

a. Upon a Transfer of the Property to a person other than City pursuant to Section 7, Owner shall pay to City the City Subsidy plus the City Shared Appreciation, less the value of any Eligible Capital Improvements as determined pursuant to Section 7.b below. The "**City Subsidy**," as defined in Recital F, is equal to the amount by which the Original Fair Market Value of the Property exceeds the Original Purchase Price of the Property. "**City Shared Appreciation**" shall be calculated pursuant to the City Note but by way of information the following sets forth the method for determining the City Shared Appreciation. If there is any inconsistency between the City Note and this Equity Sharing Agreement with respect to the determination of City Shared Appreciation, the City Note shall control. City Shared Appreciation shall be calculated by dividing the City Subsidy amount by the Original Fair Market Value of the Property. The resulting percentage, rounded to the closest one-tenth of a percentage point, shall be multiplied by the amount calculated by subtracting the Original Fair Market Value from the Fair Market Value at the time of the Transfer and the product of that calculation shall equal the City Shared Appreciation.

b. The value of any Eligible Capital Improvements shall be the value of any substantial structural or permanent fixed improvements which Owner has made to the Property after Owner's purchase of the Property, provided that such improvements are: (i) made or installed by Owner in conformity with applicable building codes at the time of installation; and (ii) approved in advance by City in writing. The value of such Eligible Capital Improvements which is retained by Owner shall be limited to appraised increases in value to the Property as a result of the improvements (as determined by the appraisal performed as described in Section 6.b, above), including any depreciation in value of the capital improvements since the time of installation, and not the cost of construction of the improvements to the Property.

c. The City Subsidy and the City Shared Appreciation, less the value of any Eligible Capital Improvements, shall be a debt of Owner to City, evidenced by this Equity Sharing Agreement and the City Note, and secured by the City Deed of Trust. Owner acknowledges that City shall have no obligation to cause reconveyance of this Equity Sharing Agreement or of the City Deed of Trust until the City Subsidy and the City Shared Appreciation are paid to City. City shall utilize the repayment of the City Subsidy and the City Shared Appreciation within five years of receipt of such funds for any of the purposes described in subdivision (e) of section 33334.2 of the Health and Safety Code that promote homeownership.

d. Notwithstanding the foregoing, in no event shall Owner be obligated to pay the City Subsidy and City Shared Appreciation in an amount that would result in the amount of sales proceeds available to Owner being less than the Original Purchase Price for the Property as set forth above unless Owner has made a Transfer in violation of this Agreement.

9. DEFAULTS

a. The following events shall constitute a "Default" by Owner under this Equity Sharing Agreement:

(1) City determines that Owner has made a misrepresentation to obtain the benefits of purchase of the Property or in connection with its obligations under this Equity Sharing Agreement;

(2) Owner fails to occupy the Property as required pursuant to Section 3 above;

(3) Owner makes a Transfer in violation of this Equity Sharing Agreement;

(4) Owner otherwise fails to comply with the requirements of this Equity Sharing Agreement, the City Note, or the City Deed of Trust and such violation is not corrected to the satisfaction of City within 10 days after the date of written notice by City to Owner of such violation;

(5) A lien is recorded against the Property other than the lien of a bone fide First Mortgage Loan;

(6) Owner places a mortgage on the Property in violation of Section 17 below;

(7) Owner declares a bankruptcy or makes an assignment of assets for the benefit of creditors.

b. Upon a declaration of Default by City under this Equity Sharing Agreement, City may pursue any or all of the following remedies:

(1) Declare the City Subsidy and City Shared Appreciation immediately due and payable without further demand, declare a default under the City Note, and invoke the power of sale under the City Deed of Trust;

(2) Apply to a court of competent jurisdiction for any such relief at law or in equity as may be appropriate including, but not limited to, the collection of damages from Owner, which damages shall include City's costs associated with administering City's affordable housing program and the cost to City of providing sufficient assistance to a very low income household to acquire a market rate home at an affordable housing cost as that term is defined in Health and Safety Code section 50052.5; and

(3) Declare a Default under the City Note and City Deed of Trust and pursue all City remedies thereunder.

10. NOTICE OF DEFAULT AND FORECLOSURE

a. A request for notice of default and any notice of sale under any deed of trust or mortgage with power of sale encumbering the Property shall be recorded by City in the Office of the Recorder of the County of Orange for the benefit of City. City may declare a Default under this Equity Sharing Agreement upon receipt of any notice given to City pursuant to Civil Code section 2924b, and may exercise its rights as provided in Section 9.

b. In the event of default and foreclosure, City shall have the same right as Owner to cure defaults and redeem the Property prior to the foreclosure sale. Nothing herein shall be construed as creating any obligation of City to cure any such default, nor shall this right to cure and redeem operate to extend any time limitations in the default provisions of the underlying deed of trust or mortgage.

c. If City failed to file the request for notice of default, City's right to purchase the Property shall commence from the date a notice of default is given by City to Owner.

11. NON-LIABILITY OF CITY

a. Non-liability for Negligence, Loss, or Damage. Owner acknowledges, understands and agrees that the relationship between Owner and City is solely that of an owner and an administrator of a City affordable housing program, and that City does not undertake or assume any responsibility for or duty to Owner to select, review, inspect, supervise, pass judgment on, or inform Owner of the quality, adequacy or suitability of the Property or any other matter. City owes no duty of care to protect Owner against negligent, faulty, inadequate or defective building or construction or any condition of the Property and Owner agrees that neither Owner, or Owner's heirs, successors or assigns shall ever claim, have or assert any right or action against City for any loss, damage or other matter arising out of or resulting from any condition of the Property and will hold City harmless from any liability, loss or damage for these things.

b. Indemnity. Owner agrees to defend, indemnify, and hold City harmless from all losses, damages, liabilities, claims, actions, judgments, costs, and reasonable attorney's fees that City may incur as a direct or indirect consequence of: (1) Owner's default, performance, or failure to perform any obligations as and when required by this Equity Sharing Agreement or the Deed of Trust; or (2) the failure at any time of any of Owner's representations to City to be true and correct.

12. RESTRICTIONS ON FORECLOSURE PROCEEDS

If a creditor acquires title to the Property through a deed in lieu of foreclosure, a trustee's deed upon sale, or otherwise, Owner shall not be entitled to the proceeds of sale except to the extent that such proceeds otherwise payable to Owner exceeds the amounts owed to City including the City Subsidy and City Shared Appreciation pursuant to the City Note. Owner shall instruct the

holder of such excess proceeds to pay such proceeds to City in consideration of the benefits received by Owner through purchase of the Property.

13. RESTRICTION ON INSURANCE PROCEEDS

If the Property is damaged or destroyed and Owner elects not to rebuild or repair the Property, Owner shall pay City the portion of any insurance proceeds received by Owner for such destruction or damage which is equal to the City Subsidy plus the City Shared Appreciation calculated pursuant to Section 8 above, with the total amount of insurance proceeds serving as the Fair Market Value upon Transfer of the Property, provided that in no event shall City receive insurance proceeds in an amount that results in the amount of insurance proceeds available to Owner being less than the Original Purchase Price for the Property as set forth above.

14. TERM OF AGREEMENT

All the provisions of this Equity Sharing Agreement, including the benefits and burdens, run with the Property and this Equity Sharing Agreement shall bind, and the benefit hereof shall inure to, Owner, Owner's heirs, legal representatives, executors, successors in interest and assigns, and to City and its successors, until the date of Transfer of the Property and payment to City of the City Subsidy and the City Shared Appreciation.

15. SUPERIORITY OF AGREEMENT

Owner covenants that Owner has not, and will not, execute any other agreement with provisions contradictory to or in opposition to the provisions hereof, and that, in any event, this Equity Sharing Agreement is controlling as to the rights and obligations between and among Owner and City and their respective successors.

16. SUBORDINATION

a. Notwithstanding any provision herein, this Equity Sharing Agreement shall not diminish or affect the rights of the First Lender under the First Lender Deed of Trust or any subsequent First Lender deeds of trust hereafter recorded against the Property in compliance with Section 17 below.

b. Notwithstanding any other provision hereof, the provisions of this Equity Sharing Agreement and the City Deed of Trust shall be subordinate to the lien of the First Mortgage Deed of Trust and shall not impair the rights of the First Lender, or such lenders' assignees or successors in interest to exercise their remedies under the First Mortgage Deed of Trust in the event of default under the First Mortgage Deed of Trust by Owner. Such remedies under the First Mortgage Deed of Trust include the right of foreclosure or acceptance of a deed or assignment in lieu of foreclosure. After such foreclosure or acceptance of a deed in lieu of foreclosure, this Equity Sharing Agreement and the City Deed of Trust shall be forever terminated and shall have no further effect as to the Property or any transferee thereafter; provided; however, if the holder of such First Mortgage Deed of Trust acquires title to the Property pursuant to a deed or assignment in lieu of foreclosure, this Equity Sharing Agreement and the City Deed of Trust shall automatically terminate upon such acquisition of title, only if (i) City has been given written notice of default

under such First Mortgage Deed of Trust with 60-day cure period and (ii) City shall not have cured the default within such 60-day period or commenced to cure and given its firm commitment to complete the cure in form and substance acceptable to the First Lender.

17. REFINANCE OF MORTGAGE LOAN

The outstanding principal on the City Note shall not be due upon prepayment and refinancing of the First Mortgage Loan, and this Agreement and the City Deed of Trust shall be subordinated to the refinanced First Mortgage Loan, provided that following such refinance, the principal amount of all debt secured by the Property will not exceed the original principal amount of the First Mortgage Loan unless some other amount is approved by City in writing, in City's sole and absolute discretion. Mortgage loans or equity lines of credit junior in lien priority to the City Deed of Trust are not permitted. City and Owner agree that the requirements of this Section 17 are necessary to ensure the continued affordability of the Property to Owner and to minimize the risk of loss of the Property by Owner through default and foreclosure of mortgage loans. Owner further acknowledges that violation of the provisions of this Section 17 shall constitute a Default under this Equity Sharing Agreement.

18. NONDISCRIMINATION

Owner covenants by and for itself and its successors and assigns that there shall be no discrimination against or segregation of a person or of a group of persons on account of race, color, religion, creed, age, disability, sex, sexual orientation, marital status, ancestry or national origin in the sale, transfer, use, occupancy, tenure or enjoyment of the Property, nor shall Owner or any person claiming under or through Owner establish or permit any such practice or practices of discrimination or segregation with reference to the use, occupancy, or transfer of the Property. The foregoing covenant shall run with the land.

19. INVALID PROVISIONS

If any one or more of the provisions contained in this Equity Sharing Agreement shall for any reason be held to be invalid, illegal or unenforceable by a court of competent jurisdiction, then such provision or provisions shall be deemed severable from the remaining provisions contained in this Equity Sharing Agreement, and this Equity Sharing Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

20. CONTROLLING LAW

The terms of this Equity Sharing Agreement shall be interpreted under the laws of the State of California. The venue for any legal action pertaining to this Agreement shall be Orange County, California.

21. NO WAIVER

No delay or omission in the exercise of any right or remedy of City upon any default by Owner shall impair such right or remedy or be construed as a waiver. City's failure to insist in any one or more instance upon the strict observance of the terms of this Equity Sharing Agreement

shall not be considered a waiver of City's right thereafter to enforce the provisions of the Equity Sharing Agreement. City shall not waive its rights to enforce any provision of this Equity Sharing Agreement unless it does so in writing, signed by an authorized agent of City.

22. NOTICES

a. All notices required herein shall be sent by certified mail, return receipt requested or express delivery service with a delivery receipt and shall be deemed to be effective as of the date received or the date delivery was refused as indicated on the return receipt as follows:

To Owner:
_____
_____
_____

At the address of the Property:
_____
_____
Aliso Viejo, CA 9____

To City:
City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656-5335
Attn: Mitzi Ortiz, City Manager

With Copy to:
_____
_____
_____

b. The parties may subsequently change addresses by providing written notice of the change in address to the other parties in accordance with this Section.

23. INTERPRETATION OF AGREEMENT

The terms of this Equity Sharing Agreement shall be interpreted so as to avoid speculation on the Property and to insure to the extent possible that its sales price and mortgage payment remain affordable to [specify] income households.

24. EXHIBITS

Any exhibits referred to in this Equity Sharing Agreement are hereby incorporated herein by this reference.

25. ATTORNEYS FEES

If any action is filed in a court of competent jurisdiction related to this Equity Sharing Agreement, the prevailing party shall be entitled to recover reasonable attorneys' fees and costs from the non-prevailing party.

26. TAX RETURNS

Owner shall execute such documents as are necessary to provide City with access to Owners filed federal income tax returns.

27. ACKNOWLEDGEMENT OF TERMS

Owner hereby acknowledges that, prior to Owner's execution of this Equity Sharing Agreement, City provided Owner with an in-person, informational session during which City explained, in plain and simple language, the resale restrictions and other material provisions of this Equity Sharing Agreement.

28. ENTIRE AGREEMENT

This Equity Sharing Agreement (along with the City Note and City Deed of Trust) sets forth the entire understanding and agreement of City and Owner and any amendment, alteration or interpretation of this Equity Sharing Agreement must be in writing signed by both City and Owner.

IN WITNESS WHEREOF, the parties have executed this Equity Sharing Agreement on or as of the date first written above.

CITY:	BUYER
Mitzi Ortiz, City Manager City of Aliso Viejo	_____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of _____)

On _____ before me, _____, Notary Public
(insert name and title of the officer)

personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of _____)

On _____ before me, _____, Notary Public
(insert name and title of the officer)

personally appeared _____
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

EXHIBIT A-1

Legal Description of Property

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF ALISO VIEJO, IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

PARCEL 1 OF PARCEL MAP 85-158, IN THE UNINCORPORATED AREA OF ORANGE COUNTY, STATE OF CALIFORNIA, FILED IN BOOK 218, PAGES 27 THROUGH 30 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO OIL, GAS, AND OTHER HYDROCARBON AND MINERAL SUBSTANCES LYING UNDER OR THAT MAY BE PRODUCED FROM THE ABOVE DESCRIBED LAND, TOGETHER WITH ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO THE PROCEEDS THEREFROM AND ONE HUNDRED PERCENT (100%) OF ALL RENTS, BONUSES, AND PROFITS ACCRUING THEREFROM, WITHOUT, HOWEVER, ANY RIGHTS INCLUDING RIGHTS OF ENTRY IN OR WITH RESPECT TO ANY PORTION OF THE SURFACE OR SUBSURFACE TO A VERTICAL DEPTH OF 500 FEET FROM THE SURFACE AS THE SAME MAY FROM TIME TO TIME EXIST, AS RESERVED BY
DEEDS FROM LLOYDS BANK OF CALIFORNIA, FORMERLY FIRST WESTERN BANK AND TRUST COMPANY, A CORPORATION, SUCCESSOR TO FIRST NATIONAL BANK IN SANTA ANA, A CORPORATION, RECORDED SEPTEMBER 30, 1976, IN BOOK 11908, PAGES 573 AND IN BOOK 11908, PAGE 582, BOTH OF OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA.

PARCEL B:
NON-EXCLUSIVE EASEMENTS FOR ACCESS, INGRESS, EGRESS, MAINTENANCE, REPAIR AND FOR OTHER PURPOSES, ALL AS DESCRIBED IN THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR ALISO VIEJO COMMUNITY ASSOCIATION RECORDED APRIL 6, 1982, AS INSTRUMENT NO. 82-118353 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA; THE NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR PACIFIC PARK BUSINESS CENTER 1 (DELEGATE DISTRICT NO. 14) OF ALISO VIEJO COMMUNITY ASSOCIATION, RECORDED APRIL 13, 1987, AS INSTRUMENT NO. 87-201111 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA, AS AMENDED BY THE FIRST CERTIFICATE OF AMENDMENT OF NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS, PACIFIC PARK BUSINESS CENTER 1 (TERRACE A) RECORDED SEPTEMBER 4, 1987, AS INSTRUMENT NO. 87-505204 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA.

APN: 623-091-01

EXHIBIT B-1

City Note

[Attached behind this cover page]

CITY OF ALISO VIEJO PROMISSORY NOTE

Secured by Deed of Trust

$_____ _____, 202_
And City Shared Appreciation

FOR VALUE RECEIVED, the undersigned [name(s)] ("**Borrower**") promises to pay to the City of Aliso Viejo, a California municipal corporation ("**City**"), at 12 Journey, Suite 100, Aliso Viejo, CA 92656-5335, or such other place as City may designate in writing: (i) a principal amount of $[amount] ("**City Subsidy**"), which amount constitutes a subsidy provided by City to Borrower pursuant to that certain Owner Occupancy and Equity Sharing Agreement entered into by and between Borrower and City dated [date] ("**Equity Sharing Agreement**") for purchase of the Property located at [address] in the City of Aliso Viejo, California ("**Property**"); and (ii) the City Shared Appreciation, as defined herein.

1. Purpose of Loan. Borrower is purchasing the Property, which is being sold by [developer name], a [entity type] ("**Developer**") pursuant to that certain Density Bonus Housing Agreement entered into by and between City and Developer to ensure that a certain number of the housing units being constructed by Developer are sold at an affordable housing cost to [specify] income households. The purchase price of the Property has been set substantially below the market value so that the Property will be affordable for purchase by [specify] income households. Because the purchase price has been set below the market value, Borrower is required and has agreed to enter into the Equity Sharing Agreement with City, which requires Borrower to pay the City Subsidy and the City Shared Appreciation to City. This Note evidences the obligation of Borrower to pay the City Subsidy and the City Shared Appreciation to City pursuant to the Equity Sharing Agreement.

2. Definitions. The terms set forth in this section shall have the following meanings in this Note.

a. "Borrower" has the meaning set forth in the first paragraph on page 1 of this Note.

b. "City" means the City of Aliso Viejo, California.

c. "City Deed of Trust" means the deed of trust and security agreement that secures the Equity Sharing Agreement and this Note on the Property.

d. "City Subsidy" has the meaning provided in the first paragraph on page 1 of this Note.

e. "City Shared Appreciation" means and shall be calculated by dividing the City Subsidy amount by the Original Fair Market Value of the Property. The resulting percentage, rounded to the closest one-tenth of a percentage point, shall be multiplied by the

amount calculated by subtracting the Original Fair Market Value from the Fair Market Value at the time of Transfer and the product of that calculation shall equal the City Shared Appreciation.

f. "Developer" has the meaning provided in Section 1 of this Note.

g. "Eligible Capital Improvements" has the meaning provided in Section 8.b of the Equity Sharing Agreement.

h. "Equity Sharing Agreement" has the meaning provided in the first paragraph on page 1 of this Note.

i. "Fair Market Value at the time of Transfer" has the meaning provided in Section 6.b of the Equity Sharing Agreement.

j. "First Mortgage Loan" has the meaning provided in Recital I of the Equity Sharing Agreement.

k. "First Option" has the meaning provided in Section 6.c of the Equity Sharing Agreement.

l. "Original Fair Market Value" has the meaning set forth in the Recital F of the Equity Sharing Agreement.

m. "Original Purchase Price" has the meaning set forth in Recital F of the Equity Sharing Agreement.

n. "Note" means this promissory note.

o. "Property" means the dwelling, and the real property on which the dwelling is located, which secure the City Deed of Trust executed in connection with this Note. The Property's location is provided in the first paragraph on page 1 of this Note.

p. "Transfer" has the meaning provided in Section 5 of the Equity Sharing Agreement.

3. Term. The term of this Note commences on the date of this Note and expires on the earlier of (i) the date of Transfer of the Property and the payment to City of the City Subsidy and the City Shared Appreciation; or (ii) upon City's exercise of the First Option in accordance with Section 6.c of the Equity Sharing Agreement.

4. Payment.

a. Subject to Subsections 4.b and 4.c below, the total amount of the City Subsidy and the City Shared Appreciation, less the value of any Eligible Capital Improvements, shall immediately become due and payable upon the occurrence of any of the following: (i) Borrower defaults under this Note, the Equity Sharing Agreement, the City Deed of Trust, or the

First Mortgage Loan; (ii) upon a Transfer of the Property as set forth in Section 8 of the Equity Sharing Agreement; or (iii) Borrower ceases to occupy the Property as the Buyer's principal place of residence as set forth in Section 3 of the Equity Sharing Agreement.

b. Unless Borrower has made a Transfer in violation of the Equity Sharing Agreement, in no event shall Borrower be obligated to pay the City Subsidy and the City Shared Appreciation in an amount that would result in the amount of sales proceeds available to Borrower being less than the Property's Original Purchase Price.

c. If City exercises the First Option in accordance with Section 6.c of the Equity Sharing Agreement, this Note shall immediately terminate and Borrower shall not be liable for payment of the City Subsidy or the City Shared Appreciation.

5. Security. This Note is secured by the City Deed of Trust, which also secures the Equity Sharing Agreement.

6. No Assumption of Note by Subsequent Buyers; Acceleration. Borrower acknowledges that this Note is given in connection with the purchase the Property as part of a City program to assist in the purchase of homes by [specify] income households. Consequently, this Note is not automatically assumable, but is subject to section 711.5 of the California Civil Code, which allows City to accelerate all amounts due under this Note if any subsequent sale or transfer of the Property of any kind does not comply with the provisions of the Equity Sharing Agreement.

7. Refinance of First Mortgage Loan. The outstanding principal on this Note shall not be due upon prepayment and refinance of the First Mortgage Loan, and the City Deed of Trust and Equity Sharing Agreement shall be subordinated, provided that such refinancing meets the requirements of Section 17 of the Equity Sharing Agreement.

8. Default. Borrower shall be in default under this Note if Borrower is in default under any mortgage loan on the Property (including the First Mortgage Loan) following the expiration of applicable cure periods, or if, after the notice and cure period provided by City to Borrower pursuant to the notice and cure provisions of the City Deed of Trust, Borrower (i) fails to pay any money when due under this Note; (ii) breaches any representation or covenant made in this Note or the Equity Sharing Agreement in any material respect; or (iii) breaches any provision of the City Deed of Trust or the Equity Sharing Agreement.

9. Acceleration. Upon the occurrence of a default under this Note, the Equity Sharing Agreement, the City Deed of Trust, or the First Mortgage Loan, City shall have the right to declare the City Subsidy and the City Shared Appreciation immediately due and payable.

10. Non-liability for Negligence, Loss, or Damage. Borrower acknowledges, understands and agrees that the relationship between Borrower and City is solely that of borrower and lender, and that City neither undertakes nor assumes any responsibility for or duty to Borrower to select, review, inspect, supervise, pass judgment on, or inform Borrower of the quality, adequacy or suitability of the Property or any other matter. City owes no duty of care to protect Borrower against negligent, faulty, inadequate or defective building or construction or any

condition of the Property and Borrower agrees that neither Borrower, or Borrower's heirs, successors or assigns shall ever claim, have or assert any right or action against City for any loss, damage or other matter arising out of or resulting from any condition of the Property and will hold City harmless from any liability, loss or damage for these things.

11. Indemnity. Borrower agrees to defend, indemnify, and hold City harmless from all losses, damages, liabilities, claims, actions, judgments, costs, and reasonable attorney's fees that City may incur as a direct or indirect consequence of:

a. Borrower's default, performance, or failure to perform any obligations as and when required by this Note, the City Deed of Trust, and the Equity Sharing Agreement; or

b. The failure at any time of any of Borrower's representations or warranties to be true and correct.

12. No Waiver by City. Failure by City to pursue its legal and equitable remedies upon Borrower's default shall not constitute a waiver of City's right to declare a default and exercise all of its rights under this Note, the City Deed of Trust and the Equity Sharing Agreement. Failure to declare amounts due shall not constitute a waiver on the part of City of the right to declare them due in the event of any subsequent Transfer. Nor shall acceptance by City of any payment provided for herein constitute a waiver of City's right to require prompt payment of any remaining principal owed. A waiver of any term of the Note must be made in writing, signed by an authorized agent of City, and shall be limited to the express written terms of such waiver.

13. Interest. Notwithstanding any other provision of this Note, or any instrument securing the obligations of Borrower under this Note, if, for any reason whatsoever, the payment of any sums by Borrower pursuant to the terms of this Note would result in the payment of interest which would exceed the amount that City may legally charge under the laws of the State of California, then the amount by which payments exceeds the lawful interest rate shall automatically be deducted from the principal balance owing on this Note, so that in no event shall Borrower be obligated under the terms of this Note to pay any interest which would exceed the lawful rate.

14. Attorney's Fees and Costs. Borrower agrees that if any amounts due under this Note are not paid when due, to pay in addition to the City Subsidy and City Shared Appreciation, all costs and expenses of collection and reasonable attorney fees paid or incurred by City in connection with the collection or enforcement of this Note, whether or not suit is filed.

15. Joint and Several Obligations. This Note is the joint and several obligation of all makers, sureties, guarantors and endorsers, and shall be binding upon them and their successors and assigns.

16. No Offset. Borrower hereby waives any rights of offset it now has or may hereafter have against City, its successors and assigns, and agrees to make the payments called for herein in accordance with the terms of this Note.

17. Borrower's Waiver. Borrower and any endorsers or guarantors of this Note, for themselves, their heirs, legal representatives, successors and assigns, respectively, severally waive diligence, presentment, protest, and demand, and notice of protest, notice of dishonor and notice of nonpayment of this Note, and expressly waive any rights to be released by reason of any extension of time or change in terms of payment, or change, alteration or release of any security given for the payments hereof, and expressly waive the right to plead any and all statutes of limitations as a defense to any demand on this Note or agreement to pay the same, and jointly and severally agree to pay all costs of collection when incurred, including reasonable attorneys' fees.

18. Notices. All notices required in this Note shall be sent by certified mail, return receipt requested, or express delivery service with a delivery receipt, or personally delivered with a delivery receipt obtained and shall be deemed to be effective as of the date shown on the delivery receipt as the date of delivery, the date delivery was refused, or the date the notice was returned as undeliverable as follows:

To Borrower:

_____
_____
_____

At the address of the Property:

_____
_____
Aliso Viejo, CA _____

To City:

City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656-5335
Attn: Mitzi Ortiz, City Manager

The parties may subsequently change addresses by providing written notice of the change in address to the other parties in accordance with this section.

19. Controlling Law. This Note shall be construed in accordance with and be governed by the laws of the State of California.

20. Assignment by City. City may assign its right to receive the proceeds under this Note to any person and upon notice to Borrower by City all payments shall be made to the assignee.

21. Severability. Any provision of this Note shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions hereof shall not in any way be affected or impaired thereby.

22. Entire Agreement. This Note (along with the Equity Sharing Agreement and the City Deed of Trust) sets forth the entire understanding and agreement of City and Borrower and any amendment, alteration or interpretation of this Note must be in writing signed by both City and Borrower.

BORROWER:

EXHIBIT C-1

City Deed of Trust

[Attached behind this cover page]

RECORDING REQUESTED BY:

AND WHEN RECORDED MAIL TO:

City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656-5335
Attn: [ ]

Free Recording pursuant to
Government Code 6103 & 27383

DEED OF TRUST
AND SECURITY AGREEMENT
(DENSITY BONUS UNIT)

Note to Borrower:
This Deed of Trust Contains
Provisions Restricting Assumptions

THIS DEED OF TRUST AND SECURITY AGREEMENT ("**Deed of Trust**") made this [date], among the trustor, [name(s)] ("**Borrower**"), whose address is [address], Aliso Viejo, California, [name] Title Company ("**Trustee**") and the City of Aliso Viejo, California ("**City**") as Beneficiary.

Borrower, in consideration of the promises herein recited and the trust herein created, irrevocably grants, transfers, conveys and assigns to Trustee, in trust, with power of sale, the property located in the City of Aliso Viejo, County of Orange, State of California, described in the attached Exhibit "1" and more commonly known as: [address], Aliso Viejo, California [zip code] ("**Property**").

TOGETHER with all the improvements now or hereafter erected on the Property, and all easements, rights, appurtenances, and all fixtures now or hereafter attached to the Property, all of which, including replacements and additions thereto, shall be deemed to be and remain a part of the Property covered by this Deed of Trust; and TOGETHER with all articles of personal property or fixtures now or hereafter attached to or used in and about the building or buildings now erected or hereafter to be erected on the Property which are necessary to the complete and comfortable use and occupancy of such building or buildings for the purposes for which they were or are to be erected, including all other goods and chattels and personal property as are ever used or furnished in operating a building, or the activities conducted therein, similar to the one herein described and referred to, and all renewals or replacements thereof or articles in substitution therefore, whether or not the same as, or shall be attached to said building or buildings in any manner; and all of the foregoing, together with the Property, is herein referred to as the "**Security**;"

To have and to hold the Security together with acquittances to Trustee, its successors and assigns forever;

TO SECURE to City the performance of the covenants and agreements of Borrower contained in the Owner Occupancy and Equity Sharing Agreement executed by and between Borrower and City ("**Equity Sharing Agreement**");

TO SECURE to City the repayment of the sums evidenced by a promissory note executed by Borrower and City dated [insert] ("**Note**"), which note provides for repayment of a City Subsidy in the amount of $[insert], and City's share of appreciation in the value of the Property, based on City's proportionate assistance to Borrower, as more particularly described in the Note and the Equity Sharing Agreement; and

TO SECURE the payment of all other sums, with interest thereon, advanced in accordance herewith to protect the security of this Deed of Trust; and the performance of the covenants and agreements Borrower herein contained.

BORROWER AND CITY COVENANT AND AGREE AS FOLLOWS:

1. Borrower's Estate. Borrower is lawfully seized of the estate hereby conveyed and has the right to grant and convey the Security, that other than this Deed of Trust, the Security is encumbered only by: (1) a deed of trust executed by Borrower in connection with a loan made to Borrower by [lender name] ("**First Lender**"), dated [date], executed by Borrower in favor of First Lender, securing a first mortgage loan ("**First Mortgage Loan**") to assist in the purchase of the Property ("**First Lender Deed of Trust**:); (2) the Note; (3) the Equity Sharing Agreement; and (4) any other deeds of trust or encumbrances approved by City. Borrower agrees to warrant and defend generally the title to the Security against all claims and demands, subject to any declarations, easements or restrictions listed in a schedule of exceptions to coverage in any title insurance policy insuring City's interest in the Security. As used in this Deed of Trust, the term "First Lender" shall include all successors and assigns of First Lender.

2. Repayment. Borrower will promptly repay, when due, all amounts due under the Note. The Note contains the following provisions concerning repayment under certain conditions:

> Borrower acknowledges that this Note is given in connection with the purchase of the Property as part of a City program to assist in the purchase of homes by [specify] income households. Consequently, this Note is not automatically assumable, but is subject to section 711.5 of the California Civil Code, which allows the City to accelerate all amounts due under this Note if any subsequent sale or transfer of the Property of any kind does not comply with the provisions of the Equity Sharing Agreement.

3. Equity Sharing Agreement. Borrower will observe and perform all of the covenants and agreements of the Equity Sharing Agreement.

4. Charges; Liens. Borrower will pay all taxes, assessments and other charges, fines and impositions attributable to the Security which may attain a priority over this Deed of Trust, by

making any payment, when due, directly to the payee thereof. Borrower will promptly furnish to City all notices of amounts due under this paragraph, and in the event Borrower makes payment directly, Borrower will promptly discharge any lien which has priority over this Deed of Trust; provided, that Borrower will not be required to discharge the lien of the First Lender Deed of Trust (securing the First Mortgage Loan) or any other lien described in this paragraph so long as Borrower will agree in writing to the payment of the obligation secured by such lien in a manner acceptable to City, or will, in good faith, contest such lien by, or defend enforcement of such lien in, legal proceedings which operate to prevent the enforcement of the lien or forfeiture of the Security or any part thereof.

5. Hazard Insurance. Borrower will keep the Security insured by a standard fire and extended coverage insurance policy in at least such amounts and for such periods as City may require, which amounts shall be the greater of (1) the sum of the loan amounts under the Note and the First Mortgage Loan or (2) the replacement cost of the Security, but in no event less than (3) the amount necessary to prevent Borrower from becoming a co-insurer under the terms of the policy.

The insurance carrier providing this insurance shall be licensed to do business in the State of California and be chosen by Borrower subject to approval by City; provided, that such approval will not be withheld if the insurer is also approved by the First Lender.

All insurance policies and renewals thereof will be in a form acceptable to City and will include a standard mortgagee clause with standard lender's endorsement in favor of the holder of the First Mortgage Loan and City as their interests may appear and in a form acceptable to City. City shall have the right to hold, or cause its designated agent to hold, the policies and renewals thereof, and Borrower shall promptly furnish to City, or its designated agent, the original insurance policies or certificates of insurance, all renewal notices and all receipts of paid premiums. In the event of loss, Borrower will give prompt notice to the insurance carrier and City or its designated agent. City, or its designated agent, may make proof of loss if not made promptly by Borrower. City shall receive 30 days advance notice of cancellation of any insurance policies required under this section.

Unless City and Borrower otherwise agree in writing, insurance proceeds, subject to the rights of the First Lender, will be applied to restoration or repair of the Security damaged, provided such restoration or repair is economically feasible and the Security of this Deed of Trust is not thereby impaired. If such restoration or repair is not economically feasible or if the Security of this Deed of Trust would be impaired, the insurance proceeds will be used to repay the loan under this Deed of Trust, with the excess, if any, paid to Borrower. If the Security is abandoned by Borrower, or if Borrower fails to respond to City, or its designated agent, within 30 days from the date notice is mailed by either of them to Borrower that the insurance carrier offers to settle a claim for insurance benefits, City, or its designated agent, is authorized to collect and apply the insurance proceeds at City's option either to restoration or repair of the Security or to repay the amounts due under the Note.

If the Security is acquired by City, all right, title and interest of Borrower in and to any insurance policy and in and to the proceeds thereof resulting from damage to the Security prior to

the sale or acquisition will pass to City to the extent of the sums secured by this Deed of Trust immediately prior to such sale or acquisition subject to the rights of First Lender.

6. Preservation and Maintenance of Security. Borrower will keep the Security in good repair and will not commit waste or permit impairment or deterioration of the Security.

7. Protection of City's Security. If Borrower fails to perform the covenants and agreements contained in this Deed of Trust or if any action or proceeding is commenced which materially affects City's interest in the Security, including, but not limited to, default under the First Lender Deed of Trust securing the First Mortgage Loan, eminent domain, insolvency, code enforcement, or arrangements or proceedings involving a bankrupt or decedent, then City, at City's option, upon notice to Borrower, may make such appearances, disburse such sums and take such action as it determines necessary to protect City's interest, including but not limited to, disbursement of reasonable attorneys' fees and entry upon the Security to make repairs.

Any amounts disbursed by City pursuant to this paragraph, with interest thereon, will become an indebtedness of Borrower secured by this Deed of Trust. Unless Borrower and City agree to other terms of payment, such amount will be payable upon notice from City to Borrower requesting payment thereof, and will bear interest from the date of disbursement at the rate payable from time to time on outstanding principal under the Note unless payment of interest at such rate would be contrary to applicable law, in which event such amounts will bear interest at the highest rate permissible under applicable law. Nothing contained in this paragraph will require City to insure any expense or take any action hereunder.

8. Inspection. City may make or cause to be made reasonable entries upon and inspections of the Security; provided that City will give Borrower reasonable notice of inspection.

9. Forbearance by City Not a Waiver. Any forbearance by City in exercising any right or remedy will not be a waiver of the exercise of any such right or remedy. The procurement of insurance or the payment of taxes or other liens or charges by City will not be a waiver of City's right to accelerate the maturity of the indebtedness secured by this Deed of Trust.

10. Remedies Cumulative. All remedies provided in this Deed of Trust are distinct and cumulative to any other right or remedy under this Deed of Trust or any other document, or afforded by law or equity, and may be exercised concurrently, independently or successively.

11. Successors and Assigns Bound. The covenants and agreements herein contained shall bind, and the rights hereunder shall inure to, the respective successors and assigns of City and Borrower subject to the provisions of this Deed of Trust.

12. Joint and Several Liability. All covenants and agreements of Borrower shall be joint and several.

13. Notice. Except for any notice required under applicable law to be given in another manner: (a) any notice to Borrower provided for in this Deed of Trust will be given by certified mail, addressed to Borrower at the address shown in the first paragraph of this Deed of Trust or

such other address as Borrower may designate by notice to City as provided herein; and (b) any notice to City will be given by express delivery, return receipt requested, to City at 12 Journey, Suite 100, Aliso Viejo, CA, 92656-5335, Attn: Mitzi Ortiz, City Manager, or to such other address as City may designate by notice to Borrower as provided above. Notice shall be effective as of the date received by City as shown on the return receipt.

14. Governing Law. This Deed of Trust shall be governed by the laws of the State of California.

15. Severability. If any provision or clause of this Deed of Trust, the Note, or the Equity Sharing Agreement conflict with applicable law, such conflict will not affect other provisions of this Deed of Trust, the Note, or the Equity Sharing Agreement which can be given effect without the conflicting provision, and to this end the provisions of the Deed of Trust, the Note, and the Equity Sharing Agreement are declared to be severable.

16. Captions. The captions and headings in this Deed of Trust are for convenience only and are not to be used to interpret or define the provisions hereof.

17. Acceleration; Remedies. Upon Borrower's breach of any covenant or agreement of Borrower in this Deed of Trust, including, but not limited to, the covenants to pay, when due, any sums secured by this Deed of Trust, City, prior to acceleration, will mail by express delivery, return receipt requested notice to Borrower specifying: (1) the breach; (2) the action required to cure such breach; (3) a date, not less than 30 days from the date the notice is received by Borrower as shown on the return receipt, by which such breach is to be cured; and (4) that failure to cure such breach on or before the date specified in the notice may result in acceleration of the sums secured by this Deed of Trust and sale of the Security. The notice will also inform Borrower of Borrower's right to reinstate after acceleration and the right to bring a court action to assert the nonexistence of default or any other defense of Borrower to acceleration and sale. If the breach is not cured on or before the date specified in the notice, City, at City's option, may: (a) declare all of the sums secured by this Deed of Trust to be immediately due and payable without further demand and may invoke the power of sale and any other remedies permitted by California law; (b) either in person or by agent, with or without bringing any action or proceeding, or by a receiver appointed by a court, and without regard to the adequacy of its security, enter upon the Security and take possession thereof (or any part thereof) and of any of the Security, in its own name or in the name of Trustee, and do any acts which it deems necessary or desirable to preserve the value or marketability of the Security, or part thereof or interest therein, increase the income therefrom or protect the security thereof. The entering upon and taking possession of the Security shall not cure or waive any breach hereunder or invalidate any act done in response to such breach and, notwithstanding the continuance in possession of the Security, City shall be entitled to exercise every right provided for in this Deed of Trust, or by law upon occurrence of any uncured breach, including the right to exercise the power of sale; (c) commence an action to foreclose this Deed of Trust as a mortgage, appoint a receiver, or specifically enforce any of the covenants hereof; (d) deliver to Trustee a written declaration of default and demand for sale, pursuant to the provisions for notice of sale found at California Civil Code Sections 2924, et seq., as amended from time to time; or (e) exercise all other rights and remedies provided herein, in the instruments by which Borrower acquires title to any Security, or in any other document or agreement now or hereafter

evidencing, creating or securing all or any portion of the obligations secured hereby, or provided by law.

City shall be entitled to collect all reasonable costs and expenses incurred in pursuing the remedies provided in this paragraph, including, but not limited to, reasonable attorney's fees and costs.

18. Borrower's Right to Reinstate. Notwithstanding City's acceleration of the sums secured by this Deed of Trust, Borrower will have the right to have any proceedings begun by City to enforce this Deed of Trust discontinued at any time prior to five days before sale of the Security pursuant to the power of sale contained in this Deed of Trust or at any time prior to entry of a judgment enforcing this Deed of Trust if: (a) Borrower pays City all sums which would be then due under this Deed of Trust and no acceleration under the Note has occurred; (b) Borrower cures all breaches of any other covenants or agreements of Borrower contained in this Deed of Trust; (c) Borrower pays all reasonable expenses incurred by City and Trustee in enforcing the covenants and agreements of Borrower contained in this Deed of Trust, and in enforcing City's and Trustee's remedies, including, but not limited to, reasonable attorney's fees; and (d) Borrower takes such action as City may reasonably require to assure that the lien of this Deed of Trust, City's interest in the Security and Borrower's obligation to pay the sums secured by this Deed of Trust shall continue unimpaired. Upon such payment and cure by Borrower, this Deed of Trust and the obligations secured hereby will remain in full force and effect as if no acceleration had occurred.

19. Reconveyance. Upon payment or forgiveness of all sums secured by this Deed of Trust, City will request Trustee to reconvey the Security and will surrender this Deed of Trust and the Note to Trustee. Trustee will reconvey the Security without warranty and without charge to the person or persons legally entitled thereto. Such person or persons will pay all costs of recordation, if any.

20. Substitute Trustee. City, at City's option, may from time to time remove Trustee and appoint a successor trustee to any Trustee appointed hereunder. The successor trustee will succeed to all the title, power and duties conferred upon the Trustee herein and by applicable law.

21. Superiority of First Lender Documents. Notwithstanding any provision herein, this Deed of Trust shall not diminish or affect the rights of First Lender under the First Lender Deed of Trust or any subsequent First Lender deeds of trust hereafter recorded against the Security in compliance with the requirements of Section 17 of the Equity Sharing Agreement.

Notwithstanding any other provision hereof, the provisions of this Deed of Trust shall be subordinate to the lien of the First Lender Deed of Trust and shall not impair the rights of the First Lender, or such lender's assignee or successor in interest, to exercise its remedies under its First Lender Deed of Trust in the event of default under its First Lender Deed of Trust by Borrower. Such remedies under the First Lender Deed of Trust include the right of foreclosure or acceptance of a deed or assignment in lieu of foreclosure. After such foreclosure or acceptance of a deed in lieu of foreclosure, this Deed of Trust shall be forever terminated and shall have no further effect as to the Property or any transferee thereafter; provided, however, if the holder of such First Lender Deed of Trust acquired title to the Property pursuant to a deed or assignment in lieu of foreclosure,

this Deed of Trust shall automatically terminate upon such acquisition of title, only if either a notice of default was recorded under the applicable First Lender Deed of Trust, or, if no notice of default was recorded (i) City has been given written notice of default under such First Lender Deed of Trust (which requirement shall be satisfied by notice of default required by California Civil Code Section 2924) and (ii) City elected not to cure the default within the period provided by law.

22. Request for Notice. Borrower requests that copies of the notice of default and notice of sale be sent to Borrower in accordance with Section 13 above.

IN WITNESS WHEREOF, Borrower has executed this Deed Of Trust as of the date first written above.

BORROWER:

EXHIBIT 1

Legal Description of Property

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF ALISO VIEJO, IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

PARCEL 1 OF PARCEL MAP 85-158, IN THE UNINCORPORATED AREA OF ORANGE COUNTY, STATE OF CALIFORNIA, FILED IN BOOK 218, PAGES 27 THROUGH 30 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO OIL, GAS, AND OTHER HYDROCARBON AND MINERAL SUBSTANCES LYING UNDER OR THAT MAY BE PRODUCED FROM THE ABOVE DESCRIBED LAND, TOGETHER WITH ONE HUNDRED PERCENT (100%) OF ALL RIGHTS TO THE PROCEEDS THEREFROM AND ONE HUNDRED PERCENT (100%) OF ALL RENTS, BONUSES, AND PROFITS ACCRUING THEREFROM, WITHOUT, HOWEVER, ANY RIGHTS INCLUDING RIGHTS OF ENTRY IN OR WITH RESPECT TO ANY PORTION OF THE SURFACE OR SUBSURFACE TO A VERTICAL DEPTH OF 500 FEET FROM THE SURFACE AS THE SAME MAY FROM TIME TO TIME EXIST, AS RESERVED BY
DEEDS FROM LLOYDS BANK OF CALIFORNIA, FORMERLY FIRST WESTERN BANK AND TRUST COMPANY, A CORPORATION, SUCCESSOR TO FIRST NATIONAL BANK IN SANTA ANA, A CORPORATION, RECORDED SEPTEMBER 30, 1976, IN BOOK 11908, PAGES 573 AND IN BOOK 11908, PAGE 582, BOTH OF OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA.

PARCEL B:
NON-EXCLUSIVE EASEMENTS FOR ACCESS, INGRESS, EGRESS, MAINTENANCE, REPAIR AND FOR OTHER PURPOSES, ALL AS DESCRIBED IN THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR ALISO VIEJO COMMUNITY ASSOCIATION RECORDED APRIL 6, 1982, AS INSTRUMENT NO. 82-118353 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA; THE NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR PACIFIC PARK BUSINESS CENTER 1 (DELEGATE DISTRICT NO. 14) OF ALISO VIEJO COMMUNITY ASSOCIATION, RECORDED APRIL 13, 1987, AS INSTRUMENT NO. 87-201111 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA, AS AMENDED BY THE FIRST CERTIFICATE OF AMENDMENT OF NOTICE OF ANNEXATION AND SUPPLEMENTAL DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS, PACIFIC PARK BUSINESS CENTER 1 (TERRACE A) RECORDED SEPTEMBER 4, 1987, AS INSTRUMENT NO. 87-505204 OF OFFICIAL RECORDS, ORANGE COUNTY, CALIFORNIA.

APN: 623-091-01

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Rose Rivera, Senior Planner
So Kim, Community Development Director

SUBJECT: CONSIDERATION OF AN URGENCY ORDINANCE AND A NON-URGENCY ORDINANCE AMENDING SECTION 15.14.080 REGARDING ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS AND DETERMINE THE ORDINANCES TO BE EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17

Recommended Actions:

1. Find that the adoption of the proposed urgency and non-urgency ordinance is statutorily exempt from review under the California Environmental Quality Act (CEQA) under Public Resources Code § 21080.17;

2. Adopt by title only an urgency ordinance entitled: AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH RECENT CHANGES IN STATE LAW AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17; and

3. Introduce for first reading by title only an ordinance entitled: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH RECENT CHANGES IN STATE LAW AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17.

Fiscal Impact:

There is no fiscal impact.

Background:

In recent years, the California Legislature has approved, and the Governor has signed into law, a number of bills to impose new limits on local authority to regulate ADUs and JADUs. In August of 2024, the City Council adopted Ordinance No. 2024-243 to comply with these regulations. In late 2025, four new bills were enacted that further amend state ADU law as summarized below. The proposed urgency ordinance and non-urgency ordinance will amend Section 15.4.080 of the Aliso Viejo Municipal Code to comply with recent changes to state law that impose new limits on local authority to regulate Accessory Dwelling Units (ADUs) and Junior Accessory Dwelling Units (JADUs). Both ordinances are identical, except that the urgency ordinance is being processed on an expedited basis as the new laws will take effect January 1, 2026.

Discussion:

To ensure the City's ADU ordinance remains valid and enforceable, it must be updated to comply with new state requirements. Failure to do so will render the existing ordinance null and void, leaving the City with no local regulations other than the minimal standards set forth in state law. Under those default provisions, ADUs and JADUs would be approved without local controls on height, setbacks, landscaping, architectural review, and other design standards and potentially impact neighborhood character, property values, privacy, and fire safety. Provided below is a summary of the proposed amendments to comply with state law.

1. Updated Government Code references.

2. Owner occupancy requirements for JADUs: Existing state law requires a property owner to reside in the JADU or the remaining portion of the single-family dwelling. This requirement now only applies when a JADU shares a bathroom with the main dwelling.

3. Certificate of Occupancy requirements: State law generally requires a Certificate of Occupancy (C of O) for the primary dwelling before one can be issued for an ADU. New state law creates exceptions for detached ADUs when a state of emergency has been declared, the primary dwelling was substantially damaged or destroyed, and the ADU has permits and passed inspections. In all other cases, the primary dwelling must still receive a C of O first.

4. Penalties for noncompliant ADU ordinances: Under existing law, local agencies are required to submit a copy of their ADU ordinance to the California Department of Housing and Community Development (HCD) within 60 days of adoption. New state law adds penalties for non-compliance by rendering null and void any local ordinance that is not submitted to HCD within 60 days of adoption or if the local agency fails to respond to HCD within 30 days of issuing findings.

5. ADU and JADU Size: New state law clarifies that the allowable square footage of the ADUs and JADUs only account for "livable interior space." Areas such as

closets, bathrooms, and hallways are not considered livable space and do not count toward the size limit.

6. Quantity of ADUs: Existing state law requires approval of four ADU types: converted and detached units on single-family lots, and converted and detached units on multifamily lots. New state law clarifies that these types can be combined, allowing both converted and detached ADUs on the same lot. A single-family property can now have a total of three types of ADUs, a converted ADU, a JADU, and a detached ADU. A multifamily property can now have both converted ADUs (up to 25% of the total units) and up to eight detached ADUs on the same lot.

7. Permitting Process: New state law requires local agencies to review application completeness within 15 business days, provide clear feedback, allow written appeals for denials or incompleteness, and issue a final decision on appeals within 60 business days.

Environmental:

Under California Public Resources Code section 21080.17, CEQA does not apply to the adoption of an ordinance by a city or county implementing the provisions of Chapter 13 of Division 1 of Title 7 of the California Government Code, which is California's ADU law. Therefore, the adoption of the proposed urgency Ordinance is statutorily exempt from CEQA in that it implements state ADU law.

Public Notice:

A public notice was published in the Orange County Register on November 20, 2025.

Attachments:

1. Proposed Urgency Ordinance
2. Proposed Non-Urgency Ordinance
3. Exhibit A – Amended AVMC Section 15.14.180
4. Presentation

URGENCY ORDINANCE NO. 2025-___

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, AMENDING SECTION 15.14.080 OF THE CITY OF ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH THE RECENT CHANGES IN STATE LAW, AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17

WHEREAS, the City of Aliso Viejo, California ("City") is a municipal corporation, duly organized under the constitution and laws of the State of California; and

WHEREAS, state law authorizes cities to act by ordinance to provide for the creation and regulation of accessory dwelling units ("ADUs") and junior accessory dwelling units ("JADUs"); and

WHEREAS, in recent years, the California Legislature has approved, and the Governor has signed into law, numerous bills that, among other things, amend various sections of the Government Code to impose new limits on local authority to regulate ADUs and JADUs; and

WHEREAS, in 2025, the California Legislature approved, and the Governor signed into law, further amendments to state ADU law; and

WHEREAS, new updates to state ADU law take effect January 1, 2026, and for the City's ADU ordinance to remain valid, it must be amended to reflect the most recent changes to state law; and

WHEREAS, the City desires to amend its local regulatory scheme for the construction of ADUs and JADUs to reflect the most recent changes to state law; and

WHEREAS, there is a current and immediate threat to the public health, safety, or welfare based on the passage of bills updating state ADU law because if the City's ordinance does not comply with this legislation by January 1, 2026 and the City's ADU ordinance becomes null and void in its entirety, the City would be required to approve ADUs and JADUs in accordance with the few default standards that are imposed by Chapter 13 of Division 1 of Title 7 of the California Government Code, which is the state ADU law; and

WHEREAS, the approval of ADUs and JADUs based solely on the default statutory standards, without local regulations governing height, setback, landscape, and architectural review, among other things, would threaten the character of existing neighborhoods, and negatively impact property values, personal privacy, and fire safety. These threats to public safety, health, and welfare justify adoption of this Ordinance as an urgency ordinance, to be effective immediately upon adoption by a four-fifths vote of the City Council; and

WHEREAS, to protect the public safety, health, and welfare, the City Council may adopt this Ordinance as an urgency measure in accordance with Government Code section 36937, subdivision (b).

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ALISO VIEJO DOES ORDAIN AS FOLLOWS:

Section 1: Incorporation of Recitals. The recitals above are each incorporated by reference and adopted as findings by the City Council.

Section 2: CEQA. Under California Public Resources Code section 21080.17, the California Environmental Quality Act ("CEQA") does not apply to the adoption of an ordinance by a city or county implementing the provisions of Article 2 of Chapter 13 of Division 1 of Title 7 of the California Government Code, which is California's ADU law. Therefore, adoption of the urgency Ordinance is statutorily exempt from CEQA in that it implements state ADU law.

Section 3: General Plan. The City Council hereby finds that the adoption of the urgency Ordinance is consistent with the General Plan as a matter of law under Government Code section 66314(c).

Section 4: Code Amendment. Section 15.14.080 of the Aliso Viejo Municipal Code is hereby amended and restated to read in its entirety as provided in Exhibit "A," attached hereto and incorporated herein by reference.

Section 5: Effective Date. This Ordinance takes effect immediately upon its adoption.

Section 6: HCD Submittal. In accordance with Government Code sections 66326 and 66333.5, the City Clerk is directed to submit a copy of this Ordinance to the California Department of Housing and Community Development within 60 days after adoption.

Section 7: Publication. The City Clerk is directed to certify to the adoption of this Ordinance and post or publish this Ordinance as required by law.

Section 8: Custodian of Records. The custodian of records for this Ordinance is the City Clerk and the records comprising the administrative record are located at 12 Journey, Suite 100, Aliso Viejo, CA 92656.

Section 9: Severability. If any provision of this Ordinance or its application to any person or circumstance is held to be invalid by a court of competent jurisdiction, such invalidity has no effect on the other provisions or applications of the Ordinance that can be given effect without the invalid provision or application, and to this extent, the provisions of this Ordinance are severable. The City Council declares that it would have adopted this Ordinance irrespective of the invalidity of any portion thereof.

PASSED, APPROVED AND ADOPTED this 3rd day of December, 2025.

_____
Tiffany Ackley
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, KATHY BAILOR, Interim City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that foregoing Ordinance No. 2025-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the 3rd day of December, 2025, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

I hereby certify that the foregoing is the original of Ordinance No. 2025-___ duly passed and adopted by the Aliso Viejo City Council at its regular meeting held December 3, 2025, and that the Ordinance was published on _____, 2025 in the Orange County Register.

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

EXHIBIT A
Amended AVMC Section 15.14.080

(follows this page)

ORDINANCE NO. 2026-___

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO, CALIFORNIA, AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17

WHEREAS, the City of Aliso Viejo, California ("City") is a municipal corporation, duly organized under the constitution and laws of the State of California; and

WHEREAS, state law authorizes cities to act by ordinance to provide for the creation and regulation of accessory dwelling units ("ADUs") and junior accessory dwelling units ("JADUs"); and

WHEREAS, in recent years, the California Legislature has approved, and the Governor has signed into law, numerous bills that, among other things, amend various sections of the Government Code to impose new limits on local authority to regulate ADUs and JADUs; and

WHEREAS, in 2025, the California Legislature approved, and the Governor signed into law, further amendments to state ADU law; and

WHEREAS, new updates to state ADU law take effect on January 1, 2026, and for the City's ADU ordinance to remain valid, it must be amended to reflect the most recent changes to state law; and

WHEREAS, the City desires to amend its local regulatory scheme for the construction of ADUs and JADUs to reflect the most recent changes to state law; and

WHEREAS, on December 3, 2025, the City Council held a duly noticed public hearing as prescribed by law and considered written and verbal public testimony that was submitted prior to the hearing and during the hearing, and evidence and recommendations presented by staff in the agenda report and oral presentation and introduced the Ordinance; and

WHEREAS, all legal prerequisites to the adoption of the Ordinance have occurred.

NOW, THEREFORE, the City Council of the City of Aliso Viejo does ordain as follows:

SECTION 1. Incorporation of Recitals. The recitals above are each incorporated by reference and adopted as findings by the City Council.

SECTION 2. CEQA. Under California Public Resources Code section 21080.17, the California Environmental Quality Act ("CEQA") does not apply to the adoption of an

ordinance by a city or county implementing the provisions of Chapter 13 of Division 1 of Title 7 of the California Government Code, which is California's ADU law. Therefore, adoption of the Ordinance is statutorily exempt from CEQA in that it implements state ADU law.

SECTION 3. General Plan. The City Council hereby finds that the adoption of the Ordinance is consistent with the General Plan as a matter of law under Government Code section 66314(c).

SECTION 4. Code Amendment. Section 15.14.080 of the Aliso Viejo Municipal Code is hereby amended and restated to read in its entirety as provided in Exhibit "A," attached hereto and incorporated herein by reference.

SECTION 5. Effective Date. This Ordinance takes effect 30 days after its adoption.

SECTION 6. HCD Submittal. In accordance with Government Code sections 66326 and 66333.5, the City Clerk is directed to submit a copy of this Ordinance to the California Department of Housing and Community Development within 60 days after adoption.

SECTION 7. Publication. The City Clerk is directed to certify to the adoption of this Ordinance and post or publish this Ordinance as required by law.

SECTION 8. Custodian of Records. The custodian of records for this Ordinance is the City Clerk and the records comprising the administrative record are located at 12 Journey, Suite 100, Aliso Viejo, CA 92656.

SECTION 9. Severability. If any provision of this Ordinance or its application to any person or circumstance is held to be invalid by a court of competent jurisdiction, such invalidity has no effect on the other provisions or applications of the Ordinance that can be given effect without the invalid provision or application, and to this extent, the provisions of this Ordinance are severable. The City Council declares that it would have adopted this Ordinance irrespective of the invalidity of any portion thereof.

PASSED, APPROVED AND ADOPTED this ___ day of _____, 2026.

_____
[Insert Name]
Mayor

APPROVED AS TO FORM:

_____
Scott C. Smith, City Attorney

ATTEST:

_____
Kathy Bailor, Interim City Clerk

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF ALISO VIEJO)

I, KATHY BAILOR, Interim City Clerk of the City of Aliso Viejo, California, DO HEREBY CERTIFY that foregoing Ordinance No. 2026-__ duly passed and adopted by the City Council of the City of Aliso Viejo at their regular meeting held on the ___ day of _____, 2026, by the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

I hereby certify that the foregoing is the original of Ordinance No. 2026-___ duly passed and adopted by the Aliso Viejo City Council at its regular meeting held _____, 2026, and that the Summary of the Ordinance was published on _____ in the Orange County Register.

_____
KATHY BAILOR
INTERIM CITY CLERK

(SEAL)

EXHIBIT A

Amended ADU Regulations

(follows this page)

15.14.080 Accessory dwelling units.

A. **Purpose**. The purpose of this section is to allow and regulate accessory dwelling units (ADUs) and junior accessory dwelling units (JADUs) in compliance with Chapter 13 of Division 1 of Title 7 of the California Government Code. ~~Sections 66310 through 66342~~.

B. **Effect of Conforming**. An ADU or JADU that conforms to the standards in this section will not be:

1. Deemed to be inconsistent with the city's general plan and zoning designation for the lot on which the ADU or JADU is located.

2. Deemed to exceed the allowable density for the lot on which the ADU or JADU is located.

3. Considered in the application of any local ordinance, policy, or program to limit residential growth.

4. Required to correct a nonconforming zoning condition, as defined in subsection (C)~~(7)~~(8) of this section. This does not prevent the city from enforcing compliance with applicable building standards in accordance with California Health and Safety Code Section 17980.12.

C. **Definitions**. As used in this section, terms are defined as follows:

1. "Accessory dwelling unit" or "ADU" means an attached or a detached residential dwelling unit that provides complete independent living facilities for one or more persons and is located on a lot with a proposed or existing primary residence. An accessory dwelling unit also includes the following:

   a. An efficiency unit, as defined by California Health and Safety Code section 17958.1; and

   b. A manufactured home, as defined by California Health and Safety Code. Section 18007.

2. "Accessory structure" means a structure that is accessory and incidental to a dwelling located on the same lot.

3. "Complete independent living facilities" means permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel as the single-family or multifamily dwelling is or will be situated.

4. "Efficiency kitchen" means a kitchen that includes all of the following:

a. A cooking facility with appliances;

b. A food preparation counter and storage cabinets that are of reasonable size in relation to the size of the JADU.

5. "Junior accessory dwelling unit" or "JADU" means a residential unit that satisfies all of the following:

a It is no more than 500 square feet of interior livable space in size.

b. It is contained entirely within an existing or proposed single-family structure; An enclosed use within the residence, such as an attached garage, is considered to be a part of and contained within the single-family structure.

c. It includes its own separate sanitation facilities or shares sanitation facilities with the existing or proposed single-family structure.

d. If the unit does not include its own separate bathroom, then it contains an interior entrance to the main living area of the existing or proposed single-family structure in addition to an exterior entrance that is separate from the main entrance to the primary dwelling.

~~e. It includes an exterior extrance that is separate from the main entrance to the primary dwelling.~~

ef. It includes an efficiency kitchen, as defined in subsection (C)(4) of this section.

6. "Livable space" means a space in a dwelling intended for human habitation, including living, sleeping, eating, cooking or sanitation.

7.~~6.~~ "Living area" means the interior habitable area of a dwelling unit, including basements and attics, but does not include a garage or any accessory structure.

8~~7~~. "Nonconforming zoning condition" means a physical improvement on a property that does not conform with current zoning standards.

9~~8~~. "Passageway" means a pathway that is unobstructed clear to the sky and extends from a street to one entrance of the ADU or JADU.

10~~9~~. "Proposed dwelling" means a dwelling that is the subject of a permit application and that meets the requirements for permitting.

11~~10~~. "Public transit" means a location, including, but not limited to, a bus stop or train station, where the public may access buses, trains, subways, and other

forms of transportation that charge set fares, run on fixed routes, and are available to the public.

12~~11~~. "Tandem parking" means that two or more automobiles are parked on a driveway or in any other location on a lot, lined up behind one another.

D. **Applications.**

1. An application for an ADU that is subject only to a building permit under subsection (E) of this section shall be submitted to the building division. Site plans, floor plans, and elevations shall be submitted with the application and documents required for submittal to the building division.

2. An application for a development review permit (DRP) under subsection (F) of this section shall be submitted to the planning division. Site plans, floor plans, elevations, a project narrative, draft deed restrictions, and evidence of having given notice to the HOA, if applicable, shall be submitted with the application.

3. Upon receipt of an application for a DRP, the city will provide written notice via email to the applicable HOA on record, if any, that includes the project address and description. Irrespective of this notification requirement, all applications to create an ADU or JADU will be considered and approved ministerially, without discretionary review or a hearing.

E. **Approvals – Building-Permit Only**. If any ADU or JADU complies with each of the general requirements in subsection (G~~H~~)(1) below, it is allowed with only a building permit. ~~in the following scenarios:~~

~~1. Converted on Single-family Lot. One ADU as described in this subsection (E)(1) and one JADU on a lot with a proposed or existing single-family dwelling on it, where the ADU or JADU:~~

~~a. Is either: within the space of a proposed single-family dwelling; within the existing space of an existing single-family dwelling; or (in the case of an ADU only) within the existing space of an accessory structure, plus up to 150 additional square feet if the expansion is limited to accommodating ingress and egress; and~~

~~b. Has exterior access that is independent of that for the single-family dwelling; and~~

~~c. Has side and rear setbacks sufficient for fire and safety, as dictated by applicable building and fire codes.~~

~~d. The JADU complies with the requirements of Government Code sections 66333 through 66339.~~

~~2. Limited Detached on Single-family Lot. One detached, new construction ADU on a lot with a proposed or existing single-family dwelling (in addition to any JADU that might otherwise be established on the lot under subsection (E)(1) of this section), if the detached ADU satisfies each of the following limitations:~~

~~a. The side- and rear-yard setbacks are at least four feet;~~

~~b. The total floor area is 800 square feet or smaller; and~~

~~c. The peak height above grade does not exceed the applicable height limit in subsection (H)(2) below.~~

~~3. Converted on Multifamily Lot. One or more ADUs within portions of existing multifamily dwelling structures that are not used as livable space, including but not limited to storage rooms, boiler rooms, passageways, attics, basements, or garages, if each converted ADU complies with state building standards for dwellings. Under this subsection (E)(3), at least one converted ADU is allowed within an existing multifamily dwelling, up to a quantity equal to 25 percent of the existing multifamily dwelling units.~~

~~4. Limited Detached on Multifamily Lot. No more than two detached ADUs on a lot that has an existing or proposed multifamily dwelling if each detached ADU satisfies both of the following limitations:~~

~~a. The side- and rear-yard setbacks are at least four feet. If the existing multifamily dwelling has a rear or side yard setback of less than four feet, the city will not require any modification to the existing setbacks as a condition of approving the ADU; and~~

~~b. The peak height above grade does not exceed the applicable height limit provided in subsection (H)(2) of this section.~~

F. **Approvals - Development Review Permit (DRP)**.

1. ADU may be created without both a building permit and a Development Review Permit in compliance with the standards set forth in subsections (H) and (I) of this section.

2. The city may charge a fee to reimburse it for costs incurred in processing DRP permit, including the costs of adopting or amending the city's ADU ordinance. The DRP permit processing fee is set in accordance with a resolution adopted by the City Council.

3. Processing and Timing.

a. Completeness.

i. Determination in 15 days. The city will determine whether an application to create or serve an ADU or JADU is complete and will provide written notice of the determination to the applicant within 15 business days after the city receives the application submittal.

ii. ~~b~~Incomplete items. If the city's determination under subsection (d)(3)(A)(i) above is that the application is incomplete, the city's notice must list the incomplete items and describe how the application can be made complete.

iii. Cure. After receiving a notice that the application is incomplete, the applicant may cure and address the items that were deemed by the city to be incomplete.

iv. Subsequent submittals. If the applicant submits additional information to address incomplete items, within 15 business days of the subsequent submittal the city will determine in writing whether the additional information remedies all the incomplete items that the city identified in its original notice. The city may not require the application to include an item that was not included in the original notice.

v. Deemed complete. If the city does not make a timely determination as required by this subsection (A), the application or resubmitted application is deemed complete for the purposes of subsection (D)(3)(c) below.

~~iv.~~vi. Appeal of incompleteness. An applicant may appeal the city's determination that the application is incomplete by submitting a written appeal to the city clerk. The city council will review the written appeal and affirm or reverse the completeness determination and provide a final written determination to the applicant within 60 business days after receipt of the appeal.

vii. No discretion or hearing. Ministerial permits for an ADU or JADU are considered and approved without discretionary review or a hearing.

~~v.~~viii. Deadline to approve or deny ministerial approvals. The city must approve or deny an application to create an ADU or JADU within

60 days from the date that the city receives a complete application. If the city has not approved or denied the complete application within 60 days, the application is deemed approved unless either:

1. The applicant requests a delay, in which case the 60-day time period is tolled for the period of the requested delay, or

2. When an application to create an ADU or JADU is submitted with a permit application to create a new single-family or multifamily dwelling on the lot, the city may delay acting on the permit application for the ADU or JADU until the city acts on the permit application to create the new single-family or multifamily dwelling, but the application to create the ADU or JADU will still be considered ministerially without discretionary review or a hearing.

ix. Denial. If the city denies an application to create an ADU or JADU, the city must provide the applicant with comments that include, among other things, a list of all the defective or deficient items and a description of how the application may be remedied by the applicant. Notice of the denial and corresponding comments must be provided to the applicant within the 60-day time period established by subsection (d)(3)(a) of this section.

x. Appeal of denial. An applicant may appeal the city's denial of the application by submitting a written appeal to the city clerk. The city council will review the written appeal and affirm or reverse the denial and provide a final written determination to the applicant within 60 business days after receipt of the appeal. Decisions by the city council are final and shall become effective immediately except as otherwise provided in the approving action and except for actions by ordinance.

~~vi.~~xi. Concurrent review of demolition. A demolition permit for a detached garage that is to be replaced with an ADU is reviewed with the application for the ADU and issued at the same time.

~~An application to create an ADU or JADU under this section will be considered and approved ministerially, without discretionary review or a hearing.~~

~~2. The city must approve or deny an application to create an ADU or JADU within 60 days from the date that the city receives a completed application if there is an existing single-family or multifamily dwelling on the lot. If the~~

~~city has not approved or denied the completed application within 60 days, the application is deemed approved unless either:~~

~~a. The applicant requests a delay, in which case the 60-day time period is tolled for the period of the requested delay; or~~

~~b. When an application to create an ADU or JADU is submitted with a permit application to create a new single-family or multifamily dwelling on the lot, the city may delay acting on the permit application for the ADU or JADU until the city acts on the permit application to create the new single-family or multifamily dwelling, but the application to create the ADU or JADU will still be considered ministerially without discretionary review or a hearing.~~

~~3. If the city denies an application to create an ADU or JADU, the city must provide the applicant with comments that include, among other things, a list of all the defective or deficient items and a description of how the application may be remedied by the applicant. Notice of the denial and corresponding comments must be provided to the applicant within the 60-day time period established by subsection (G)(2) of this section.~~

G. **Classes.**

1. Class 1: Statutorily Regulated. Class 1 ADUs and JADUs are approved under Government Code section 66323. If an ADU or JADU complies with each of the general requirements in subsection (H~~F~~) below, it is allowed in each of the scenarios provided in this subsection (G~~E~~)(1). An ADU and JADU approved under subsection (G~~E~~)(1~~1~~)(a~~a~~) may be combined with an ADU approved under subsection (G)(1)(b)~~Eb~~, and ADUs approved under subsection (G~~E~~)(1)(c) may be combined with ADUs approved under subsection (G~~E~~)(1)(d).

   a. Converted on Lot with Single-Family: One ADU as described in this subsection (G~~E~~)(1)(a) and one JADU on a lot with a proposed or existing single-family dwelling on it, where the ADU or JADU:

      i. Is either: within the space of a proposed single-family dwelling; within the existing space of an existing single-family dwelling; or (in the case of an ADU only) within the existing space of an accessory structure, plus up to 150 additional square feet if the expansion is limited to accommodating ingress and egress; and

      ii. Has exterior access that is independent of that for the single-family dwelling; and

iii. Has side and rear setbacks sufficient for fire and safety, as dictated by applicable building and fire codes;

iv. The maximum size of a detached or attached ADU subject to this subsection (I) is 850 square feet of interior livable space for a studio or one-bedroom unit and 1,000 square feet of interior livable space for a unit with two or more bedrooms.

v.~~i~~ The JADU complies with the requirements of Government Code sections 66333 through 66339.

b. Limited Detached on Lot with Single-Family: One detached, new-construction ADU on a lot with a proposed or existing single-family dwelling, if the detached ADU satisfies each of the following limitations:

i. The side- and rear-yard setbacks are at least four feet.

ii. The total floor area is 800 square feet of livable space or smaller.

iii. The peak height above grade does not exceed the applicable height limit in subsection (F)(2) below.

c. Converted on Lot with Multifamily: One or more ADUs within portions of existing multifamily dwelling structures that are not used as livable space, including but not limited to storage rooms, boiler rooms, passageways, attics, basements, or garages, if each converted ADU complies with state building standards for dwellings. Under this subsection (E)(1)(c), at least one converted ADU is allowed within an existing multifamily dwelling, up to a quantity equal to 25 percent of the existing multifamily dwelling units.

d. Limited Detached on Lot with Multifamily: No more than two detached ADUs on a lot with a proposed multifamily dwelling, or up to eight detached ADUs on a lot with an existing multifamily dwelling, if each detached ADU satisfies all of the following:

i. The side- and rear-yard setbacks are at least four feet. If the existing multifamily dwelling has a rear or side yard setback of less than four feet, the city will not require any modification to the multifamily dwelling as a condition of approving the ADU.

ii. The peak height above grade does not exceed the applicable height limit provided in subsection (F)(2) below.

iii. If the lot has an existing multifamily dwelling, the quantity of detached ADUs does not exceed the number of primary dwelling units on the lot.

2. Class 2: Locally Regulated. Class 2 ADUs are approved under Government Code sections 66314–66322. Except for Class 1 ADUs approved under subsection (E)(1) above, all ADUs are subject to the standards set forth in subsections (F) and (G) below.

H. General ~~ADU and JADU~~ Requirements. ~~The following requirements apply to all ADUs and JADUs that are approved under subsections (E) and (F) of this section:~~ The following requirements apply to all Class 1 and Class 2 ADUs and JADUs:

1. Zoning.

a. A Class 1 ADU approved under subsection (G~~E~~)(1) may be created on a lot in a residential or mixed-use zone.

b. A Class 2 ADU approved under subsection (G~~E~~)(2) above may be created on a lot that is zoned to allow single-family dwelling residential use or multifamily dwelling residential use.

c. In accordance with Government Code section 66333(a), a JADU may only be created on a lot zoned for single-family residences.

2. Height.

a. Except as otherwise provided by subsections (H)(2)(b) or (H)(2)(c) of this section, a detached ADU created on a lot with an existing or proposed single family or multifamily dwelling unit may not exceed 16 feet in height.

b. A detached ADU may be up to 18 feet in height if it is created on a lot with an existing or proposed single family or multifamily dwelling unit that is located within one-half mile walking distance of a major transit stop or a high quality transit corridor, as those terms are defined in Section 21155 of the Public Resources Code, and the ADU may be up to two additional feet in height (for a maximum of 20 feet) if necessary to accommodate a roof pitch on the ADU that is aligned with the roof pitch of the primary dwelling unit.

c. A detached ADU created on a lot with an existing or proposed multifamily dwelling that has more than one story may not exceed 18 feet in height.

d. An ADU that is attached to the primary dwelling may not exceed 25 feet in height or the height limitation imposed by the underlying zone that applies to the primary dwelling, whichever is lower. Notwithstanding the foregoing, ADUs subject to this subsection (H)(2)(d) may not exceed two stories.

e. For purposes of this subsection (H)(2), height shall be measured as defined in the California Building Code.

3. Fire Sprinklers.

a. Fire sprinklers, approved by Orange County Fire Authority (OCFA), are required in an ADU if sprinklers are required in the primary residence when constructed.

b. The construction of an ADU does not trigger a requirement for fire sprinklers to be installed in the existing primary dwelling.

4. Rental Term. No ADU or JADU may be rented for a term that is shorter than 30 days. This prohibition applies regardless of when the ADU or JADU was created.

5. No Separate Conveyance. An ADU or JADU may be rented, but, except as otherwise provided in Government Code section 66341, no ADU or JADU may be sold or otherwise conveyed separately from the lot and the primary dwelling (in the case of a single-family lot) or from the lot and all of the dwellings (in the case of a multifamily lot).

6. Septic System. If the ADU or JADU will connect to ~~an existing~~ on-site wastewater ~~water treatment~~ system ~~serving the property~~, the owner must include with the application a percolation test completed within the last five years or, if the percolation test has been recertified, within the last 10 years. ~~If the property on which the ADU or JADU is constructed does not utilize an on-site water treatment system, nothing in this section authorizes an ADU or JADU to utilize an on-site water treatment system.~~

7. Owner Occupancy.

a. JADUs are generally subject to an owner-occupancy requirement. A natural person with legal or equitable title to the property must reside on the property, in either the primary dwelling or JADU, as the person's legal domicile and permanent residence. ~~However, the owner-occupancy requirement of this subsection does not apply if the property is entirely owned by another governmental agency, land trust, or housing organization.~~

i. Exceptions. The owner-occupancy requirement in this subsection (H)(7)(a) does not apply in either of the following situations:

1. The JADU has separate sanitation facilities (i.e., does not share sanitation facilities with the existing primary dwelling unit structure).

~~1.~~2. The property is entirely owned by another governmental agency, land trust, or housing organization.

8. Deed Restriction. Prior to issuance of a ~~building permit~~certificate of occupancy for a JADU, a deed restriction must be recorded against the title of the property in the county recorder's office and a copy filed with the director. The deed restriction must run with the land and bind all future owners. The form of the deed restriction will be provided by the city and must provide that:

a. The JADU may not be sold separately from the primary dwelling.

b. The JADU is restricted to the approved size and to other attributes allowed by this section.

c. The deed restriction runs with the land and may be enforced against future property owners.

d. The deed restriction may be removed if the owner eliminates the JADU, as evidenced by, for example, removal of the kitchen facilities. To remove the deed restriction, an owner may make a written request of the director, providing evidence that the JADU has in fact been eliminated. The director may then determine whether the evidence supports the claim that the JADU has been eliminated. Appeal may be taken from the director's determination consistent with other provisions of this code. If the JADU is not entirely physically removed, but is only eliminated by virtue of having a necessary component of a JADU removed, the remaining structure and improvements must otherwise comply with applicable provisions of this code.

e. The deed restriction is enforceable by the director or his or her designee for the benefit of the city. Failure of the property owner to comply with the deed restriction may result in legal action against the property owner, and the city is authorized to obtain any remedy available to it at law or equity, including, but not limited to, obtaining an injunction enjoining the use of the JADU in violation of the recorded restrictions or abatement of the illegal unit.

9. Building & Safety.

a. Must comply with Building Code. Subject to subsection (H)(9)(b) of this section, all ADUs and JADUs must comply with all local building code requirements.

b. No change of occupancy. Construction of an ADU does not constitute a Group R occupancy change under the local building code, as described in Section 310 of the California Building Code, unless the building official or code enforcement division officer makes a written finding based on substantial evidence in the record that the construction of the ADU could have a specific, adverse impact on public health and safety. Nothing in this subsection (H)(9)(b) prevents the city from changing the occupancy code of a space that was uninhabitable space or that was only permitted for nonresidential use and was subsequently converted for residential use in accordance with this section.

10. Certificate of Occupancy Timing.

a. Generally. No certificate of occupancy for an ADU or JADU may be issued before the certificate of occupancy is issued for the primary dwelling unit.

b. Limited Exception for State-declared Emergencies. Notwithstanding subsection (F)(10)(A) of this section, a certificate of occupancy for an ADU may be issued before a certificate of occupancy for the primary dwelling if each of the following requirements are met:

(i) The county is subject to a proclamation of a state of emergency made by the California Governor on or after February 1, 2025.

(ii) The primary dwelling was substantially damaged or destroyed by an event referenced in the Governor's state of emergency proclamation.

(iii) The ADU has been issued construction permits and has passed all required inspections.

~~(i)~~(iv) The ADU is not attached to the primary dwelling.

~~I~~H. Specific DRP Requirements. The following requirements apply only to Class 2 ADUs that require a DRP permit under subsection (G~~F~~)(2) of this section. This subsection (I) does not apply to Class 1 ADUs or JADUs approved under subsection (G)(1) of this section.

1. Maximum Size.

   a. The maximum size of a detached or attached ADU subject to this subsection (I) is 850 square feet of interior livable space for a studio or one-bedroom unit and 1,000 square feet of interior livable space for a unit with two or more bedrooms.

   b. An attached ADU that is created on a lot with an existing primary dwelling is further limited to 50 percent of the floor area of the existing primary dwelling.

   c. Application of other development standards in this subsection (I), such as FAR or lot coverage, might further limit the size of the ADU, but no application of FAR, lot coverage, open space, or the percentage-based size limit in subsection (I)(1)(b) above may require the ADU to be less than 800 square feet of interior livable space.

2. Setback. ADUs subject to this subsection (I) shall comply with the following setbacks:

   a. ~~Front-yard s~~Setbacks.

      i. ~~Subject to subsection (I)(2)(a)(ii) below, no part of any ADU subject to this subsection (I) may be located within 10 feet of a front property line or have a front yard setback that is less than the primary dwelling.~~ ADUs that are subject to this subsection (I) must conform to 4-foot side and rear setbacks. ADUs that are subject to this subsection (I) must conform to 25-foot front setbacks, subject to subsection (I)(1)(c) above.

      iii. ~~If a front yard setback is the only location on the lot where an ADU may be lawfully constructed, then the ADU may encroach into a required front yard setback as necessary to enable the construction of an 800 square foot unit.~~

   ~~b. An ADU that is subject to this subsection (I) must conform to 4-foot side and rear yard setbacks.~~

      ii.~~c.~~ No setback is required for an ADU that is subject to this subsection (I) if the ADU is constructed in the same location and to the same dimensions as an existing structure.

3. Lot Coverage. No ADU subject to this subsection (I) may cause the total lot coverage of the lot to exceed 75 percent, subject to subsection (I)(1)(c) of this section.

4. Minimum Open Space. For multifamily residential projects, no ADU subject to this subsection (I) may cause the total percentage of open space of the development to fall below 25 percent, subject to subsection (I)(1)(c) of this section.

5. Passageway. No passageway, as defined in subsection (C)(9~~11~~) above, is required for an ADU.

6. Parking.

   a. Generally. One off-street parking space is required for each ADU or bedroom, whichever is less. The parking space may be provided in setback areas or as tandem parking, as defined in subsection (C)(12~~1~~) of this section. ~~No parking is required for a JADU~~.

   b. Exceptions. No parking under subsection (I)(6)(a) of this section is required in the following situations:

      i. The ADU is located within one-half mile walking distance of public transit, as defined in subsection (C)(11~~0~~) of this section.

      ii. The ADU is located within an architecturally and historically significant historic district.

      iii. The ADU is part of the proposed or existing primary residence or an accessory structure.

      iv. When on-street parking permits are required but not offered to the occupant of the ADU.

      v. When there is an established car share vehicle stop located within one block of the ADU.

      vi. When the permit application to create an ADU is submitted with an application to create a new single-family or new multifamily dwelling on the same lot, provided that the ADU or the lot satisfies any other criteria listed in subsections (I)(6)(b)(i) through (I)(6)(b)(v) of this section.

   c. No Replacement. When a garage, carport, ~~or~~ covered parking structure or uncovered parking space is demolished in conjunction with the construction of an ADU or converted to an ADU, those off-street parking spaces ~~for the primary residence~~ are not required to be replaced. ~~Parking for the ADU will apply under subsections (I)(6)(a) and (I)(6)(b) of this section.~~

7. Architectural Requirements.

a. The materials and colors of the exterior walls ~~and~~, roof, windows and doors must ~~match~~ be the same as those of the primary dwelling.

b. The roof slope must match that of the dominant roof slope of the primary dwelling. The dominant roof slope is the slope shared by the largest portion of the roof.

c. The exterior lighting must be llimited~~designed or shielded~~ to ~~direct~~down lights ~~downward~~ or as otherwise required by the building or fire code.

d. The ADU must have an independent exterior entrance, apart from that of the primary dwelling.

e. The interior horizontal dimensions of an ADU must be at least 10 feet wide in every direction, with a minimum interior wall height of seven feet.

f. No window or door of the ADU may have a direct line of sight to an adjoining residential property. Each window and door must either be located where there is no direct line of sight or screened using fencing, landscaping, or privacy glass to prevent a direct line of sight.

g. All windows ~~located~~ and doors in an ADU less than 30 feet from a property line that is not a public right-of-way line must either be (for windows) clerestory with the bottom of the glass at least six feet above the finished floor, or (for windows and for doors) utilize obscure glass, such as frosted, patterned, bubble effect, ribbed, or other similar design.

h~~f~~. Mechanical equipment may not be placed within four feet of an adjacent property.

8. Allowed Stories. No ADU subject to this subsection (g) may have more than one story, except that an ADU that is attached to the primary dwelling may have the stories allowed under subparagraph (F)(2)(D) of this section.

J. Fees. The following requirements apply to all Class 1 ADUs and JADUs and Class 2 ADUs that are approved under subsections (E) and (F) of this section.

1. Impact Fees.

a. No impact fee is required for a JADU or for an ADU that is less than 750 square feet ~~in size~~ of interior livable space.. For purposes of this

subsection (J)(1), "impact fee" means a "fee" under the Mitigation Fee Act (Gov. Code § 66000(b)) and a fee under the Quimby Act (Gov. Code § 66477). "Impact fee" here does not include any connection fee or capacity charge for water or sewer service.

b. A JADU or ADU with less than 500 square feet of interior livable space does not increase assessable space by 500 square feet for purposes of Education Code section 17620(a)(1)(C), and is therefore not subject to school fees under Education Code section 17620.

c. Any impact fee that is required for an ADU that is 750 square feet or ~~larger in size~~ more of interior livable space must be charged proportionately in relation to the square footage of the primary dwelling unit (E.g., the floor area of the ADU, divided by the floor area of the primary dwelling, times the typical fee amount charged for a new dwelling).

2. Utility Fees.

a. If an ADU or JADU is constructed with a new single-family home, a separate utility connection directly between the ADU or JADU and the utility and payment of the normal connection fee and capacity charge for a new dwelling may be~~are~~ required.

b. Except as described in subsection (J)(2)(a), JADUs and converted ADUs on a single-family lot that are created under subsection (E)(1) above are not required to have a new or separate utility connection directly between the JADU or the ADU and the utility. Nor is a connection fee or capacity charge required. Notwithstanding the rest of this paragraph, a direct utility connection is required for separate conveyance of an ADU when separate conveyance is allowed under this code.

c. Except as described in subsection (J)(2)(a), all ADUs not covered by subsection (J)(2)(b) may require a new, separate utility connection directly between the ADU and the utility for any utility that is provided by the city. All utilities that are not provided by the city are subject to the connection and fee requirements of the utility provider.

i. The connection is subject to a connection fee or capacity charge that is proportionate to the burden created by the ADU, based on either the floor area or the number of drainage-fixture units (DFU) values, as defined by the Uniform Plumbing Code, upon the water or sewer system.

ii. The portion of the fee or charge that is charged by the city may not exceed the reasonable cost of providing this service.

K. Nonconforming Zoning Code Conditions, Building Code Violations, and Unpermitted Structures.

1. Generally. The city will not deny an ADU or JADU application due to a nonconforming zoning condition, building code violation, or unpermitted structure on the lot that does not present a threat to the public health and safety and that is not affected by the construction of the ADU or JADU.

2. Unpermitted ADUs and JADUs constructed before 2020~~2018~~.

a. Permit to Legalize. As required by state law, the city may not deny a permit to legalize an existing but unpermitted ADU that was constructed before January 1, 2020~~2018,~~ if denial is based on either of the following grounds:

i. The ADU or JADU violates applicable building standards; or

ii. The ADU or JADU does not comply with the state ADU or JADU law or this ADU ordinance (~~this~~ section15.14.080).

b. Exceptions:

i. Notwithstanding subsection (K)(2)(a) above, the city may deny a permit to legalize an existing but unpermitted ADU or JADU that was constructed before January 1, 2020~~2018~~, if the city makes a finding that correcting a violation is necessary to ~~protect the health and safety of the public or of occupants of the structure~~ comply with the standards specified in California Health.and Safety Code section 17920.3.

ii. Subsection (K)(2)(a) above does not apply to a building that is deemed to be substandard in accordance with California Health and Safety Code section 17920.3.

L. Nonconforming ADUs and Discretionary Approval. Any proposed ADU or JADU that would otherwise be allowed under this section but that does not conform to the objective design or development standards set forth in subsections (A) through (K) of this section may be allowed by the city with a conditional use permit, in accordance with the other provisions of this title.

ALISO VIEJO

CONSIDERATION OF AN URGENCY ORDINANCE AND A NON-URGENCY ORDINANCE AMENDING SECTION 15.14.080 REGARDING ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS

City Council

December 3, 2025

Background

- Numerous bills took effect which imposed limits on regulating ADUs and JADUs
- The City Council last adopted an ordinance in late 2024 to comply with these regulations
- Four new bills were enacted in late 2025 to further amend state ADU law

Key Changes

Updates to:

- Government Code references
- Owner occupancy requirements for JADUs
- Certificate of Occupancy requirements for ADUs
- Penalties for noncompliant ADU ordinances
- ADU and JADU Size
- Quantity of ADUs
- Permitting Process

Staff Recommendation to City Council:

1. Find that the adoption of the proposed urgency and non-urgency ordinance is statutorily exempt from review under the California Environmental Quality Act (CEQA) under Public Resources Code § 21080.17;

2. Adopt by title only an urgency ordinance entitled:

   AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH RECENT CHANGES IN STATE LAW AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17; and

3. Introduce for first reading by title only an ordinance entitled:

   AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ALISO VIEJO AMENDING SECTION 15.14.080 OF THE ALISO VIEJO MUNICIPAL CODE RELATING TO ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS TO COMPLY WITH RECENT CHANGES IN STATE LAW AND FINDING THE ACTION TO BE STATUTORILY EXEMPT FROM CEQA UNDER PUBLIC RESOURCES CODE § 21080.17.

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: So Kim, Community Development Director

SUBJECT: CONCEPT PLAN REVIEW FOR A RESIDENTIAL COMMUNITY AT 1-5 POLARIS

Recommended Action:

Review and provide initial feedback on concept plans for a development proposal involving the demolition of five existing office buildings to accommodate the construction of a 405-unit, residential community at 1-5 Polaris ("Project").

Fiscal Impact:

None.

Background:

On November 10, 2025, Shea Homes ("Applicant") submitted a preapplication to demolish five existing office buildings to accommodate the construction of a 405-unit, residential community at 1-5 Polaris.

Discussion:



Existing Site: The existing site comprises five separate parcels, each developed with an office building and associated surface parking (see image to the right). Collectively, these properties total approximately 22.5 acres in size ("Site"). Access to the Site is provided via two driveways located along the northern property line facing Aliso Viejo Parkway. The General Plan designation for the Site is Professional Office use for both land use and zoning. Additionally, Lots 1, 4, and 5, highlighted in yellow, are located within the Mixed Use/Residential Overlay District, which permits a combination of residential and non-residential uses.

Proposed Project: The Applicant proposes to demolish the existing office development and redevelop the site as a gated residential community consisting of 405 for-sale units at an overall density of 18 dwelling units per acre. The Project will feature four three-story housing types: 105 duplexes, 108 townhomes, 100 back-to-back units (rear wall attached), and 92 rowtown units (side walls attached), with homes ranging from approximately 1,286 square feet for two-bedroom units to 2,484 square feet for four-bedroom units. Each unit will include an enclosed two-car garage, with rowtown units providing two tandem garage spaces, for a total of 810 private parking spaces. An additional 151 guest parking spaces will be distributed throughout the Site as street parking and in smaller parking lots, resulting in a total of 961 parking spaces for the Project. The Project will provide 6.5 acres of open space, representing 29% of the site, featuring a 56,200-square-foot pool and recreation complex near the primary entry. Additional amenities include a half-mile perimeter walking trail, multiple courtyards, and common open space areas throughout the community. A 30-foot landscaped buffer is proposed along the entire Aliso Viejo Parkway frontage to complement the existing buffer across the street.

Affordable Housing: The Project includes 405 units, with 21 units (5%) designated as affordable housing for very low-income households. This qualifies the Project for a density bonus along with associated incentives, concessions, waivers, and reduced parking requirements, allowing modified development standards such as lot coverage, heights, setbacks, and parking ratios. Although eligible for additional density under state law, the Applicant is not requesting any increase beyond the proposed 405 units, while certain development standard modifications are anticipated.

Required Entitlements: The Project requires a tentative tract map and amendments to the General Plan land use and zoning designations to Medium Density Residential (greater than 8 to 18 dwelling units per acre), which will permanently change permitted uses to residential. A site development permit will be required for new construction, along with a development agreement.

Environmental:

The Applicant anticipates less than significant environmental impacts with appropriate mitigation measures and is preparing an Initial Study/Mitigated Negative Declaration as part of the formal Project submittal.

Public Notice:

A public notice was published in the Laguna Niguel News and mailed to all property owners within 300 feet of the subject site.

Attachments:

1. Concept Plans
2. Project Description
3. Presentation

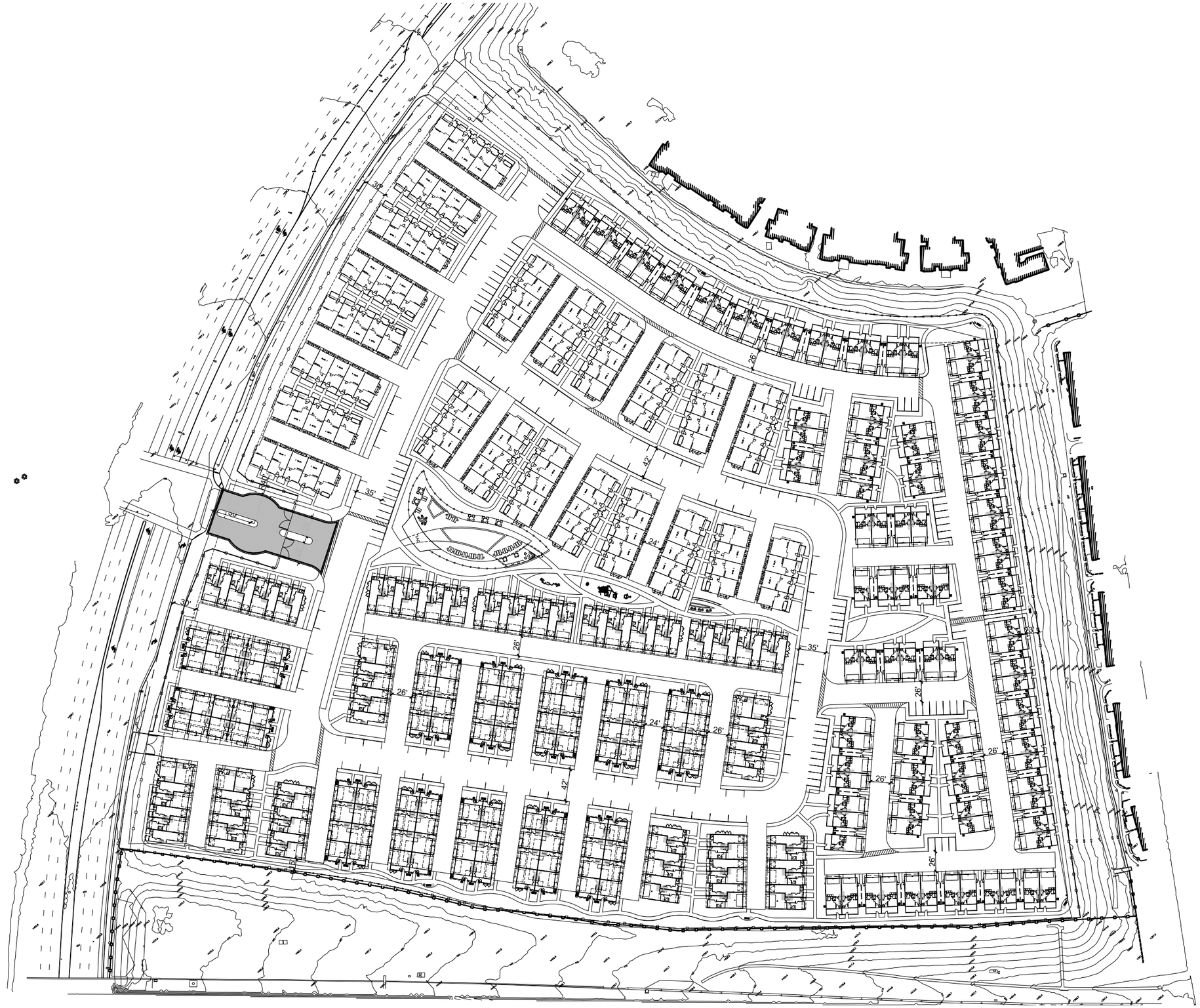
POLARIS PLACE

ALISO VIEJO, CA



ARCHITECTURAL SHEET INDEX	
A0.0	COVER SHEET & SHEET INDEX
A1.0	ARCHITECTUAL SITE PLAN
A1.1	PARKING EXHIBIT
A1.2	PERSPECTIVES
A1.7	PERSPECTIVES
A1.6	PERSPECTIVES
A1.5	PERSPECTIVES
A1.4	PERSPECTIVES
A1.3	PERSPECTIVES
AA1	ELEVATIONS
AA2	BUILDING PLANS
AA3	BUILDING PLANS
AA4	UNIT PLANS
AA5	UNIT PLANS
AB1	ELEVATIONS
AB2	ELEVATIONS
AB3	BUILDING PLANS
AB4	BUILDING PLANS
AB5	UNIT PLANS
AB6	UNIT PLANS
AB7	UNIT PLANS
AC1	ELEVATIONS
AC2	ELEVATIONS
AC3	BUILDING PLANS
AC4	BUILDING PLANS
AC5	UNIT PLANS
AC6	UNIT PLANS
AD1	ELEVATIONS
AD2	ELEVATIONS
AD3	BUILDING PLANS
AD4	BUILDING PLANS
AD5	BUILDING PLANS
AD6	UNIT PLANS
AD7	UNIT PLANS
AD8	UNIT PLANS
AR1	ELEVATIONS
AR2	PLAN

LANDSCAPE SHEET INDEX	
L-1	Conceptual Landscape Plan
L-2	Recreation Area Enlargement Plan
L-3	Open Space Enlargement Plan
L-4	Primary Entry Enlargement Plan
L-5	Primary Entry Gate Section
L-6	Site Sections Aliso Viejo Parkway
L-7	Site Sections Perimeter
L-8	Site Sections Perimeter
L-9	Site Sections Perimeter
L-10	Site Sections Typical Townhome Paseo
L-11	Site Perimeter Walk System



SITE SUMMARY

Gross Site Area:	±22.5 ac
Total Units:	405 du
Density:	18 du/ac
General Plan:	Professional Office (PO)
Zoning:	Professional Office (PO) with MU/R Overlay
Proposed Zoning:	High Density Residential (RH)

RH Development Standard

Front Setback:	n/a
Side Setback:	n/a
Rear Setback:	n/a
Min. Perimeter Setback:	20'
Max. Building Heights:	45'
Max. Density:	18 - 30 du/ac
Min. Common OS	25%
Parking Requirement	
Resident:	2 spaces/du
Guest:	0.5 space/du

UNIT SUMMARY

(A) 4-Story Duplex

P 1	4Bd/4.5Ba - 2,491 gsf	= 51 du
P 2	4Bd/4.5Ba - 2,336 gsf	= 54 du
Sub-Total		= 105 du

(B) 3-Story Townhome (Covera) (3-story)

P 1	3Bd/3.5Ba - 1,768 gsf	= 64 du
P 2	3Bd/3.5Ba - 1,931 gsf	= 22 du
P 3	4Bd/3.5Ba - 2,101 gsf	= 22 du
Sub-Total		= 108 du

(C) 3-Story B2B (3-story)

P 1	2Bd/2.5Ba - 1,443 gsf	= 13 du (affordable)
P 1	2Bd/2.5Ba - 1,443 gsf	= 39 du
P 2	3Bd/2.5Ba - 1,652 gsf	= 48 du
Sub-Total		= 100 du

(D) 3-Story Rowtowns with tandem (3-story)

P 1	2Bd/2.5Ba - 1,304 gsf	= 4 du (affordable)
P 2	2Bd/2.5Ba - 1,286 gsf	= 4 du (affordable)
P 3	3Bd/3.0Ba - 1,621 gsf	= 44 du
P 4	4Bd/4.0Ba - 1,889 gsf	= 40 du
Sub-Total		= 92 du
Total		**= 405 du**

Parking Required (State Density Bonus Ratio)

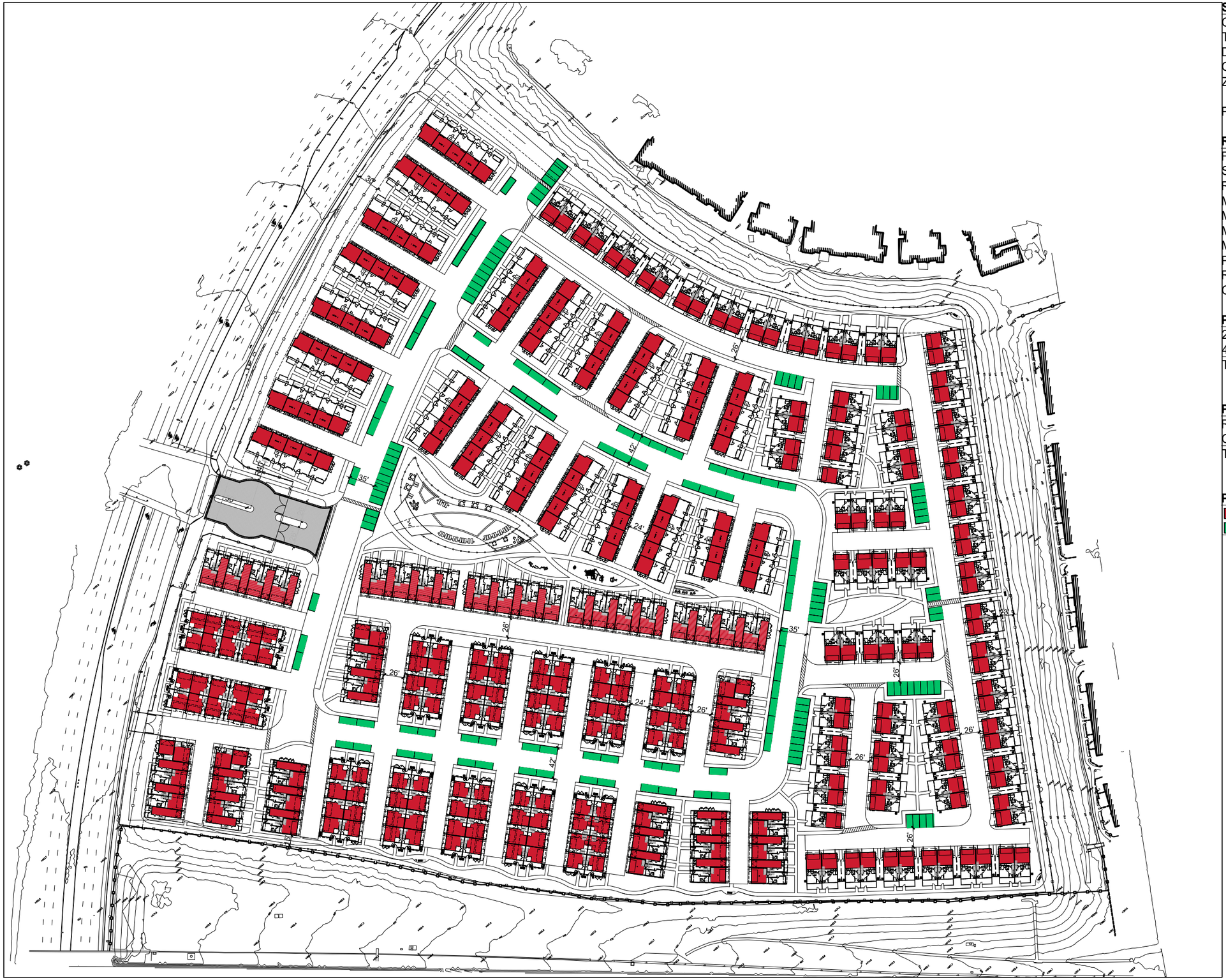
2-3 Beds	238x1.5/du	= 357 spaces
4 Beds	167x2.5/du	= 418 spaces
Total		= 775 spaces (1.9 spaces/du)

Parking Required (City Code)

Resident	405x2/du	= 810 spaces
Guest	405x0.5/du	= 203 spaces
Total		= 1013 spaces (2.5 spaces/du)

Parking Provided

Garage:	= 810 spaces
Open Parking	= 151 spaces
Total	= 961 spaces (2.37 spaces/du)



SITE SUMMARY

Gross Site Area:	±22.5 ac
Total Units:	405 du
Density:	18 du/ac
General Plan:	Professional Office (PO)
Zoning:	Professional Office (PO) with MU/R Overlay
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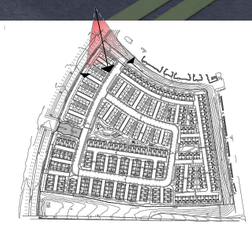
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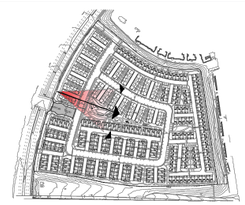
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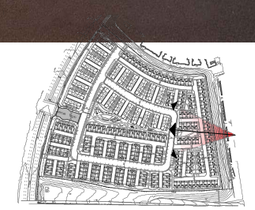




















MATERIAL LEGEND

1. VERTICAL SIDING
2. STUCCO
3. ASPHALT SHINGLE ROOF
4. VINYL WINDOWS
5. FASCIA
6. SMOOTH STUCCO
7. DECORATIVE LIGHTS & ADDRESS SIGN
8. FIBERGLASS ENTRY DOOR
9. METAL SECTIONAL GARAGE DOOR
10. STUCCO TRIM
11. METAL AWNING
12. BRICK VENEER
13. LOW WALL
14. PRIVACY WALL



LEFT



FRONT

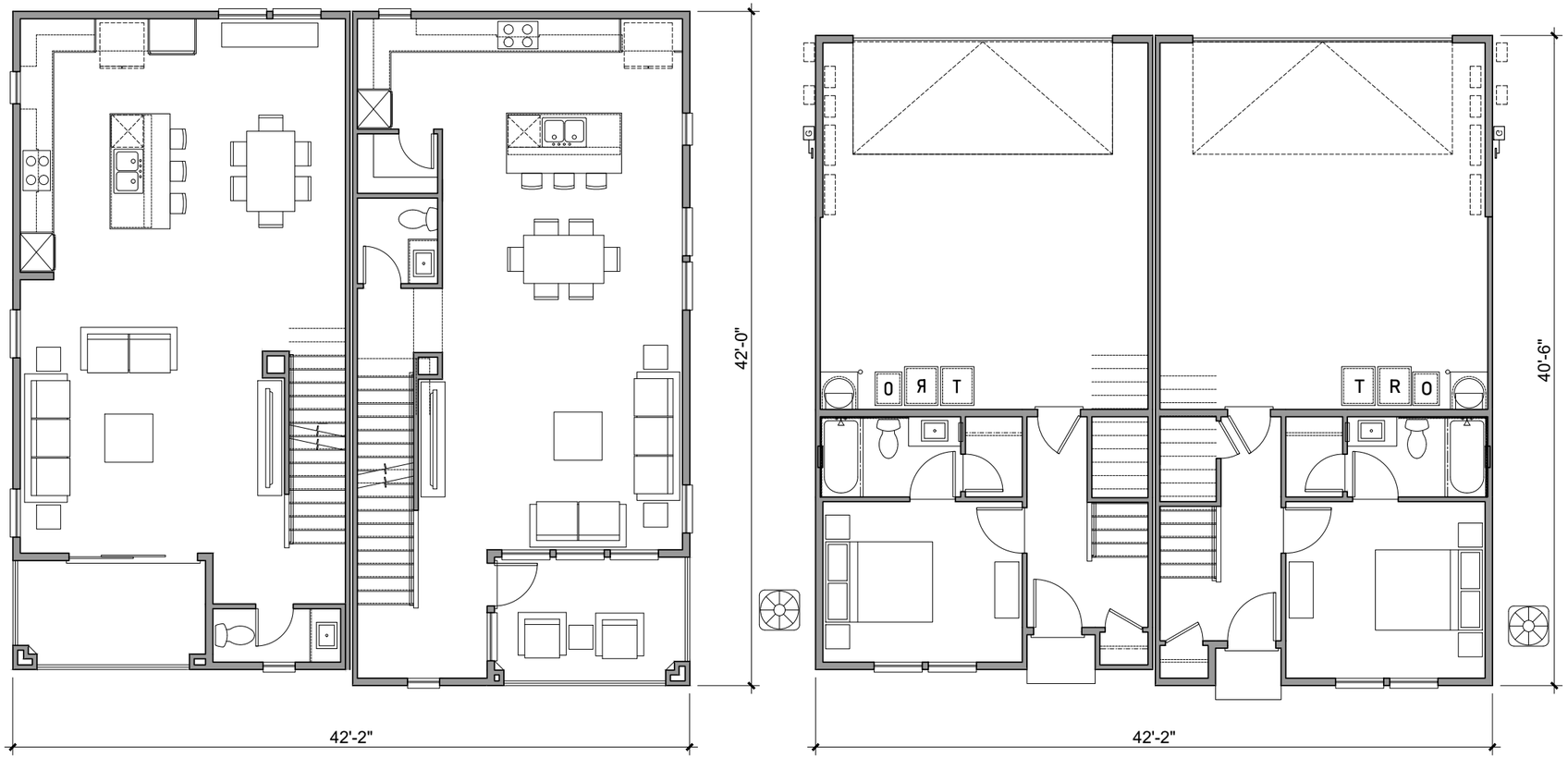
patio walls and side yard wall location varies - see site plan



RIGHT

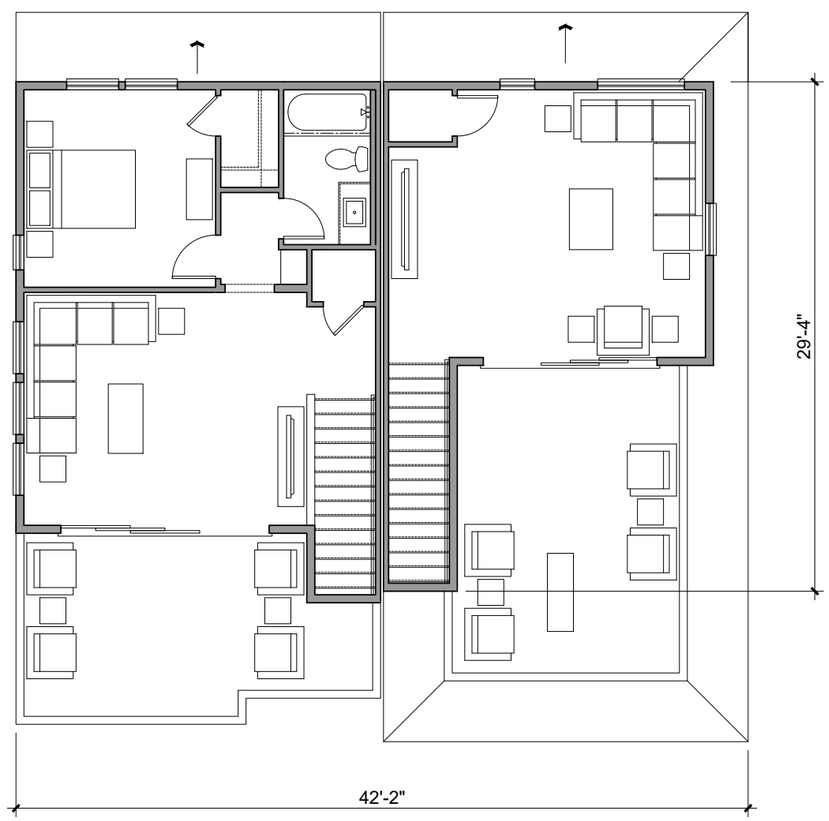


REAR



SECOND FLOOR

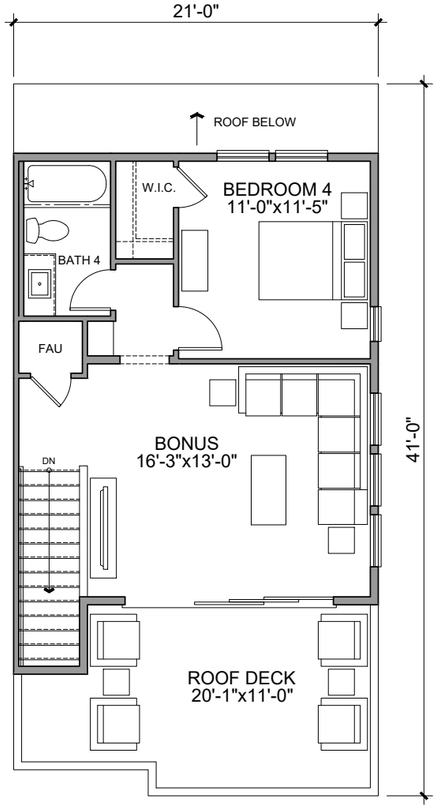
FIRST FLOOR



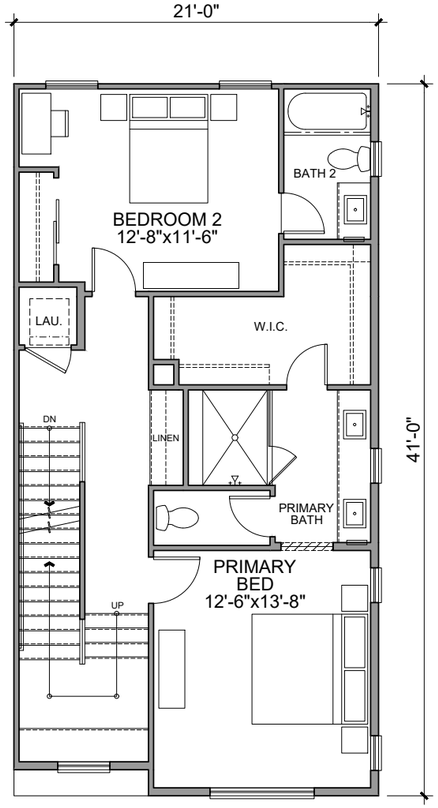
FOURTH FLOOR



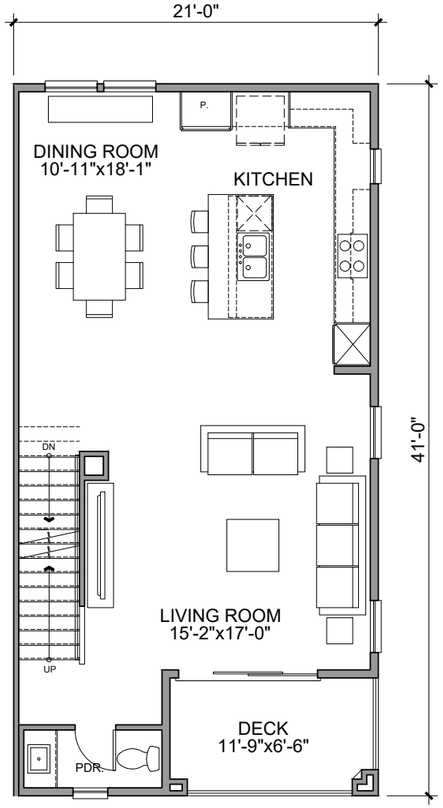
THIRD FLOOR



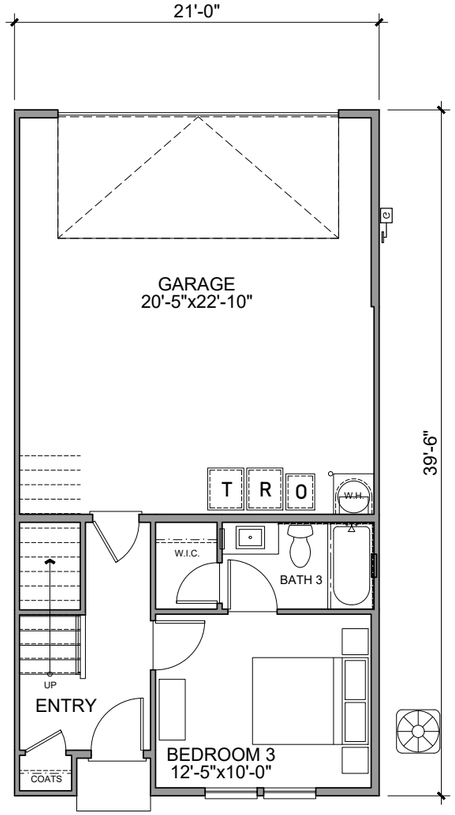
ROOF PLAN



THIRD FLOOR



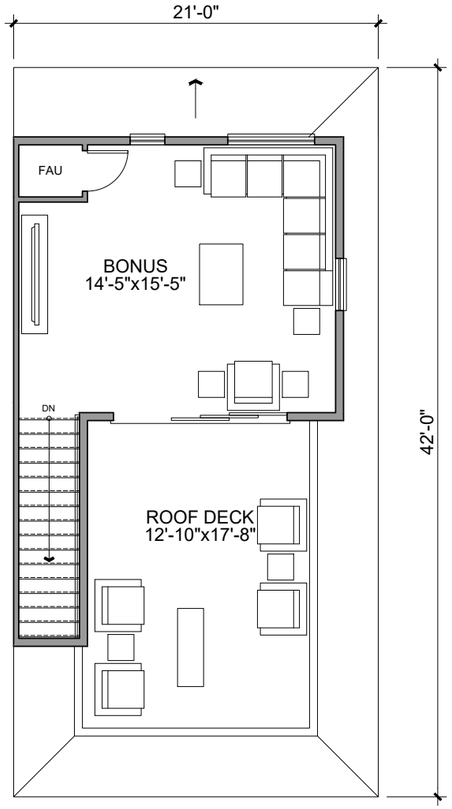
SECOND FLOOR



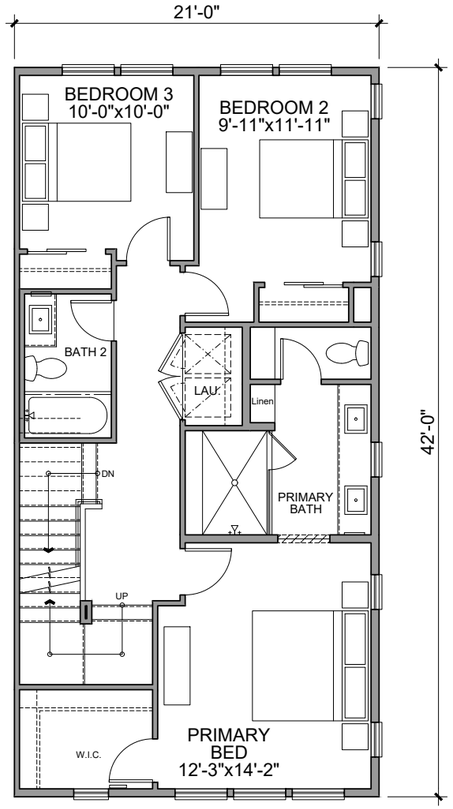
FIRST FLOOR

PLAN 1 - NET S.F.	
4 BD / 4.5 BA	
FIRST FLOOR	330 SQ. FT.
SECOND FLOOR	730 SQ. FT.
THIRD FLOOR	800 SQ. FT.
FOURTH FLOOR	475 SQ. FT.
TOTAL	2335 SQ. FT.
ROOF DECK	192 SQ. FT.
DECK	79 SQ. FT.
GARAGE	466 SQ. FT.

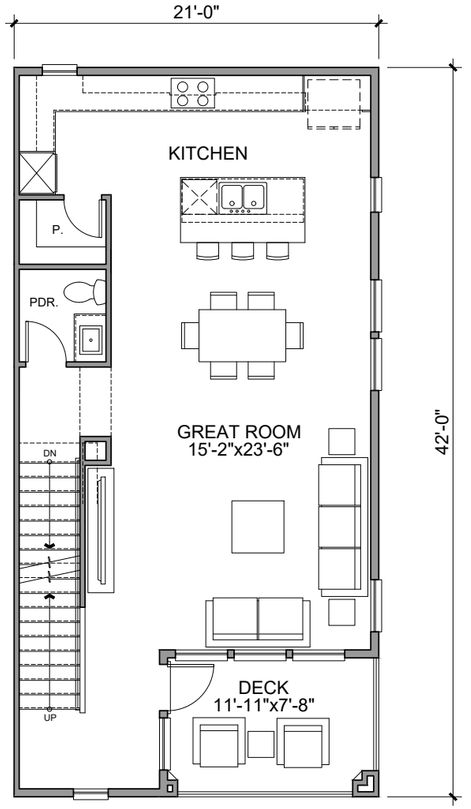
PLAN 1 - GROSS S.F.	
4 BD / 4.5 BA	
FIRST FLOOR	353 SQ. FT.
SECOND FLOOR	780 SQ. FT.
THIRD FLOOR	849 SQ. FT.
FOURTH FLOOR	509 SQ. FT.
TOTAL	2491 SQ. FT.
ROOF DECK	210 SQ. FT.
DECK	79 SQ. FT.
GARAGE	489 SQ. FT.



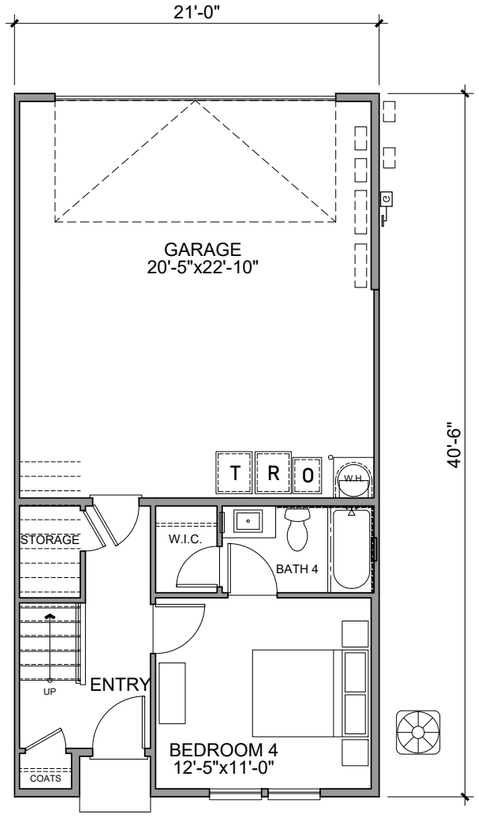
ROOF PLAN



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

PLAN 2 - NET S.F.	
4 BD / 4.5 BA	
FIRST FLOOR	338 SQ. FT.
SECOND FLOOR	735 SQ. FT.
THIRD FLOOR	832 SQ. FT.
FOURTH FLOOR	283 SQ. FT.
TOTAL	2187 SQ. FT.
ROOF DECK	228 SQ. FT.
DECK	95 SQ. FT.
GARAGE	464 SQ. FT.

PLAN 2 - GROSS S.F.	
4 BD / 4.5 BA	
FIRST FLOOR	360 SQ. FT.
SECOND FLOOR	785 SQ. FT.
THIRD FLOOR	882 SQ. FT.
FOURTH FLOOR	310 SQ. FT.
TOTAL	2336 SQ. FT.
ROOF DECK	245 SQ. FT.
DECK	95 SQ. FT.
GARAGE	489 SQ. FT.



LEFT



FRONT

patio walls location varies - see site plan

MATERIAL LEGEND

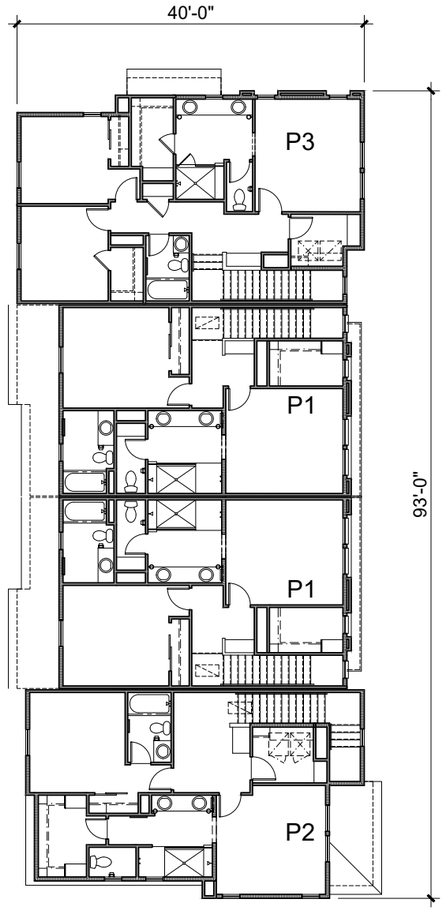
1. VERTICAL SIDING
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11. METAL AWNING
12. BRICK VENEER
13. LOW WALL



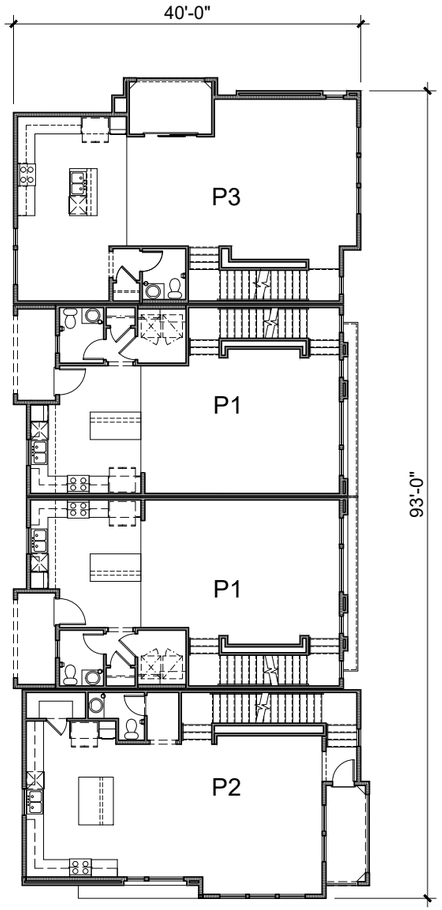
RIGHT



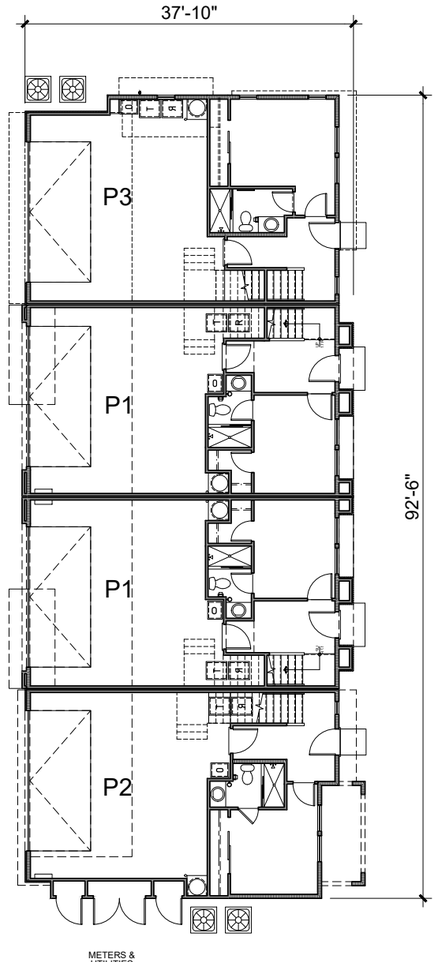
REAR



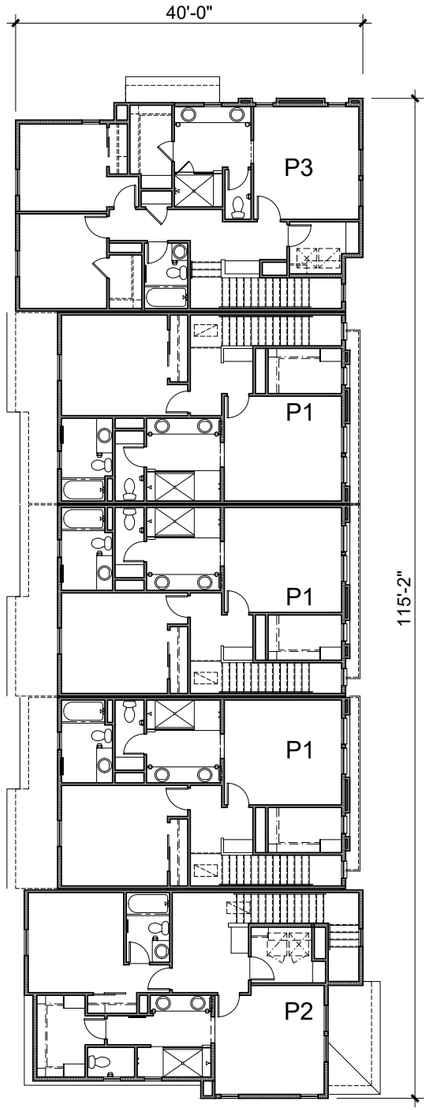
THIRD FLOOR



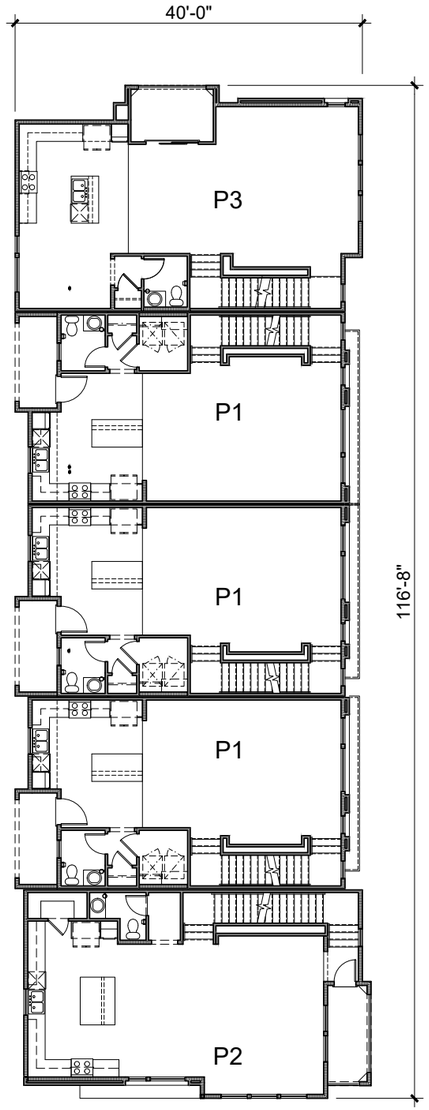
SECOND FLOOR



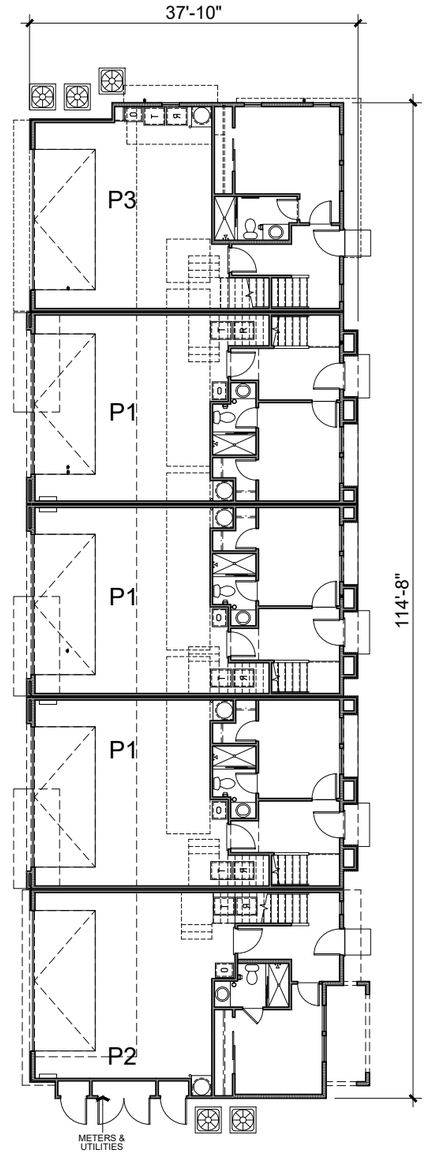
FIRST FLOOR



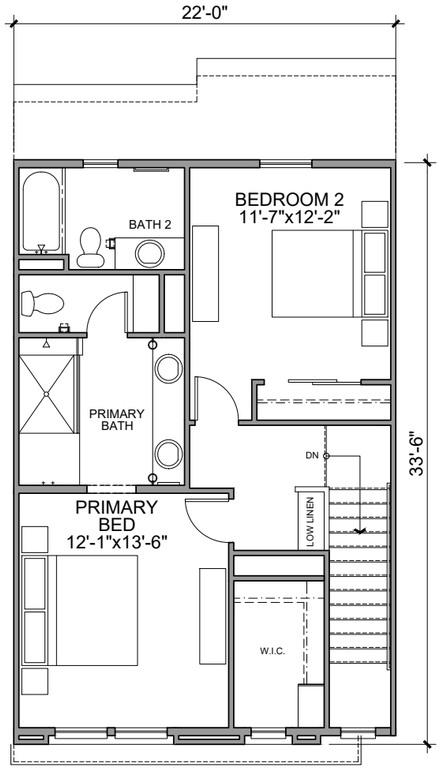
THIRD FLOOR



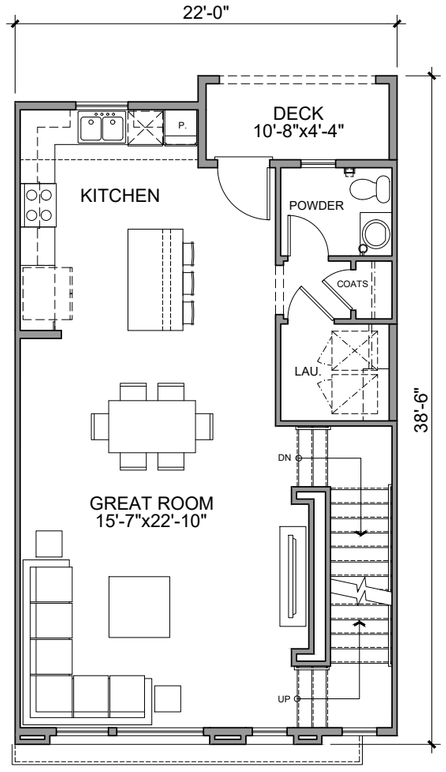
SECOND FLOOR



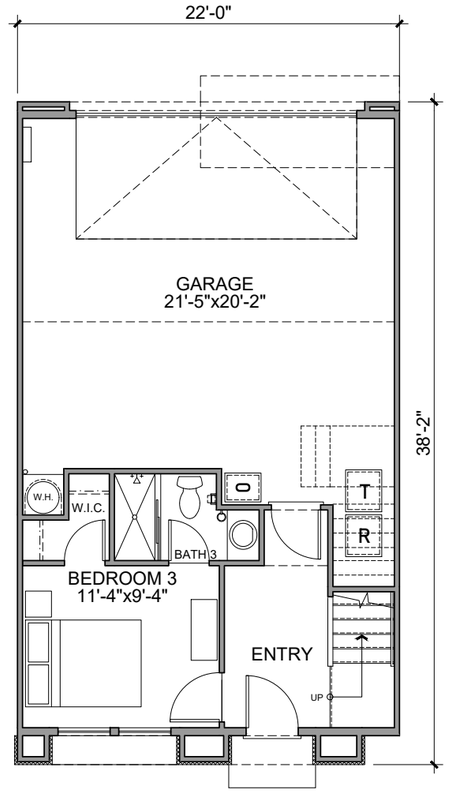
FIRST FLOOR



THIRD FLOOR



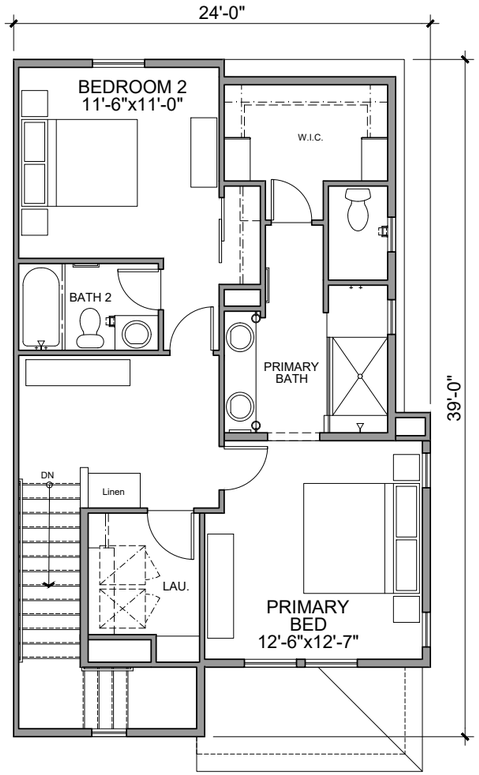
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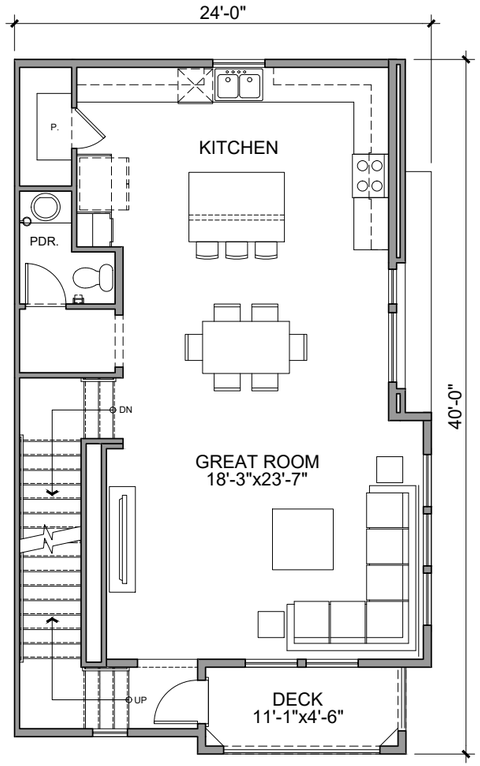
FIRST FLOOR

PLAN 1 - NET S.F.	
3 BD / 3 BA	
FIRST FLOOR	322 SQ. FT.
SECOND FLOOR	725 SQ. FT.
THIRD FLOOR	628 SQ. FT.
TOTAL	1675 SQ. FT.
DECK	47 SQ. FT.
GARAGE	455 SQ. FT.

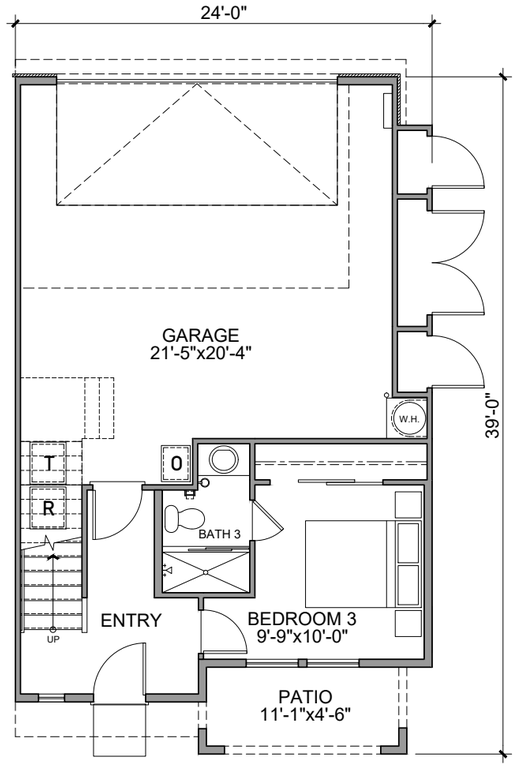
PLAN 1 - GROSS S.F.	
3 BD / 3 BA	
FIRST FLOOR	341 SQ. FT.
SECOND FLOOR	766 SQ. FT.
THIRD FLOOR	661 SQ. FT.
TOTAL	1768 SQ. FT.
DECK	47 SQ. FT.
GARAGE	478 SQ. FT.



THIRD FLOOR



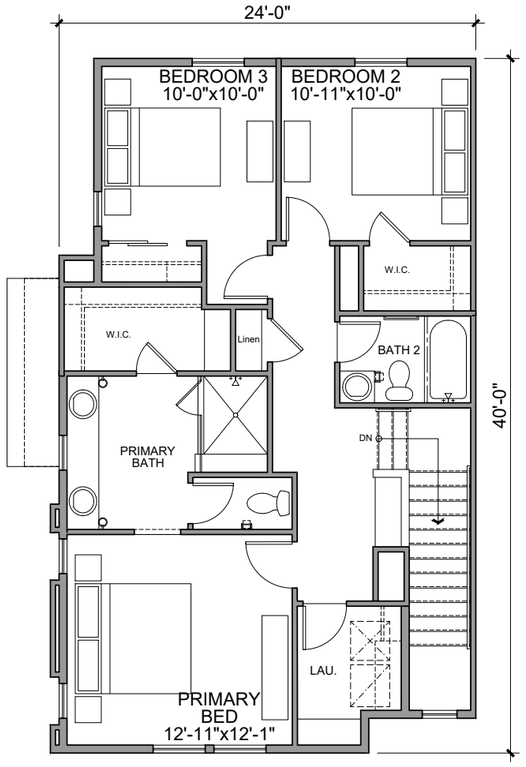
SECOND FLOOR



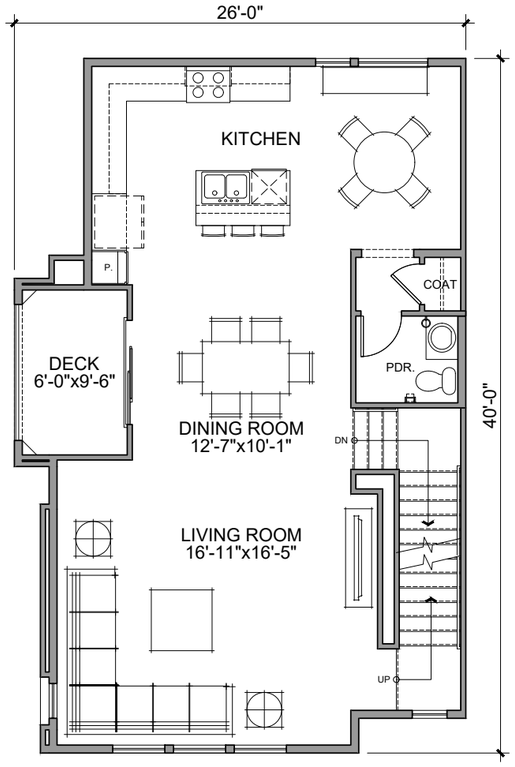
FIRST FLOOR

PLAN 2 - NET S.F.	
3 BD / 3.5 BA	
FIRST FLOOR	318 SQ. FT.
SECOND FLOOR	793 SQ. FT.
THIRD FLOOR	707 SQ. FT.
TOTAL	1818 SQ. FT.
PATIO	50 SQ. FT.
DECK	50 SQ. FT.
GARAGE	468 SQ. FT.

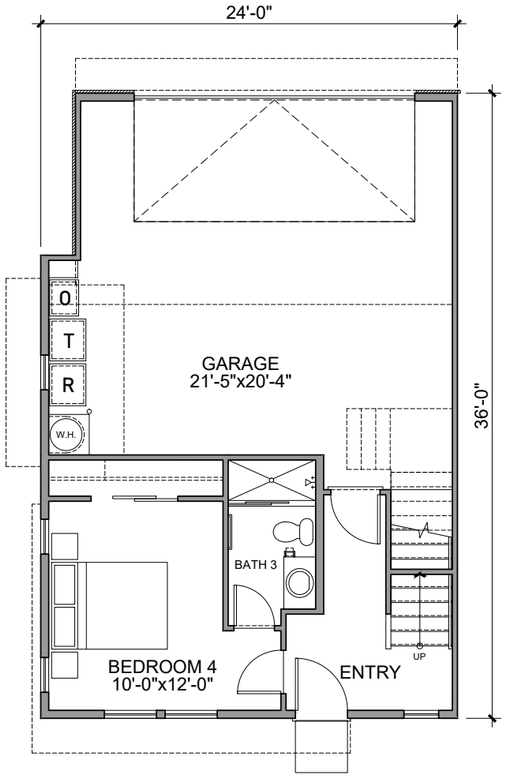
PLAN 2 - GROSS S.F.	
3 BD / 3.5 BA	
FIRST FLOOR	341 SQ. FT.
SECOND FLOOR	843 SQ. FT.
THIRD FLOOR	747 SQ. FT.
TOTAL	1931 SQ. FT.
PATIO	50 SQ. FT.
DECK	50 SQ. FT.
GARAGE	495 SQ. FT.



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

PLAN 3 - NET S.F.	
4 BD / 3.5 BA	
FIRST FLOOR	353 SQ. FT.
SECOND FLOOR	827 SQ. FT.
THIRD FLOOR	804 SQ. FT.
TOTAL	1984 SQ. FT.
DECK	57 SQ. FT.
GARAGE	472 SQ. FT.

PLAN 3 - GROSS S.F.	
4 BD / 3.5 BA	
FIRST FLOOR	375 SQ. FT.
SECOND FLOOR	878 SQ. FT.
THIRD FLOOR	847 SQ. FT.
TOTAL	2101 SQ. FT.
DECK	57 SQ. FT.
GARAGE	500 SQ. FT.



LEFT



FRONT



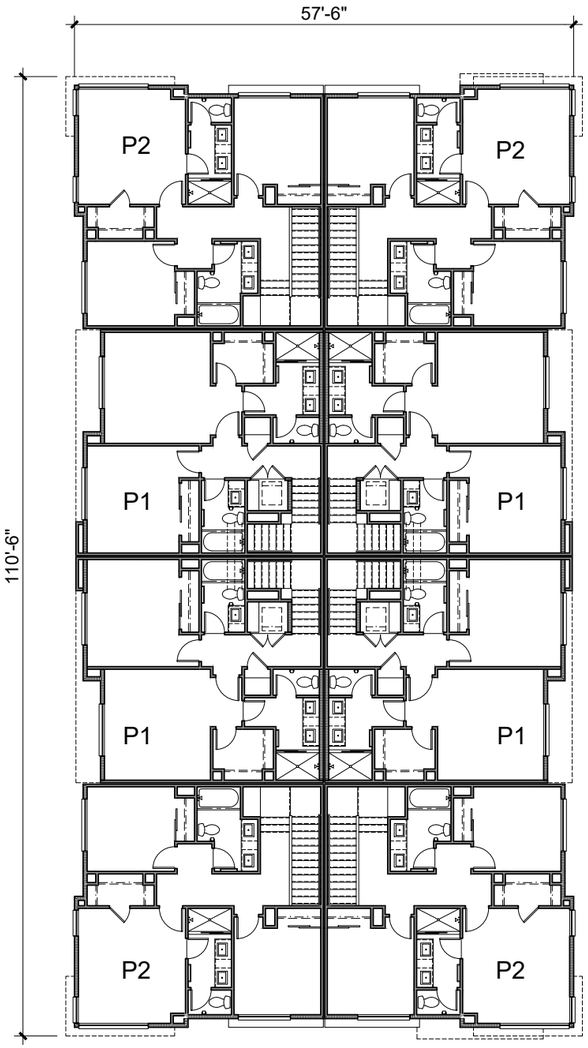
RIGHT



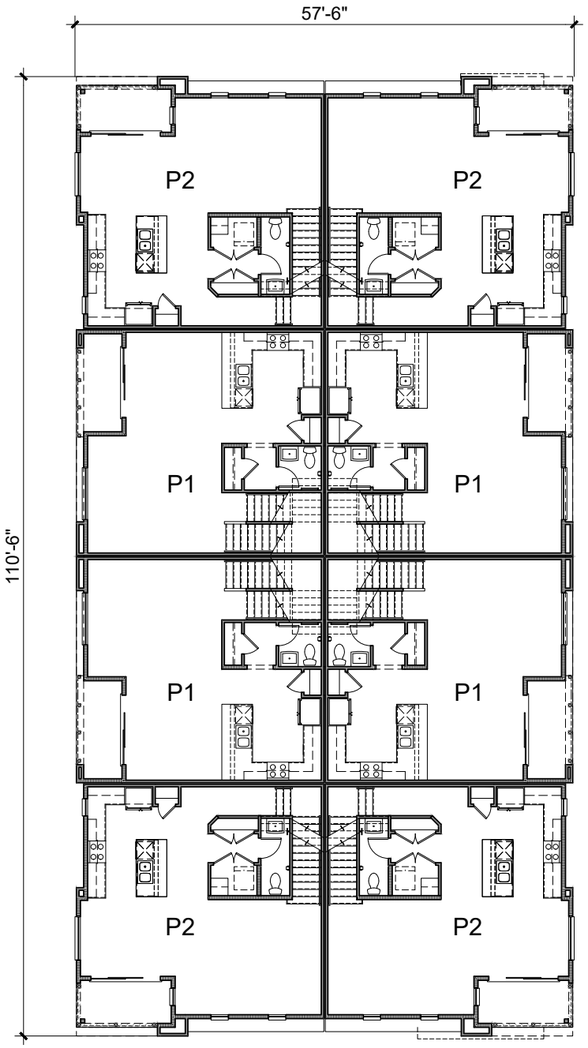
REAR

MATERIAL LEGEND

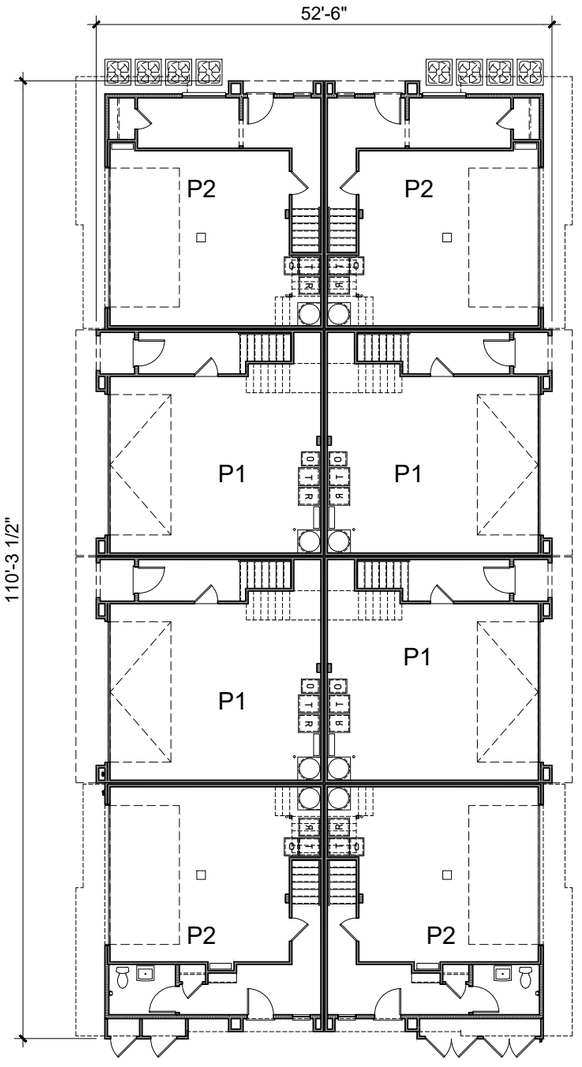
1. VERTICAL SIDING
2. STUCCO
3. ASPHALT SHINGLES ROOF
4. VINYL WINDOWS
5. FASCIA
6. SMOOTH STUCCO
7. DECORATIVE LIGHTS & ADDRESS SIGN
8. FIBERGLASS ENTRY DOOR
9. METAL SECTIONAL GARAGE DOOR
10. STUCCO TRIM
11. METAL AWNING
12. SLIDING DOOR
13. METAL RAILING



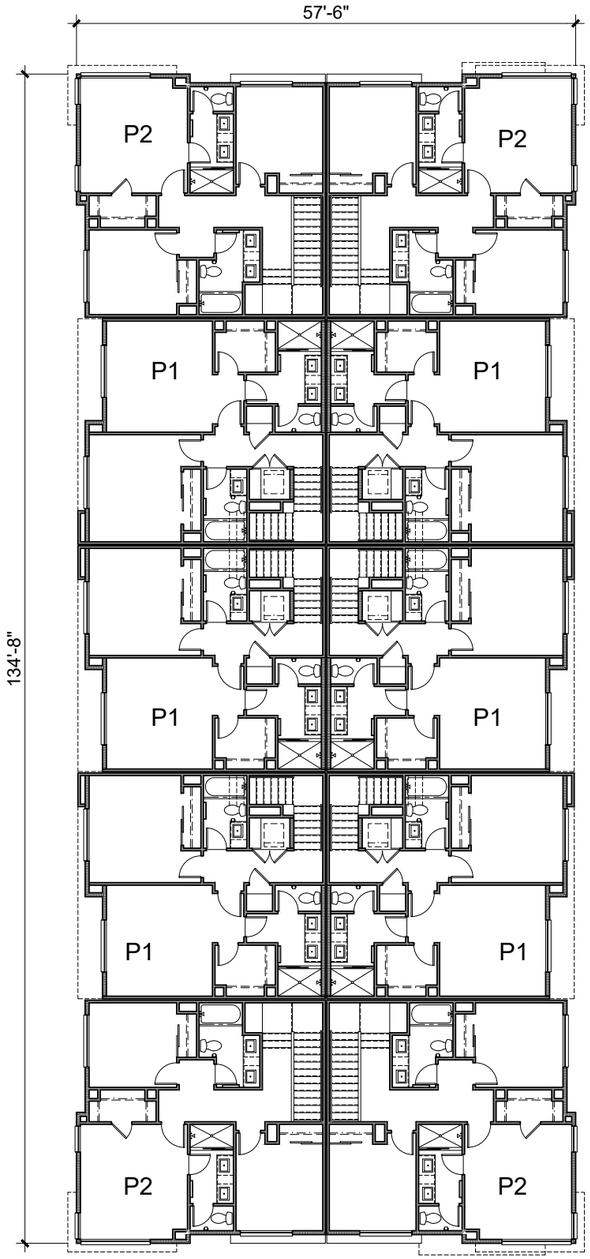
THIRD FLOOR



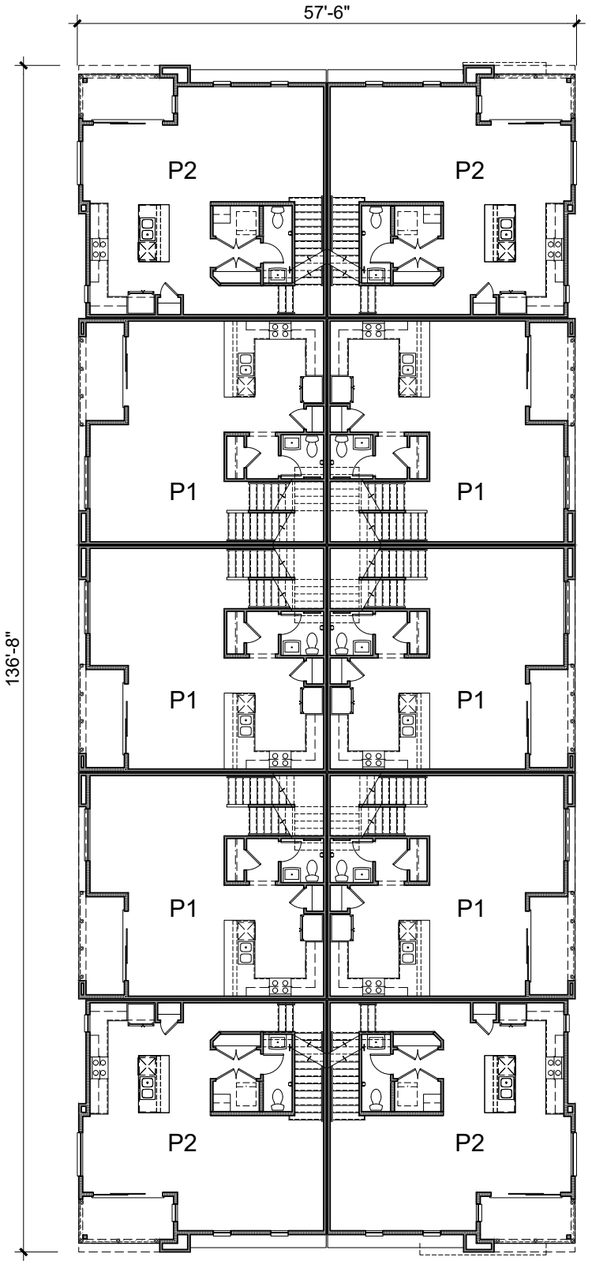
SECOND FLOOR



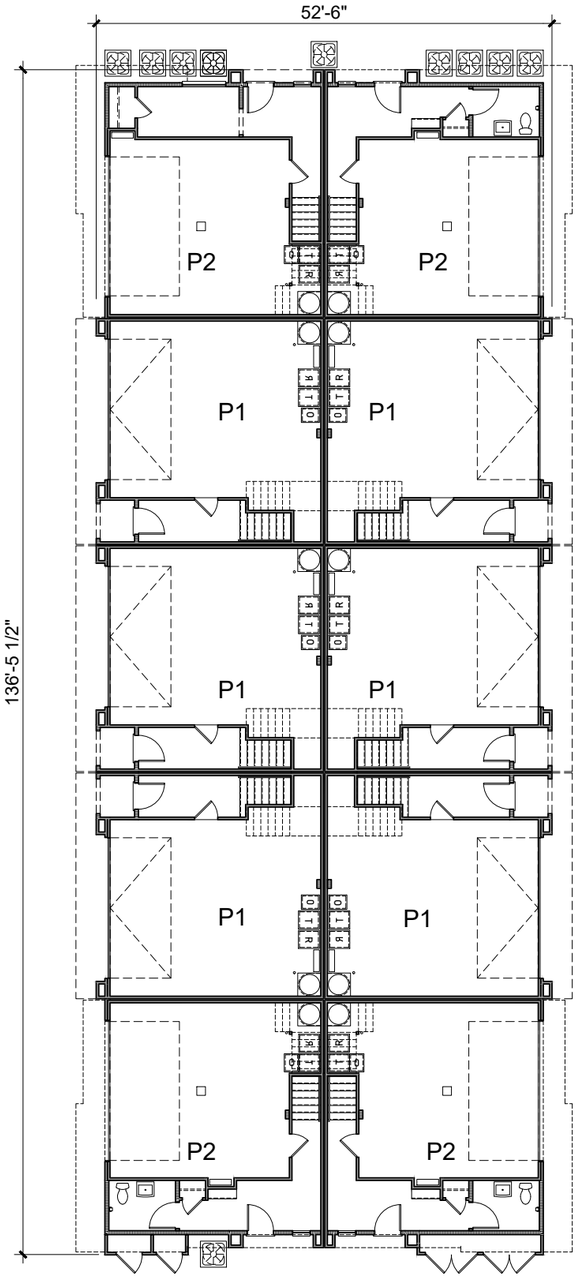
FIRST FLOOR



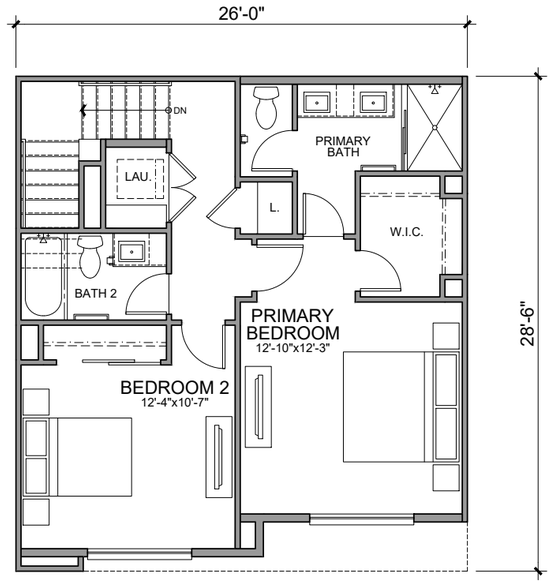
THIRD FLOOR



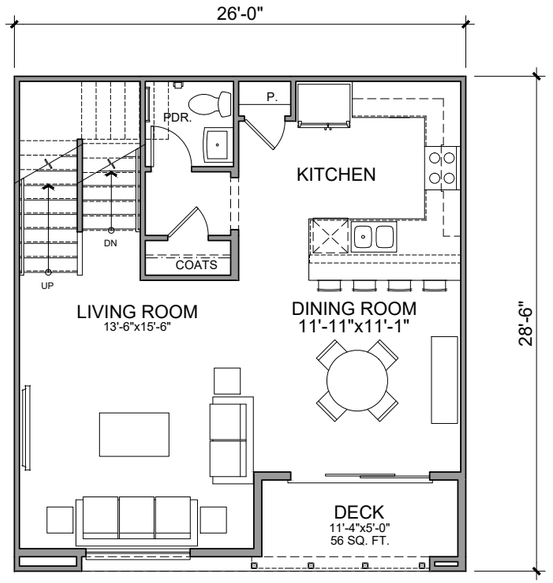
SECOND FLOOR



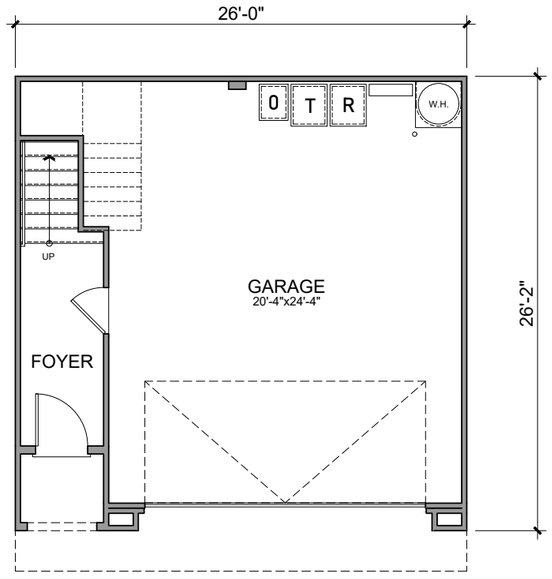
FIRST FLOOR



THIRD FLOOR



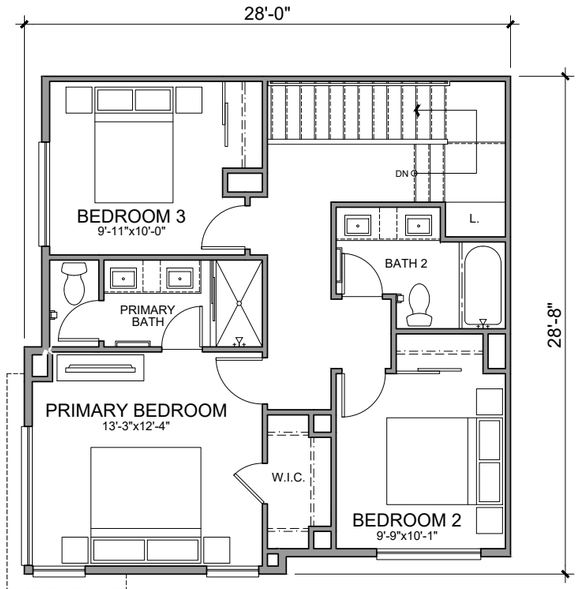
SECOND FLOOR

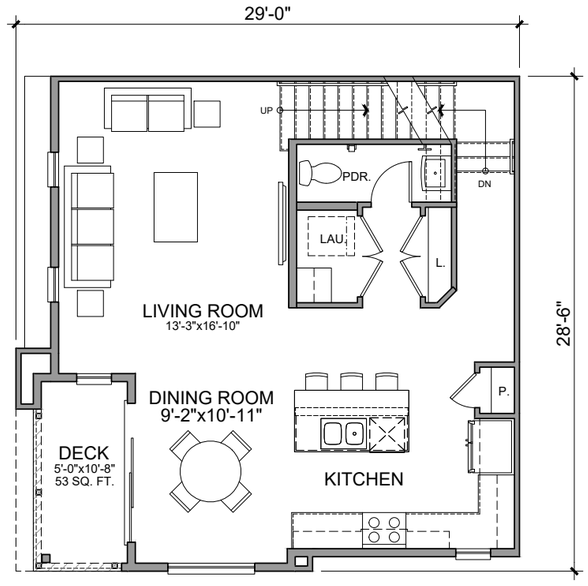


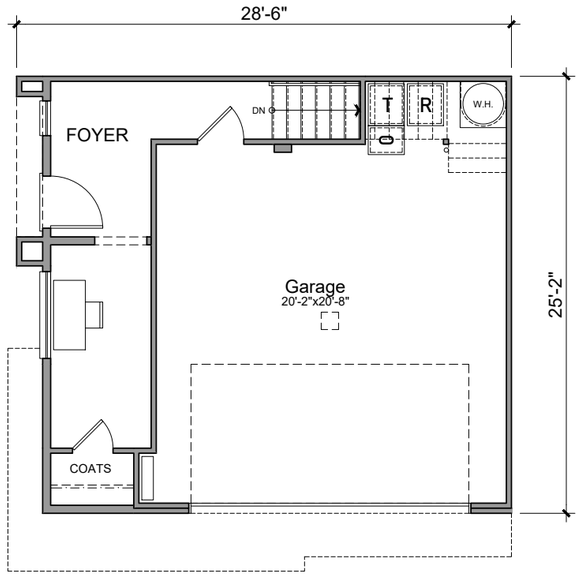
FIRST FLOOR

PLAN 1 - NET S.F.	
2 BD / 2.5 BA	
FIRST FLOOR	123 SQ. FT.
SECOND FLOOR	632 SQ. FT.
THIRD FLOOR	610 SQ. FT.
TOTAL	1364 SQ. FT.
DECK	56 SQ.FT
GARAGE	494 SQ. FT.

PLAN 1 - GROSS S.F.	
2 BD / 2.5 BA	
FIRST FLOOR	134 SQ. FT.
SECOND FLOOR	667 SQ. FT.
THIRD FLOOR	642 SQ. FT.
TOTAL	1443 SQ. FT.
DECK	56 SQ.FT
GARAGE	545 SQ. FT.







THIRD FLOOR

SECOND FLOOR

FIRST FLOOR

PLAN 2 - NET S.F.	
3 BD / 2.5 BA	
FIRST FLOOR	216 SQ. FT.
SECOND FLOOR	669 SQ. FT.
THIRD FLOOR	667 SQ. FT.
TOTAL	1552 SQ. FT.
DECK	53 SQ.FT.
GARAGE	417 SQ.FT.

PLAN 2 - NET S.F.	
3 BD / 2.5 BA	
FIRST FLOOR	239 SQ. FT.
SECOND FLOOR	710 SQ. FT.
THIRD FLOOR	703 SQ. FT.
TOTAL	1652 SQ. FT.
DECK	53 SQ.FT.
GARAGE	481 SQ. FT.



LEFT



FRONT



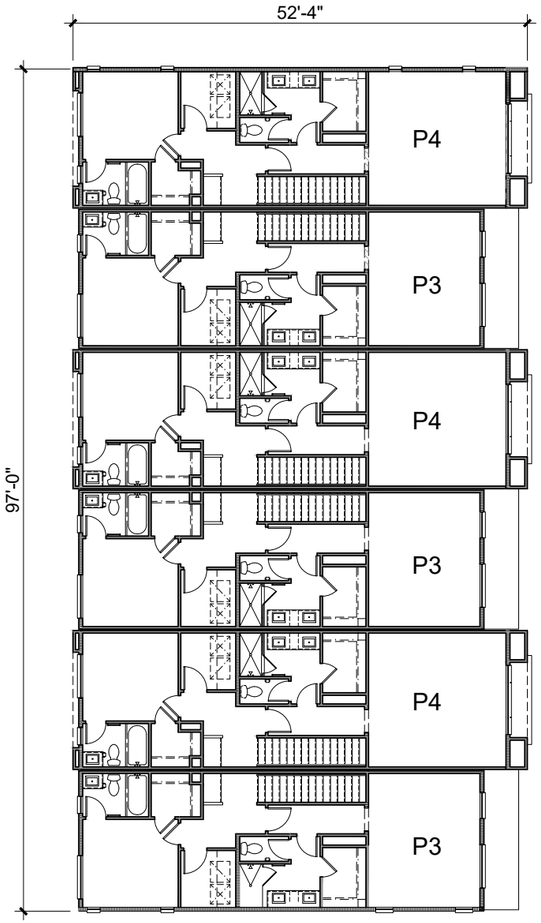
RIGHT



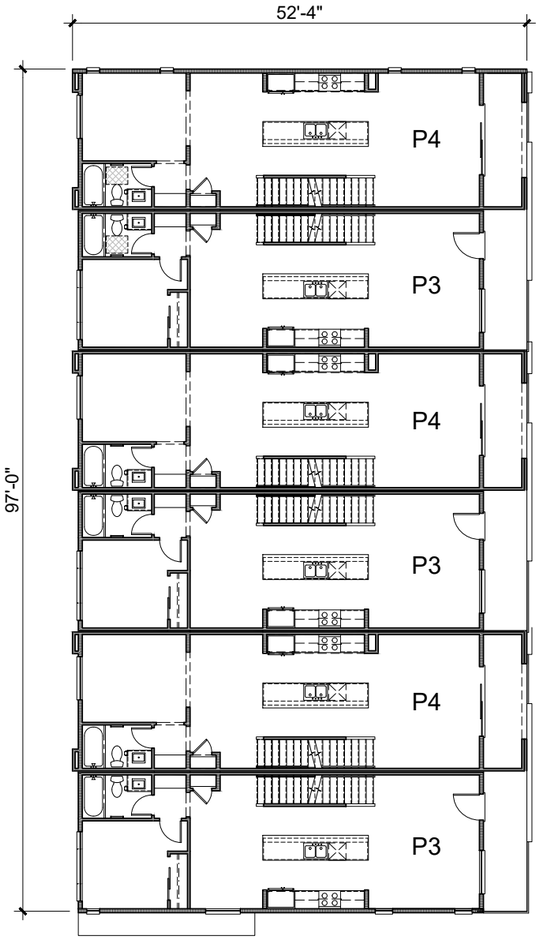
REAR

MATERIAL LEGEND

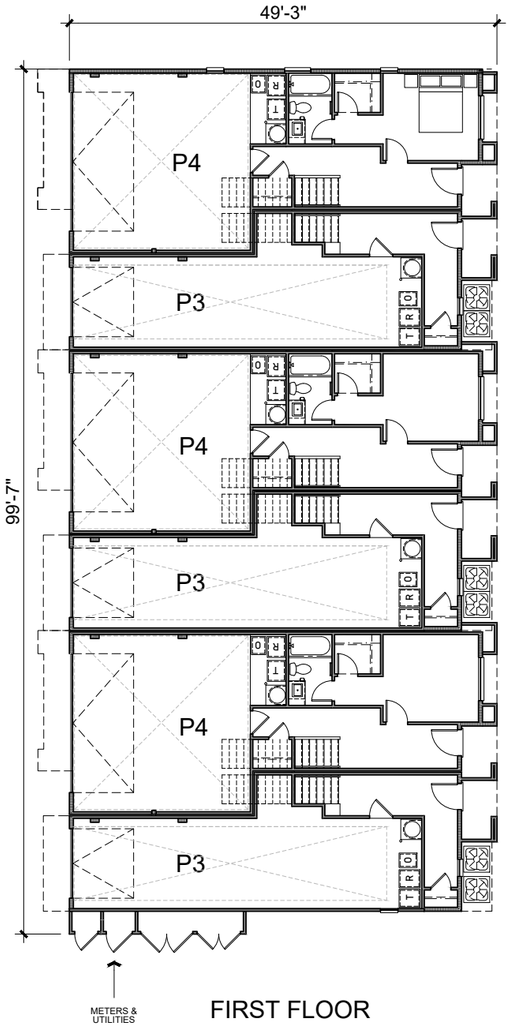
1. VERTICAL SIDING
2. STUCCO
3. ASPHALT SHINGLE ROOF
4. VINYL WINDOWS
5. FASCIA
6. SMOOTH STUCCO
7. DECORATIVE LIGHTS & ADDRESS SIGN
8. FIBERGLASS ENTRY DOOR
9. METAL SECTIONAL GARAGE DOOR
10. STUCCO TRIM
11. METAL AWNING
12. BRICK VENEER



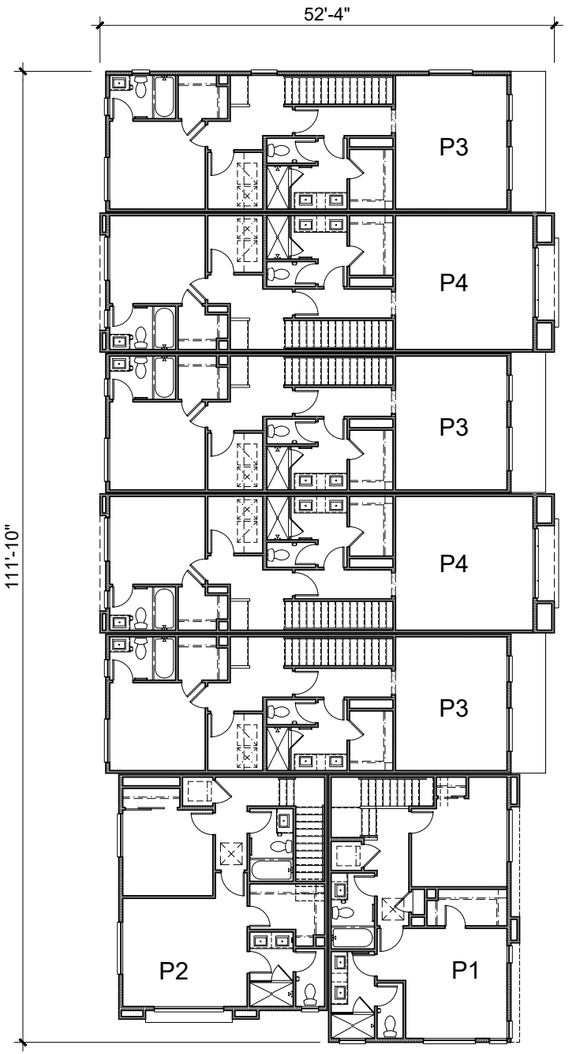
THIRD FLOOR



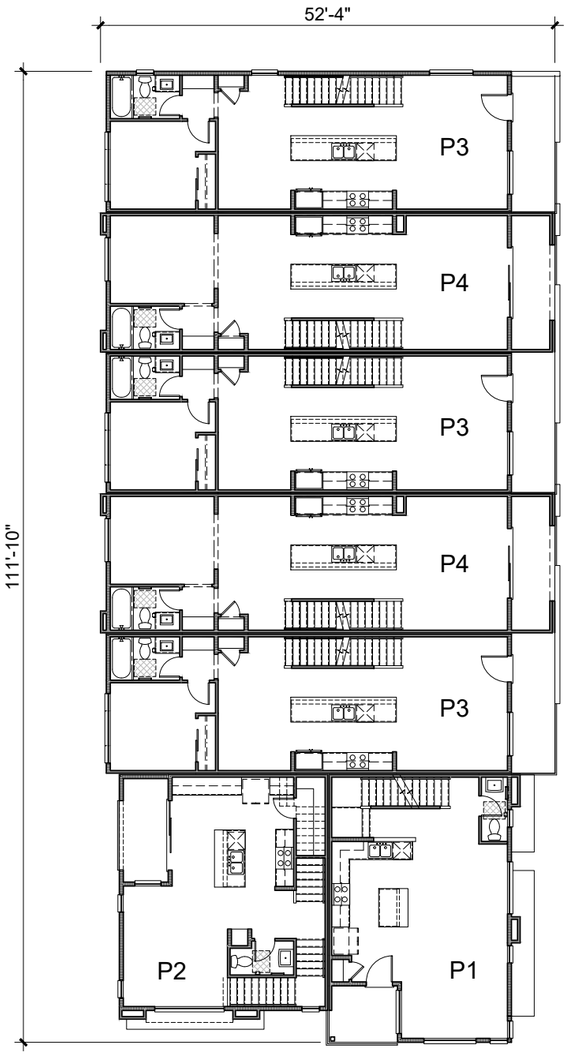
SECOND FLOOR



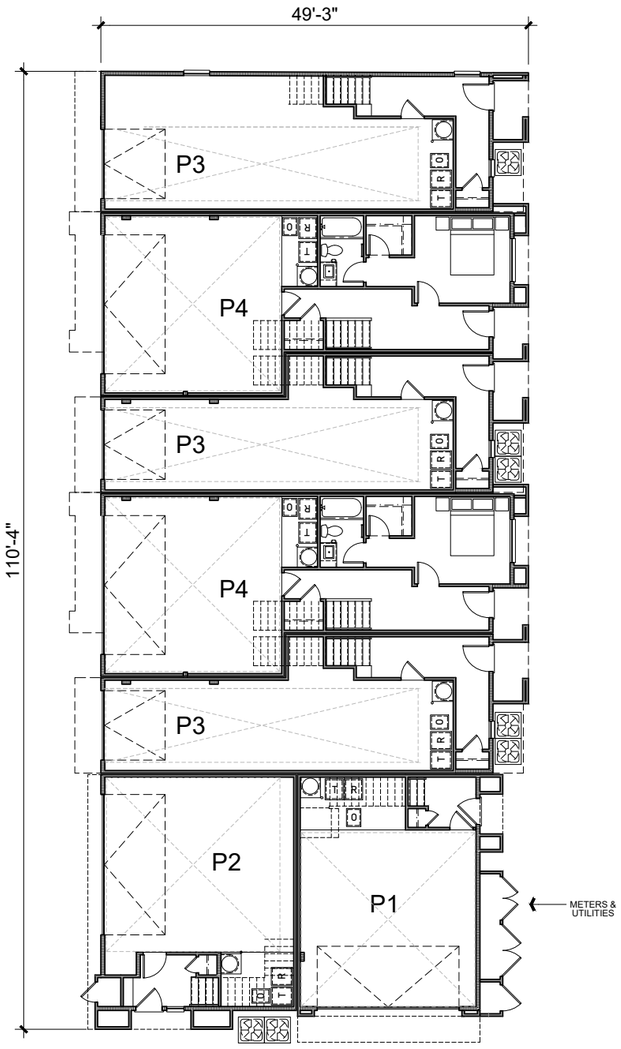
FIRST FLOOR



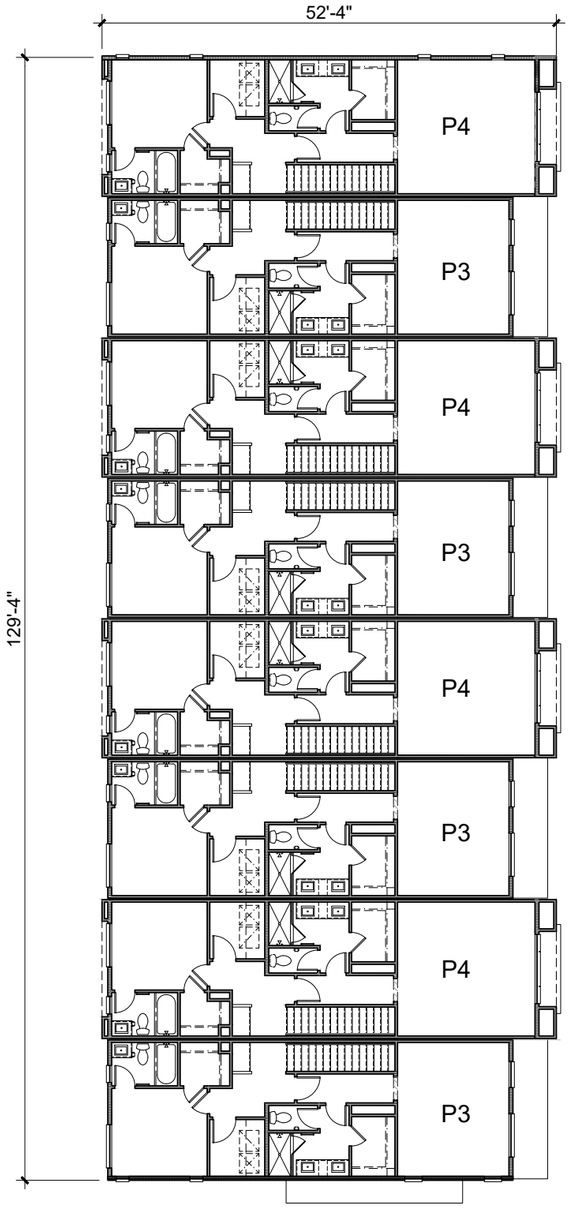
THIRD FLOOR



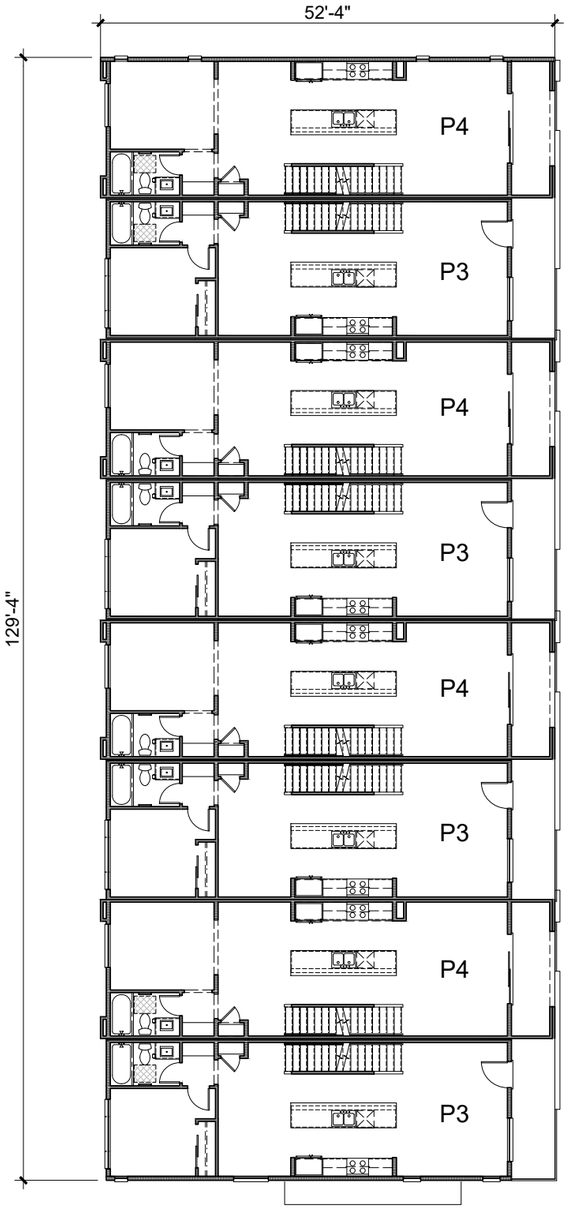
SECOND FLOOR



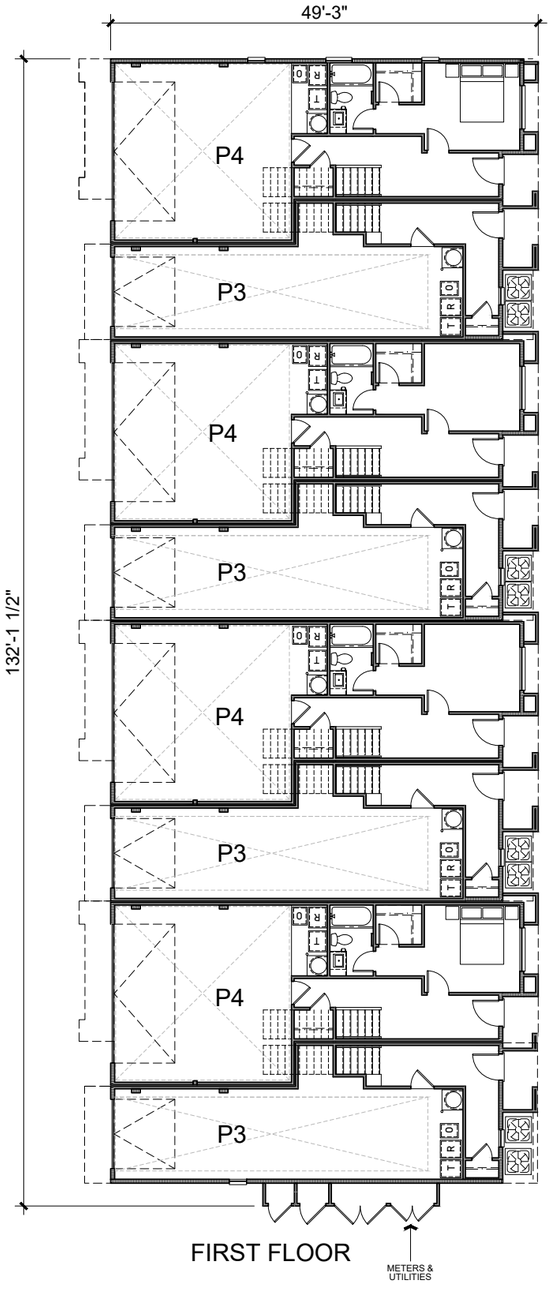
FIRST FLOOR



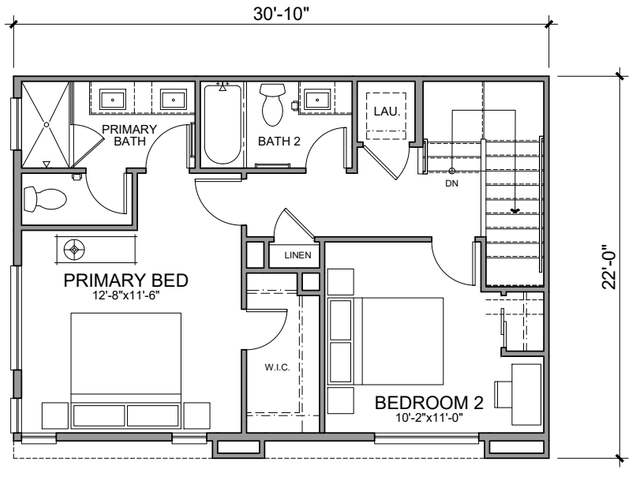
THIRD FLOOR



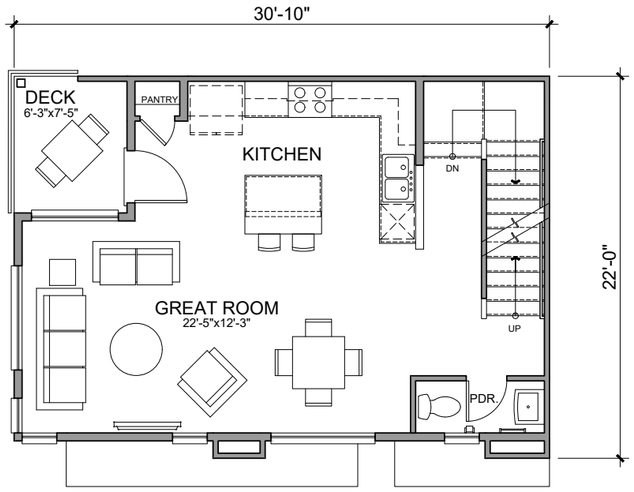
SECOND FLOOR



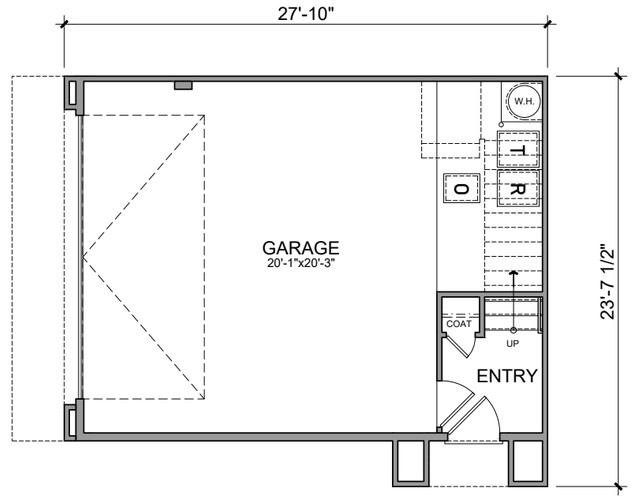
FIRST FLOOR



THIRD FLOOR



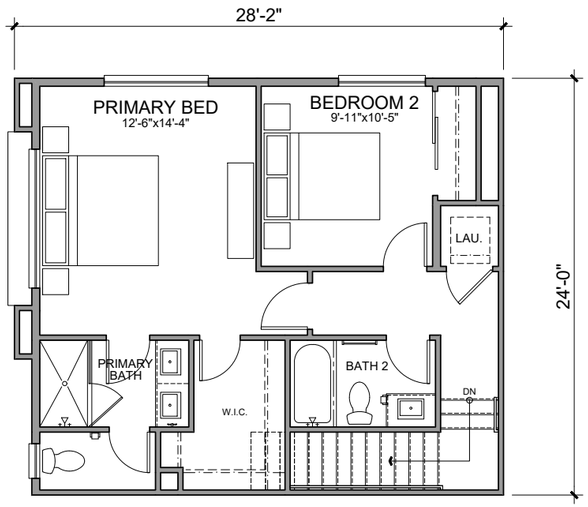
SECOND FLOOR



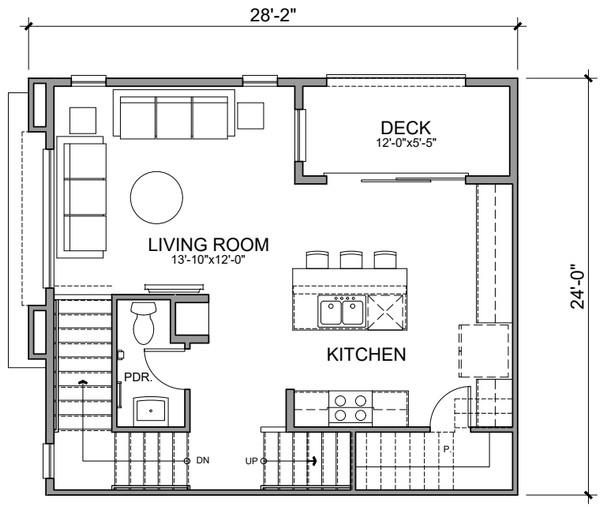
FIRST FLOOR

PLAN 1 - NET S.F.	
2 BD / 2.5 BA	
FIRST FLOOR	106 SQ. FT.
SECOND FLOOR	557 SQ. FT.
THIRD FLOOR	551 SQ. FT.
TOTAL	1214 SQ. FT.
DECK	47 SQ. FT.
GARAGE	485 SQ. FT.

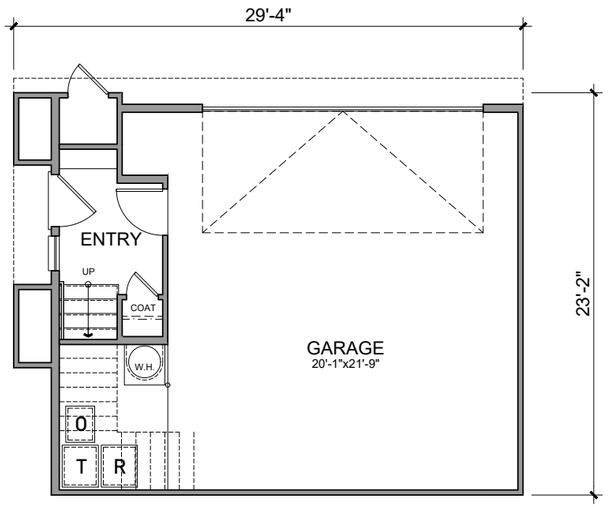
PLAN 1 - GROSS S.F.	
2 BD / 2.5 BA	
FIRST FLOOR	116 SQ. FT.
SECOND FLOOR	604 SQ. FT.
THIRD FLOOR	584 SQ. FT.
TOTAL	1304 SQ. FT.
DECK	47 SQ. FT.
GARAGE	512 SQ. FT.



THIRD FLOOR



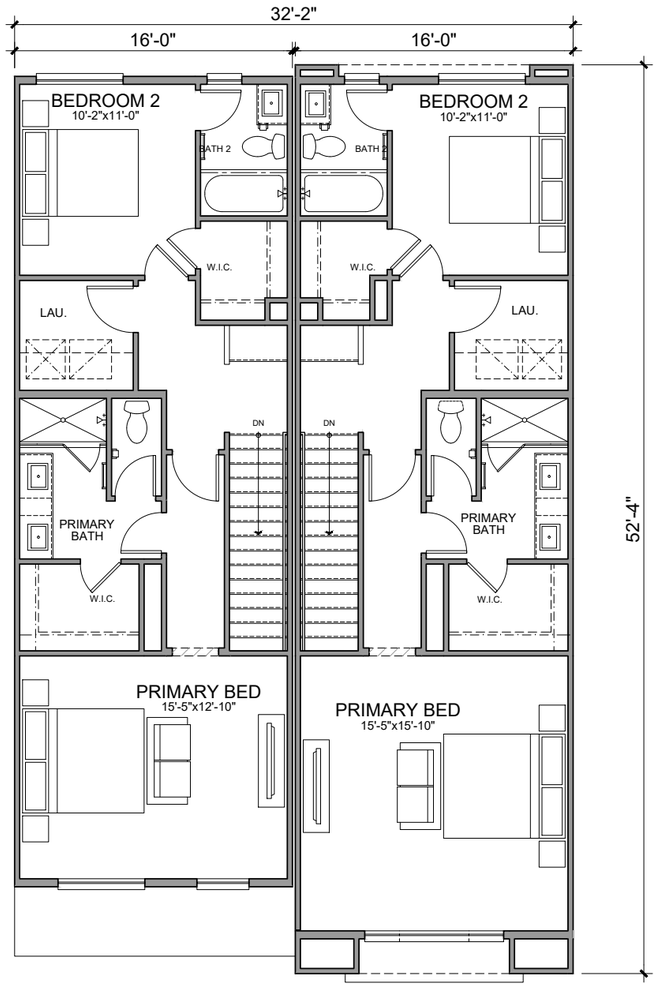
SECOND FLOOR



FIRST FLOOR

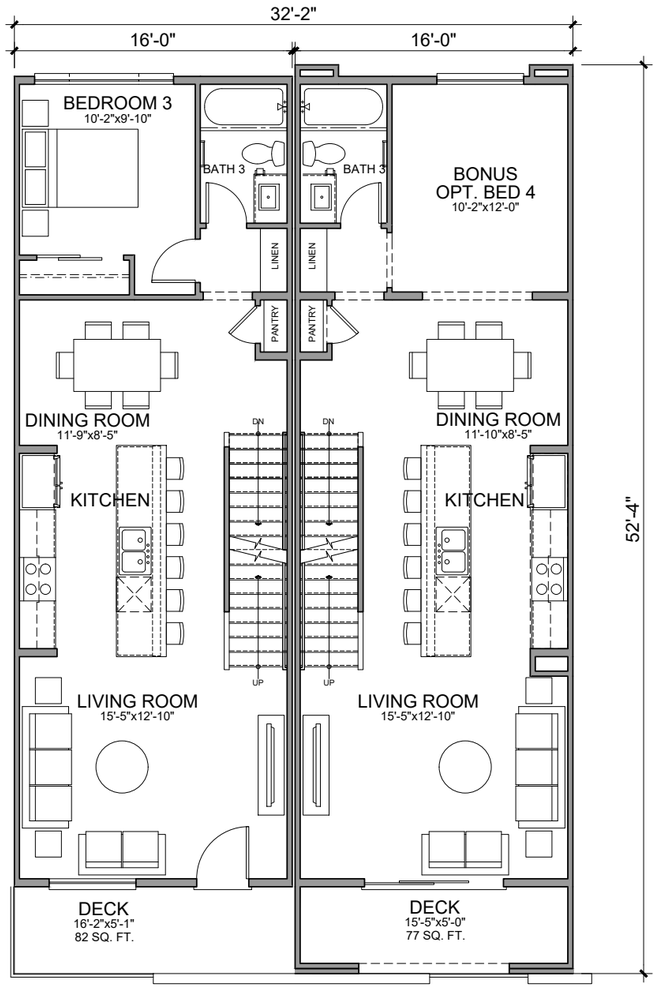
PLAN 2 - NET S.F.	
2 BD / 2.5 BA	
FIRST FLOOR	107 SQ. FT.
SECOND FLOOR	492 SQ. FT.
THIRD FLOOR	604 SQ. FT.
TOTAL	1204 SQ. FT.
DECK	65 SQ. FT.
GARAGE	500 SQ. FT.

PLAN 2 - GROSS S.F.	
2 BD / 2.5 BA	
FIRST FLOOR	122 SQ. FT.
SECOND FLOOR	523 SQ. FT.
THIRD FLOOR	641 SQ. FT.
TOTAL	1286 SQ. FT.
DECK	65 SQ. FT.
GARAGE	529 SQ. FT.



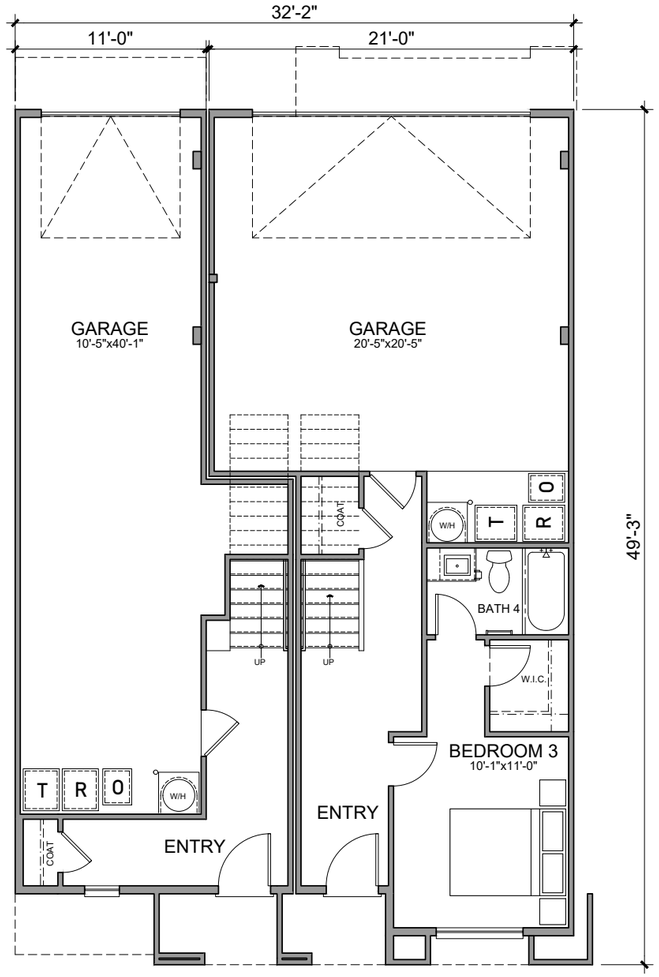
PLAN 3 PLAN 4

THIRD FLOOR



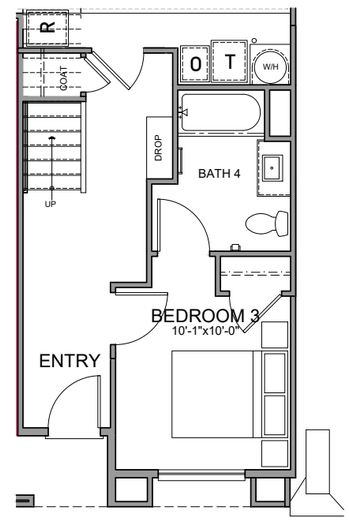
PLAN 3 PLAN 4

SECOND FLOOR



PLAN 3 PLAN 4

FIRST FLOOR



PLAN 4
(ACCESSIBLE)

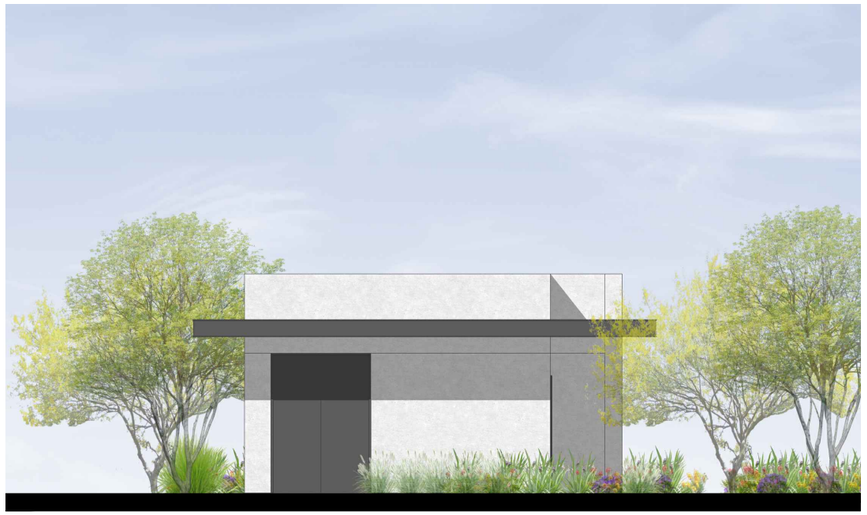
FIRST FLOOR

PLAN 3 - NET S.F.	
3 BD / 3 BA	
FIRST FLOOR	160 SQ. FT.
SECOND FLOOR	705 SQ. FT.
THIRD FLOOR	664 SQ. FT.
TOTAL	1529 SQ. FT.
DECK	82 SQ. FT.
GARAGE	443 SQ. FT.

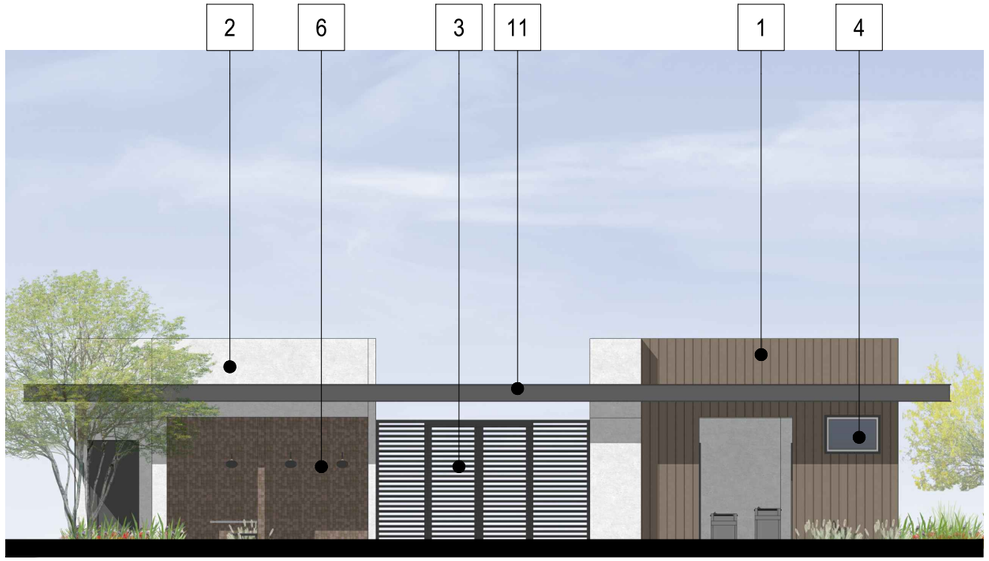
PLAN 3 - GROSS S.F.	
3 BD / 3 BA	
FIRST FLOOR	172 SQ. FT.
SECOND FLOOR	747 SQ. FT.
THIRD FLOOR	702 SQ. FT.
TOTAL	1621 SQ. FT.
DECK	82 SQ. FT.
GARAGE	460 SQ. FT.

PLAN 4 - NET S.F.	
3 BD + BONUS / 4 BD, 4 BA	
FIRST FLOOR	370 SQ. FT.
SECOND FLOOR	705 SQ. FT.
THIRD FLOOR	710 SQ. FT.
TOTAL	1785 SQ. FT.
DECK	77 SQ. FT.
GARAGE	450 SQ. FT.

PLAN 4 - GROSS S.F.	
3 BD + BONUS / 4 BD, 4 BA	
FIRST FLOOR	392 SQ. FT.
SECOND FLOOR	747 SQ. FT.
THIRD FLOOR	750 SQ. FT.
TOTAL	1889 SQ. FT.
DECK	77 SQ. FT.
GARAGE	466 SQ. FT.



RIGHT ELEVATION



REAR ELEVATION

MATERIAL LEGEND

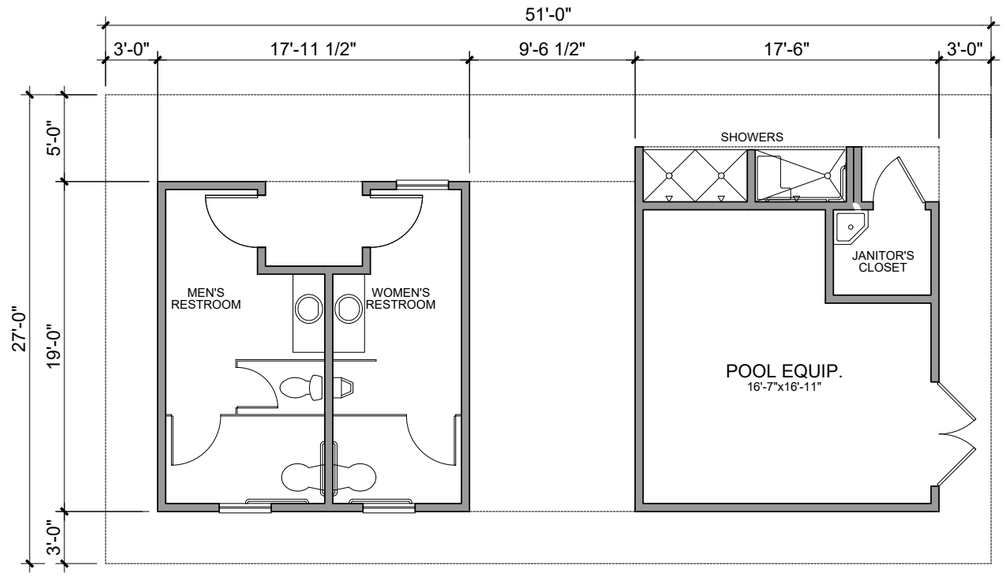
1. VERTICAL SIDING
2. STUCCO
3. GATE
4. VINYL WINDOWS
5. ROOF
6. SHOWERS



LEFT ELEVATION



FRONT ELEVATION



POOL BLDG. GROSS S.F.	
TOTAL	681 SQ. FT.



Legend

1. Recreation Area (Refer to Enlargement on Sheet L2)
2. Open Space (Refer to Enlargement on Sheet L3)
3. Secondary Entry
4. Primary Entry (Refer to Enlargement on Sheet L4)
5. Pedestrian Entry Gate
6. Emergency Vehicular Access
7. Pedestrian Crossing
8. Private Patio with Low Wall and Gate
9. Side Yard with Privacy Fence and Gates
10. Perimeter Fence
11. Perimeter Wall with Enhanced Finish
12. Perimeter Walk

Gross Site Area: ±22.5 ac
Open Space Provided: ±6.5 ac (29%)

Conceptual Tree and Shrub Palette

** Subject to change at final design with approval by the Planning Department*

Trees

Focal Tree
Olea Europaea 'Swan Hill' / Swin Hill Fruitless Olive
Quercus Agrifolia / Coast Live Oak (Multi)
Schinus molle / California Pepper Tree

Parkway / Street Tree
Geijera Parviflora / Australian Willow
Platanus Racemosa / California Sycamore
Platanus X Acerifolia / London Plane Tree
Quercus Agrifolia / Coast Live Oak

Buffer Tree
Grevillea robusta / Southern Silk Oak
Handroanthus Chrysotrichus / Golden Trumpet
Lophostemon Confertus / Brisbane Box
Podocarpus Gracilior / Fern Pine

Recreation Center Palms
Archontophoenix Cunninghamiana / King Palm

Flowering Accent Trees
Cercis Occidentalis / Western Redbud
Jacaranda Mimosifolia / Jacaranda
Lagerstroemia Indica / Crape Myrtle
Magnolia Grandiflora / Southern Magnolia

Courtyard Trees
Arbutus X 'Marina' / Marina Strawberry Tree (Multi)
Eriobotrya Deflexa / Bronze Loquat
Laurus Nobilis / Sweet Bay
Lophostemon Confertus / Brisbane Box

Open Space Trees
Cercis Occidentalis / Western Redbud
Geijera Parviflora / Australian Willow
Ginkgo Biloba / Maidenhair Tree
Platanus X Acerifolia / London Plane Tree
Podocarpus Gracilior / Fern Pine

Shrubs and Groundcover

Agave americana / Century Plant
Agave attenuata / Foxtail Agave
Aloe striata / Coral Aloe
Arbutus unedo 'Compacta' / Dwarf Strawberry Tree
Baccharis pilularis 'Pigeon Point' / Dwarf Coyote Bush
Buxus m. japonica 'Green Beauty' / Green Beauty Japanese Boxwood
Callistemon viminalis 'Little John' / Little John Weeping Bottlebush
Dietes bicolor / Fortnight Lily
Distictis buccinatoria / Blood Red Trumpet Vine
Festuca glauca / Blue Fescue
Festuca mairei / Atlas Fescue
Hesperaloe parviflora / Red Yucca
Laurus nobilis / Sweet Bay
Lavandula angustifolia / English Lavender
Ligustrum japonicum 'Texanum' / Texas Japanese Privet
Liriope muscari 'Big Blue' / Big Blue Lilyturf
Muhlenbergia rigens / Deer Grass
Myrtus compacta / Compact Myrtle
Nandina domestica 'Compacta' / Dwarf Heavenly Bamboo
Podocarpus gracilior 'Column' / Fern Pine
Rhaphiolepis indica / Indian Hawthorn
Rosmarinus officinalis / Rosemary
Salvia leucantha / Mexican Bush Sage
Senecio mandraliscae / Blue Fingers
Trachelospermum asiaticum / Asiatic Jasmine
Westringia fruticosa 'Morning Light' / Morning Light Coast Rosemary

0 20 40 80

POLARIS PLACE - PROJECT ENTITLEMENT CONCEPTUAL SITE PLAN

LENNAR
November 5, 2025

EPTDESIGN



Legend

1. Pool Building
2. Pool Deck
3. Enhanced Paving
4. Pool and Spa
5. Pool Fence
6. Enhanced Finish Wall
7. Concrete Walk
8. Built-In BBQ with Tables and Chairs
9. Lounge Seating
10. Chaise Lounges
11. Pool Side Cabanas with Daybed
12. Overhead Shade Structure
13. Playground with Resilient Play Surface
14. Fire Pit
15. Built-in Seating

Conceptual Tree and Shrub Palette

** Subject to change at final design with approval by the Planning Department*

Trees

Focal Tree
Olea Europaea 'Swan Hill' / Swin Hill Fruitless Olive
Quercus Agrifolia / Coast Live Oak (Multi)
Schinus molle / California Pepper Tree

Parkway / Street Tree
Geijera Parviflora / Australian Willow
Platanus Racemosa / California Sycamore
Platanus X Acerifolia / London Plane Tree
Quercus Agrifolia / Coast Live Oak

Flowering Accent Trees
Cercis Occidentalis / Western Redbud
Jacaranda Mimosifolia / Jacaranda
Lagerstroemia Indica / Crape Myrtle
Magnolia Grandiflora / Southern Magnolia

Courtyard Trees
Arbutus X 'Marina' / Marina Strawberry Tree (Multi)
Eriobotrya Deflexa / Bronze Loquat
Laurus Nobilis / Sweet Bay
Lophostemon Confertus / Brisbane Box

Open Space Trees
Cercis Occidentalis / Western Redbud
Geijera Parviflora / Australian Willow
Ginkgo Biloba / Maidenhair Tree
Platanus X Acerifolia / London Plane Tree
Podocarpus Gracilior / Fern Pine

Recreation Center Palms
Archontophoenix Cunninghamiana / King Palm

Shrubs and Groundcover
Agave americana / Century Plant
Agave attenuata / Foxtail Agave
Aloe striata / Coral Aloe
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Baccharis pilularis 'Pigeon Point' / Dwarf Coyote Bush
Buxus m. japonica 'Green Beauty' / Green Beauty Japanese Boxwood
Callistemon viminalis 'Little John' / Little John Weeping Bottle-bush
Dietes bicolor / Fortnight Lily
Distictis buccinatoria / Blood Red Trumpet Vine
Festuca glauca / Blue Fescue
Festuca mairei / Atlas Fescue
Hesperaloe parviflora / Red Yucca
Laurus nobilis / Sweet Bay
Lavandula angustifolia / English Lavender
Ligustrum japonicum 'Texanum' / Texas Japanese Privet
Liriope muscari 'Big Blue' / Big Blue Lilyturf
Muhlenbergia rigens / Deer Grass
Myrtus compacta / Compact Myrtle
Nandina domestica 'Compacta' / Dwarf Heavenly Bamboo
Podocarpus gracilior 'Column' / Fern Pine
Rhaphiolepis indica / Indian Hawthorn
Rosmarinus officinalis / Rosemary
Salvia leucantha / Mexican Bush Sage
Senecio mandraliscae / Blue Fingers
Trachelospermum asiaticum / Asiatic Jasmine
Westringia fruticosa 'Morning Light' / Morning Light Coast Rosemary

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT RECREATION AREA ENLARGEMENT PLAN

LENNAR
November 5, 2025

0 8 16 32

EPTDESIGN



Enlargement A - North Open Space



Enlargement B - South Open Space

Legend

1. Concrete Walk
2. Amenity Lawn
3. Private Patios with Gate

Conceptual Tree and Shrub Palette

** Subject to change at final design with approval by the Planning Department*

Trees

Focal Tree
Olea Europaea 'Swan Hill' / Swin Hill Fruitless Olive
Quercus Agrifolia / Coast Live Oak (Multi)
Schinus molle / California Pepper Tree

Parkway / Street Tree
Geijera Parviflora / Australian Willow
Platanus Racemosa / California Sycamore
Platanus X Acerifolia / London Plane Tree
Quercus Agrifolia / Coast Live Oak

Flowering Accent Trees
Cercis Occidentalis / Western Redbud
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Lagerstroemia Indica / Crape Myrtle
Magnolia Grandiflora / Southern Magnolia

Courtyard Trees
Arbutus X 'Marina' / Marina Strawberry Tree (Multi)
Eriobotrya Deflexa / Bronze Loquat
Laurus Nobilis / Sweet Bay
Lophostemon Confertus / Brisbane Box

Open Space Trees
Cercis Occidentalis / Western Redbud
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Ginkgo Biloba / Maidenhair Tree
Platanus X Acerifolia / London Plane Tree
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Shrubs and Groundcover
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Laurus nobilis / Sweet Bay
Lavandula angustifolia / English Lavender
Ligustrum japonicum 'Texanum' / Texas Japanese Privet
Liriope muscari 'Big Blue' / Big Blue Lilyturf
Muhlenbergia rigens / Deer Grass
Myrtus compacta / Compact Myrtle
Nandina domestica 'Compacta' / Dwarf Heavenly Bamboo
Podocarpus gracilior 'Column' / Fern Pine
Rhaphiolepis indica / Indian Hawthorn
Rosmarinus officinalis / Rosemary
Salvia leucantha / Mexican Bush Sage
Senecio mandraliscae / Blue Fingers
Trachelospermum asiaticum / Asiatic Jasmine
Westringia fruticosa 'Morning Light' / Morning Light Coast Rosemary

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT OPEN SPACE ENLARGEMENT PLANS

LENNAR
November 5, 2025

0 5 10 20

EPTDESIGN



Legend

1. Decorative Metal Vehicular Entry Gate
2. Decorative Metal Pedestrian Access Gate
3. Perimeter Wall with Enhanced Finish
4. Enhanced Vehicular Rated Entry Paving
5. Enhanced Vehicular Concrete Band

Conceptual Tree and Shrub Palette

** Subject to change at final design with approval by the Planning Department*

Trees

Focal Tree
Olea Europaea 'Swan Hill' / Swin Hill Fruitless Olive
Quercus Agrifolia / Coast Live Oak (Multi)
Schinus molle / California Pepper Tree

Flowering Accent Trees
Cercis Occidentalis / Western Redbud
Jacaranda Mimosifolia / Jacaranda
Lagerstroemia Indica / Crape Myrtle
Magnolia Grandiflora / Southern Magnolia

Shrubs and Groundcover

Agave americana / Century Plant
Agave attenuata / Foxtail Agave
Aloe striata / Coral Aloe
Arbutus unedo 'Compacta' / Dwarf Strawberry Tree
Baccharis pilularis 'Pigeon Point' / Dwarf Coyote Bush
Buxus m. japonica 'Green Beauty' / Green Beauty Japanese Boxwood
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Salvia leucantha / Mexican Bush Sage
Senecio mandraliscae / Blue Fingers
Trachelospermum asiaticum / Asiatic Jasmine
Westringia fruticosa 'Morning Light' / Morning Light
Coast Rosemary

KEYMAP



0 5 10 20

POLARIS PLACE - PROJECT ENTITLEMENT PRIMARY ENTRY ENLARGEMENT PLAN

LENNAR
November 5, 2025

EPTDESIGN



Section A: Primary Entry Gate
Scale: 1/4" = 1'-0"

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT PRIMARY ENTRY GATE SECTION

LENNAR
November 5, 2025

EPTDESIGN



Section B: Aliso Viejo Parkway
Scale: 1/4" = 1'-0"



Section C: Aliso Viejo Parkway
Scale: 1/4" = 1'-0"

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT SITE SECTIONS - PERIMETER

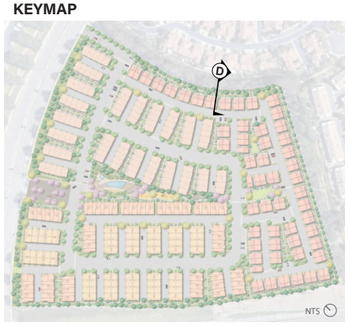
LENNAR
November 5, 2025

EPTDESIGN



Section D: Perimeter Walk
Scale: 1/4" = 1'-0"

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT SITE SECTIONS - PERIMETER

LENNAR
November 5, 2025

EPTDESIGN



Section E: Perimeter Walk
Scale: 1/4" = 1'-0"

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT SITE SECTIONS - PERIMETER

LENNAR
November 5, 2025

EPTDESIGN



Section F: Perimeter Walk
Scale: 1/4" = 1'-0"

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT SITE SECTIONS - PERIMETER

LENNAR
November 5, 2025

EPTDESIGN



Section G: Typical Townhome Courtyard Paseo
Scale: 1/4" = 1'-0"

KEYMAP



POLARIS PLACE - PROJECT ENTITLEMENT SITE SECTIONS - TYPICAL TOWNHOME COURTYARD PASEO

LENNAR
November 5, 2025

EPTDESIGN



POLARIS PLACE - PROJECT ENTITLEMENT SITE PERIMETER WALK

LENNAR
November 5, 2025

EPTDESIGN

November 4, 2025

So Kim
Community Development Director
City of Aliso Viejo
12 Journey, Suite 100
Aliso Viejo, CA 92656

Subject: Polaris Place Residential Development

Dear Ms. Kim,

On behalf of Derek Kegley of Lennar Homes of California, Inc. (Applicant) attached is an application for the Polaris Residential Development project located at 1 – 5 Polaris.

The project site consists of approximately 22.5 acres and is currently developed with office uses and associated infrastructure, as more specifically described below.

- 1 Polaris: APN 623-481-49 – approximately 3.081 acres – developed with approximately 26,356 square feet of office space and surface parking.
- 2 Polaris: APN 623-481-50 – approximately 4.831 acres – developed with approximately 23,676 square feet of office space and surface parking.
- 3 Polaris: APN 623-481-51 – approximately 4.824 acres – developed with approximately 24,794 square feet of office space and surface parking.
- 4 Polaris: APN 623-481-53 – approximately 4.832 acres – developed with approximately 23,710 square feet of office space and surface parking.
- 5 Polaris: APN 623-481-52 – approximately 4.075 acres – developed with approximately 26,763 square feet of office space and surface parking.

This letter provides a description of the proposed project.

Existing General Plan and Zoning Designations

The Project site has the current designations:

- General Plan – All properties - Professional Office (PO)
- Zoning – All properties – Professional Office (PO)

Proposed Entitlements

The project site currently has General Plan land use designation and zoning of Profession Office. Since the proposed Project consists entirely of residential uses, the following entitlements are requested.

- General Plan Amendment
  - PO to Residential High Density (RHD)
- Zone Change
  - PO to Residential High Density (RHD)
- Development Agreement
- Vesting Tentative Tract Map
- Site Development Permit
- Initial Study / Mitigated Negative Declaration

In addition, the Project proposes providing affordable housing in accordance with State Density Bonus Law (SDBL) and will be requesting waivers of development standards and concessions as provided by SDBL.

Proposed Project

The proposed project includes the demolition of the existing office buildings and surface parking lots and construction of 405 for-sale residential dwellings at an average density of 18 dwelling units per acre.

Site Plan

Key features of the proposed site plan include:

- Provide a main gated entry into the new community from the middle of the Project site at the same location as the existing driveway from AVP.
- Provide a secondary gated entry/exit from AVP at the northern boundary of the Project site.
- Provide a third emergency vehicle access (EVA) only near the southern boundary of the Project site.
- The frontage along AVP includes a 30-foot-wide landscape buffer.
- A 32,294 square foot private recreation amenity within an approximately 6.5 acres of open space area is provided at the entry to the community, including a pool, recreation

building, and park area. The recreation amenity will be open to the new residents of the community and privately maintained by the future homeowner's association.

- Internal streets without parking measure 26 feet wide. Streets with parallel parking on one side measure 35 feet wide and streets with parallel parking on both sides measure 42 feet wide. Alley's serving garages measure 24 feet wide with a minimum of 28 feet separation between garage doors.

- Proposed dwellings fronting onto AVP and Pacific Park will have enhanced architecture.

Housing Types

- Four housing products are being provided in a range of sizes to accommodate a range of buyers.

3-Story Duplex

Floor Plan	Sq. Ft.	Beds/Baths	Garage Spaces	No. of Units
P1	2484	4Bd/4.5Ba	2	51
P2	2332	4Bd/4.5Ba	2	54
Total				105

3-Story Townhouse

Floor Plan	Sq. Ft.	Beds/Baths	Garage Spaces	No. of Units
P1	1768	3Bd/3.5Ba	2	64
P2	1931	3Bd/3.5Ba	2	22
P3	2101	4Bd/3.5Ba	2	22
Total				108

3-Story B2B

Floor Plan	Sq. Ft.	Beds/Baths	Garage Spaces	No. of Units
P1*	1443	2Bd/2.5Ba	2	13
P1	1443	2Bd/2.5Ba	2	39
P2	1652	2Bd/2.5Ba	2	48
Total				100

* The 13 P1 units will be designated affordable

3-Story Rowtowns

Floor Plan	Sq. Ft.	Beds/Baths	Garage Spaces	No. of Units
P1*	1304	2Bd/2.5Ba	2	4
P2**	1286	2Bd/2.5Ba	2	4
P3	1621	3Bd/3Ba	2	44
P4	1889	4Bd/4Ba	2	40
Total				92

* The 4 P1 units will be designated affordable
** The 4 P2 units will be designated affordable

Recreation

- A pool and recreation complex is located at the front entry to the community. This facility includes a pool, restroom and recreation building, and grass turf park area. This amenity measures approximately 56,200 square feet, within approximately 6.5 acres of open space.

- Access to the front of the townhome and duplex residential units would occur from landscaped paseos. The paseos measure approximately 23 feet between townhomes and 22 feet between duplexes.

- A walking trail of approximately ½ mile in length around the perimeter of the Project site.

Engineering

- The Project proposes to connect to existing sewer, water and storm drain infrastructure within AVP.

- The Project proposes to use underground modular wetland systems as its water quality BMP and discharge storm water into existing storm drain within AVP.

- The Project will increase the amount of pervious surface, thereby reducing the amount of storm runoff compared to the existing conditions. Therefore, no detention is required.

- All dry utilities (electrical, cable, fiber, etc.) will be underground.

- All grading will balance on the Project site and no import or export will be required.

- Demolition of existing structures will be hauled off-site to a qualified recycling facility as appropriate.

Affordable Housing

- The Applicant proposes to satisfy its affordable housing requirement by constructing 21 Very Low Income units on the Project site (5%) and deed restricting future sale of those units in accordance with the City's affordable housing standards.

- The Applicant requests waivers and concessions in return for providing affordable housing, such as modifications to parking and setback standards. Waivers and concessions would be processed through SDBL and documented in the proposed Development Agreement.

Parking

- Each dwelling unit contains an enclosed 2-car garage. The 3-story Rowtowns have two tandem garage spaces. All other units have a two-car side by side garage. Enclosed garage parking totals 810 parking spaces.

- Guest parking is provided throughout the proposed community. A total of 151 guest spaces are provided.

- No parking off the Project site on AVP is permitted.

- The Applicant proposes a Parking Management Plan that will include numerous provisions to ensure adequate parking is provided. The CC&Rs will require garages to be kept open and available for parking. Guest and homeowner parking permits will be issued to control the number of guests and ensure residents do not park in guest spaces. The new homeowner's association will be responsible for enforcement.

Trash

- Each dwelling will have trash carts.

- Carts will be stored in the enclosed garages. Sufficient space is designed for cart storage within each garage.

- Residents will be responsible for pulling trash carts to the street. Trash trucks will not drive down the alleys, therefore residents would need to place the trash carts on the loop road.

CEQA

- The Applicant would like to begin the CEQA process as soon as possible, including notification under SB 18 and AB 52.

- The Applicant team will prepare all technical studies for City review, including:

    - Air Quality

- Cultural
- Geotechnical investigation
- Preliminary Hydrology Report
- Preliminary WQMP
- Phase I Environmental Site Assessment Report
- Noise
- Preliminary Sewer Report
- Preliminary Water Report
- Traffic and VMT Assessment Report
- Tribal Cultural Resources
- Fire Master Plan
- Preliminary Utility Assessment

- The Applicant anticipates the Project will not generate significant unavoidable impacts and will qualify for an Initial Study / Mitigated Negative Declaration. The Applicant Team will prepare a draft IS/MND for City review.

We look forward to working with you on the entitlement of this project. If you have any questions, please contact me at pcarlson@carlsonsls.com or 949-289-3625.

Sincerely,



Peter K. Carlson
President

Attachments

- Site Plan
- Conceptual Architecture and Floorplans

ALISO VIEJO

1-5 Polaris

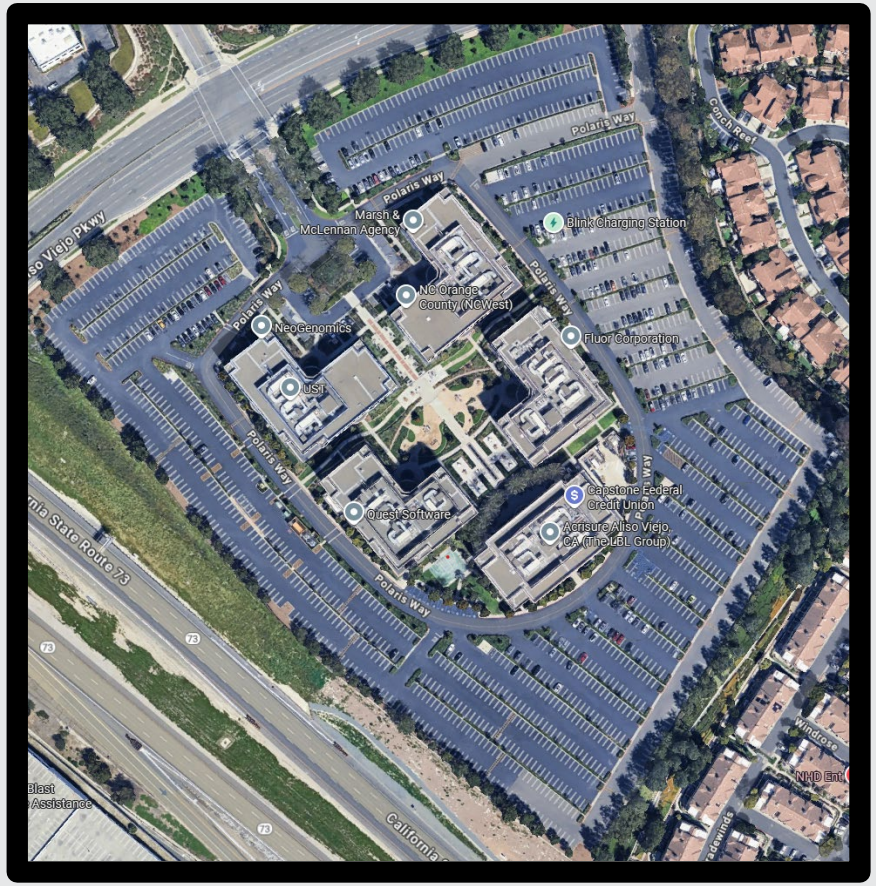
Concept Review

Existing Site



Site Layout

Existing (Two-Story Offices)



Proposed (405 for-sale Townhomes)



Proposed Project



City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Ann Eifert, Director of Financial Services

SUBJECT: FISCAL YEAR 2024-25 ANNUAL COMPREHENSIVE FINANCIAL REPORT

Recommended Action:

Receive and file the Annual Comprehensive Financial Report (ACFR) for the year ended June 30, 2025.

Fiscal Impact:

As of June 30, 2025, the City's combined fund balance for all funds increased by $8.9 million for a total of $54.5 million. Of this amount, $44.4 million is in the General Fund and $10.1 million is restricted (special revenue funds such as gas taxes, Measure M, grants, etc.).

Background:

The Annual Comprehensive Financial Report is prepared in conformity with Generally Accepted Accounting Principles (GAAP) and audited by independent certified public accountants at Davis Farr, LLP. The goal of the audit is to provide reasonable assurance that the City's financial statements are free from material misstatement.

As part of the audit, Davis Farr, LLP issued the following reports:

- Auditor's Communication With Those Charged With Governance
- Report on Internal Controls
- Report on Agreed-Upon Procedures Applied to the Appropriations Limit
- Report on Agreed-Upon Procedures for the City's Treasurer's Monthly Report

Discussion:

The annual audit of the financial statements was completed in November 2025 and prepared in accordance with all applicable accounting standards. The independent auditor has issued an unmodified opinion of the City's financial statements for the fiscal year (FY) ended June 30, 2025, which provides reasonable assurance that the financial

statements of the City are presented fairly, in all material respects, in accordance with generally accepted accounting principles.

In addition to reviewing and examining the City's financial records, the auditors also reviewed the internal control framework of the City. Internal control is a set of activities, rules, and procedures implemented by the City to ensure the integrity of financial and accounting information, promote accountability, and prevent fraud. The audit did not identify any errors, and no recommendations were provided regarding the City's internal controls. The auditors also issued their reports on the agreed upon procedures for the City's monthly treasurer's report and the City's appropriations limit worksheets. These reports are included as attachments 4 and 5.

Government-Wide Financials

As presented in the ACFR Statement of Activities, the City's total revenues from all sources were $39.2 million, while the total cost of all programs and services was $32.0 million. Some of the financial highlights at the government-wide level are:

- Assets and deferred outflows of resources of the City exceeded its liabilities and deferred inflows of resources at June 30, 2025, by $150.5 million. This amount is referred to as the net position of the City.
- The City increased its overall net position by $7.2 million or 5.0% higher compared to FY 2023-24.
- As of June 30, 2025, the City's overall fund balance increased by $8.9 million for a total of $54.5 million for all funds.

General Fund Highlights

The General Fund is the primary operating fund of the City and is 81.5% of the City's overall fund balance. General Fund operations include Administration and Support, Community and Economic Development, Recreation and Community Services, Public Safety, and Public Works. The General Fund also funds the City's debt service payment on the Certificates of Participation (COP) for the Aliso Viejo Ranch and capital projects at City facilities.

For FY 2024-25, General Fund revenues and transfers-in total $32.1 million and exceeded expenditures and transfers-out of $25.5 million, resulting in an increase to the General Fund balance by $6.6 million. Ending fund balance for the year increased by 17.3% to $44.4 million. This balance is comprised of assigned funds of approximately $35.1 million and $9.4 million of unassigned funds. Assigned funds include $4.0 million for contingencies, $1.0 million for insurance and/or benefit obligations, $14.3 million for asset replacement, and $15.7 million for emergencies. The unassigned portion is the part of fund balance that is available for use without constraints established by legal requirements totaling $9.4 million and meets the City's Fund Balance Policy target of 25-35% of the operating budget. The total fund balance at June 30, 2025, is equal to 160% of the FY 2025-26 adopted General Fund budget appropriations.

Actual revenues, transfers in, and other financing sources of $32.1 million exceeded the adopted budget projections of $26.8 million by $5.3 million, or 19.9% higher than budget estimates. This is primarily a result of unexpected growth in sales tax from EFuel, LLC, new businesses at The Commons at Aliso Viejo Town Center, and a greater share of the County pool. Investment earnings were higher by $1.6 million; however, this includes $0.6 million for unrealized gains in the City's portfolio and $0.2 million in accrued interest. Transfers-in exceeded budget estimates by $0.3 million and is a result of better-than-expected net income from operations at the Aliso Viejo Center and $0.1 million from grant reimbursements, such as, the Permanent Local Housing Allocation Program, LEAP, and CDBG. Table 1 provides a summary of the City's General Fund resources compared to FY 2023-24 actuals as well as the FY 2024-25 adopted budget.

Table 1: General Fund Resources

General Fund Resources	FY 2023-24 Actuals	FY 2024-25 Adopted Budget	FY 2024-25 Actuals	FY 2024-25 Budget Variance Over/(Under)
Property Tax	$ 9,911,102	$ 10,179,100	$ 10,287,203	$ 108,103
Sales Tax	8,359,623	8,900,000	11,154,921	2,254,921
TOT	1,570,575	1,600,000	1,699,738	99,738
Franchise Fees	1,793,611	1,661,670	1,738,860	77,190
Recreation	1,593,376	1,685,500	1,525,242	(160,258)
Building & Planning	1,240,630	1,100,000	1,353,812	253,812
Fines & Forfeitures	296,430	185,000	293,289	108,289
Investment Earnings[1]	708,216	495,000	2,138,091	1,643,091
Other[2]	2,700,363	944,049	1,870,143	926,094
Total Resources	**$ 28,173,926**	**$ 26,750,319**	**$ 32,061,299**	**$ 5,310,980**

[1] FY 24-25 Investment Earnings include $836,004 in accrued interest and market adjustments

[2] FY 24-25 Actuals include other financing sources for lease and SBITA acquisition per GASB 87 and 96 in the amount of $365,786

Actual expenditures and transfers out totaled $25.5 million and was $1.7 million under budget due to conservative spending across all departments. Administration and support costs were $0.7 million under budget primarily from salary savings due to new employees and partially vacant positions during the fiscal year. Public Safety costs were $0.9 million lower than budget primarily due to high vacancy levels within the Orange County Sheriff's Department. Savings of $0.4 million in Recreation and Community Services are from lower-than-expected operating costs at Gold Cost Farms, facility maintenance, instructor fees, and a vacant Recreation Coordinator position. Public Works was also under budget by $0.2 million from savings for permits, environmental compliance, and street maintenance. Lastly, $0.3 million in expected capital improvement costs were not expended due to project delays at the Aquatic Center. Savings across these areas offset the additional $0.6 million in economic development spending from increases in tax subsidy payments to EFuel. Table 2 provides a summary of the City's General Fund expenditures compared to FY 2023-24 actuals as well as the FY 2024-25 adopted budget.

Table 2: General Fund Appropriations

General Fund Appropriations	FY 2023-2024 Actuals	FY 2024-25 Amended Budget	FY 2024-25 Actuals	FY 2024-25 Budget Variance (Over)/Under
Admin & Support	$ 4,978,006	$ 4,976,449	$ 4,235,385	$ 741,064
Community Services	2,743,811	3,165,132	2,744,808	420,324
Comm & Econ Dev	3,982,795	4,136,826	4,785,189	(648,363)
Public Works	1,724,588	1,914,500	1,668,271	246,229
Public Safety	10,005,398	11,332,287	10,462,135	870,152
City Hall	201,147	251,290	195,732	55,558
Debt Service	655,795	658,050	655,369	2,681
Transfers/Other	159,252	201,402	529,411	(328,009)
Total Operating	**$ 24,450,792**	**$ 26,635,936**	**$ 25,276,300**	**$ 1,359,636**
Capital Improvement	267,472	526,000	224,521	301,479
Total General Fund	**$ 24,718,264**	**$ 27,161,936**	**$ 25,500,821**	**$ 1,661,115**

Special Revenue Funds

The City's special revenue fund balances at the end of FY 2024-25 total $10.1 million and include transportation and street improvement funding, such as gas taxes, SB1, and Measure M, various federal and state grants, and other funds restricted for a specific purpose. Of the $10.1 million, approximately $7.9 million is restricted for street capital projects, $0.4 million for public safety, and $1.8 million for community development and other projects. Table 3 summarizes the balances for the City's special revenue funds at June 30, 2025.

Table 3: Special Revenue Funds

Fund	Beginning Balance	Total Revenues	Total Expenses	Ending Balance
202 - Traffic Congestion Relief Fund	$ 76,068	$ 3,362	$ -	$ 79,430
203 - Gas Tax	959,679	1,515,830	1,125,975	1,349,535
204 - Measure M	1,903,028	1,089,672	757,795	2,234,906
205 - SB1-RMRA	1,155,282	1,504,342	84,914	2,574,710
215 - Public Safety Grants	288,518	211,170	125,409	374,279
221 - AQMD (AB2766)	1,480,498	134,120	-	1,614,618
225 - Integrated Waste Management	70,924	66,225	62,347	74,802
231 - Other Grants	44,085	297,672	295,320	46,438
241 - Technology Fund	397,435	91,408	65,853	422,990
245 - Development Impact	1,377,777	-	-	1,377,777
251 - Federal Grants	(14,062)	126,549	199,515	(87,027)
260 - AV Center	-	3,193,144	3,193,144	-
261 - Aquatic Center	-	1,003,374	1,003,374	-
411 - Debt Service	546	655,673	655,921	298
511 - AV Ranch Foundation	100	-	-	100
TOTAL	**$ 7,739,880**	**$ 9,892,542**	**$ 7,569,565**	**$ 10,062,857**

Attachments:

1. FY 2024-25 Annual Comprehensive Financial Report
2. Auditor Communication Letter
3. Report on Internal Controls
4. Report on Appropriations Limit
5. Report on Treasurer's Monthly Statement
6. Presentation

ALISO VIEJO

Annual Comprehensive Financial Report Fiscal Year Ended June 30, 2025 Aliso Viejo, California



ABOUT THE COVER:

The FY 2024-25 Annual Comprehensive Financial Report cover displays a view of Aliso Viejo City Hall, located at 12 Journey in the city of Aliso Viejo.



City Hall provides municipal services for the residents of Aliso Viejo. The building has housed the city's government offices and city council chambers since Aliso Viejo was incorporated on July 1, 2001 as Orange County's 34th city.

CITY OF ALISO VIEJO, CALIFORNIA

ANNUAL COMPREHENSIVE FINANCIAL REPORT

Year Ended June 30, 2025

Prepared by

DEPARTMENT OF FINANCIAL SERVICES

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CITY OF ALISO VIEJO
ANNUAL COMPREHENSIVE FINANCIAL REPORT
Year Ended June 30, 2025
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ALISO VIEJO
Live Life Inspired

MAYOR
Tiffany Ackley
MAYOR PRO TEM
Max Duncan
COUNCILMEMBER
Garrett Dwyer
COUNCILMEMBER
Mike Munzing
COUNCILMEMBER
Tim Zandbergen
CITY MANAGER
Mitzi Ortiz
CITY ATTORNEY
Scott C. Smith

November 13, 2025

Honorable Mayor, Members of the City Council, and Residents of Aliso Viejo:

It is with great pleasure that we present the City of Aliso Viejo's Annual Comprehensive Financial Report (ACFR) for fiscal year (FY) ended June 30, 2025. This report has been prepared by the Department of Financial Services in conformity with Generally Accepted Accounting Principles (GAAP) and has been audited in accordance with Generally Accepted Auditing Standards (GAAS) by a firm of licensed Certified Public Accountants.

The report consists of management representations concerning the finances of the City of Aliso Viejo. Consequently, responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with the City. To provide a reasonable basis for making these representations, management has established a comprehensive internal control framework that is designed to protect the government's assets from loss, theft, or misuse and to compile sufficient reliable information for the preparation of the financial statements. Since the cost of internal controls should not outweigh their benefits, the City's comprehensive framework of internal controls has been designed to provide reasonable, rather than absolute, assurance that the financial statements are free from material misstatement. To the best of our knowledge and belief, the enclosed information is accurate in all material respects and reported in a manner designed to fairly present the financial position of the City. All disclosures necessary to enable an understanding of the City's financial activities are included.

Davis Farr, LLP, a firm of licensed Certified Public Accountants, has audited the City of Aliso Viejo's financial statements. The goal of the independent audit is to provide reasonable assurance that the City's financial statements for the fiscal year ended June 30, 2025, are free of material misstatement. The independent audit involved examining on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. The independent auditor concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that the City of Aliso Viejo's financial statements for the fiscal year ended June 30, 2025, are fairly presented in conformity with GAAP. The independent auditor's report is presented as the first component of the financial section of this report.

This ACFR includes the financial activity for all funds of the City. In addition to the fund-by-fund financial information presented in the City's financial statements, government-wide financial statements are also included. The government-wide financial statements include a Statement of Net Position that provides the total net equity of the city, including infrastructure, and the Statement of Activities which shows the cost of providing government services.

These statements were prepared using the accrual basis of accounting whereas the fund financial statements were prepared using the modified accrual method. A reconciliation report is provided as a key to understanding the changes between the two reporting methods. In addition, the Statement 34 standard includes an emphasis on the City's major funds as shown in the Governmental Fund Statements. These statements, combined with other information, are further analyzed in a narrative section called Management's Discussion and Analysis (MD&A). The MD&A provides "financial highlights" and interprets the financial reports by analyzing trends and explaining changes, fluctuations, and variances in the financial data. In addition, the MD&A is intended to disclose any known significant events or decisions that affect the financial condition of the City. This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it.

PROFILE OF THE CITY

The City of Aliso Viejo was incorporated on July 1, 2001, as a general law city under the laws of the State of California. The City of Aliso Viejo encompasses approximately seven square miles in south Orange County and has a population of 50,213 per data provided by the California Department of Finance (DOF). Approximately 46 miles south of Los Angeles and 70 miles north of San Diego, the City is adjacent to the cities of Laguna Beach, Laguna Woods, Laguna Hills, and Laguna Niguel.

The City operates under the Council-Manager form of government. In June 2023, the City Council voted to adopt district-based elections, comprising of five districts elected for staggered four-year terms of office. The Mayor and Mayor Pro-Tem are selected by the Council from among its members to serve one-year terms. The Council acts as the legislative and policy-making body of the City, enacting all laws and directing such actions as required, to provide for the general welfare of the community.

The City Manager is appointed by the City Council and is responsible for overseeing the operations of the City and implementing the policy decisions made by the City Council. The City Council also appoints the City Attorney and City Treasurer. All other department heads and employees are appointed by the City Manager.

The City provides municipal services through a combination of in-house staffing and contract services. Police, fire, street maintenance, building, code enforcement, and legal services are all provided through contracts. The Aliso Viejo Community Association (AVCA), a Master Homeowners Association for the City of Aliso Viejo, owns and manages 21 parks within the City limits. AVCA also maintains 600 acres of landscaped slopes and parkways. The City owns and manages Iglesia Park, Vista Park, and the Aliso Viejo Ranch. The Orange County Library System provides public library services.

The legal level of budgetary control is the level at which management may not allocate resources without the City Council's approval. The level of budgetary control for the City is established at the fund level. Prior to the beginning of each fiscal year, the City Council adopts the annual budget, which serves as the foundation for the City's financial planning and control. All governmental funds are annually appropriated. The budget is arranged by fund, function, and department and presented to the Council by the City Manager. Transfers of appropriations within a fund can be made with the approval of the City Manager and Director of Financial Services. The City Council's approval is required for all budget amendments that result in a change to the total expenditure of a fund. The budget is reviewed mid-year in January by the City Manager and the Director of Financial Services to ensure compliance with City Council direction. The midyear budget is then presented to and

reviewed by the City Council and consideration is given to necessary changes for new programs, projects, and other adjustments to ensure that expenditures and revenues are in line with the budgeted projections.

The City maintains an encumbrance accounting system as an additional method of budgetary control. As demonstrated by the statements and schedules included in the financial section of this report, the City continues to meet its responsibility for sound fiscal management.

ECONOMIC CONDITION AND OUTLOOK

The U.S. economy during the fiscal year outperformed expectations with fears of a recession not materializing despite inflation, higher interest rates, and uncertainty regarding the new U.S. Administration's policies on tariffs, immigration, and other federal programs. According to the Bureau of Economic Analysis, Real Gross Domestic Product decreased by 0.6% in the first quarter of 2025; however, the second quarter bounced back with a 3.8% increase. Although the national unemployment rate continues to be low, job growth has slowed in recent months, increasing to 4.3% in August 2025 from 4.0% in January 2025.

Due to continued economic uncertainty, UCLA Anderson's Forecast in June 2025 expects economic growth to slow to near zero with only modest recovery anticipated through 2027. The forecast also expects inflation to rise as tariffs begin to affect supply chains, and unemployment is expected to reach 4.6%. UCLA does not anticipate a recession in 2025-26; however, international conflicts, tariffs, the impact of government shutdowns, immigration policy, higher unemployment, and continued high costs of insurance and housing, can dampen consumer confidence and push the national economy into a recession.

LOCAL ECONOMY

Although California's unemployment rate was estimated at 6.1% for July 2025, Orange County's rate has been consistently lower at 4.8%. Aliso Viejo's unemployment rate is lower than that of the County at 4.3%, according to data by the California Employment Development Department. Aliso Viejo is comprised of single-family homes, condominiums, and apartments as well as a mixture of retail, office, light industrial, and service entities, providing a diverse tax base for the City. Most retail and commercial businesses are oriented toward serving residents and visitors. The City is also home to regional and corporate headquarters in a variety of industries, particularly in the biomedical and healthcare industries, and is home to Soka University. The City is nearly built out, with limited future opportunities for new residential or commercial construction. However, efforts to revitalize existing sites, such as in the Aliso Viejo Town Center and The Commons at Aliso Viejo Town Center provide new opportunities and funding sources for the City.

The City's major revenue sources are property taxes, sales taxes, franchise fees, and transient occupancy taxes. General Fund resources, including transfers-in and other financing sources for FY 2024-25, totaled $32.1 million, compared to $28.2 million in the prior year. The revenue increase is primarily attributed to sales tax increasing year over year by 33.4%, or $2.8 million. The City benefitted from the unexpected growth of EFuel, LLC, which saw significant increases in sales tax revenue. Also contributing to the increase is the opening of the City's first and only car dealership, Tesla, along with 99 Ranch Market, and other businesses at The Commons. Furthermore, with the increase in the City's overall tax-base, the City's allocation of sales tax from the County Pool also increased by more than 37.0%. Property taxes remain stable, with modest increases of approximately $0.4 million, or 3.8% from growth in assessed values due to annual inflationary adjustments and higher

housing prices as low housing inventory continues to keep prices high. Transient occupancy taxes increased by $0.1 million or 8.2% from the City's two hotels, Homewood Suites and the Renaissance Clubsport. The Renaissance completed significant renovations, which had resulted in lower occupancy rates in the prior year. Franchise fees remained flat at $1.7 million.

Although revenues were higher compared to FY 2023-24, budgeted revenues for FY 2025-26 are lower than FY 2024-25 actuals by $5.3 million or 16.6%. Sales tax projections at the time of adoption had not anticipated growth with EFuel and were conservatively estimated to reflect lower consumer spending as consumers grapple with inflation, higher interest rates, and continued increases with housing and insurance costs. Property tax was also conservatively projected at $10.3 million and included only a 2% inflationary increase allowable under Prop 218. Estimates also factored in potential reductions in assessed values from appeals and lower transfer taxes as a result of a potentially slowing housing market. The reduction in overall revenue is also attributed to investment earnings as it excludes any market adjustments and unrealized gains.

The FY 2025-26 operating budget is balanced with General Fund resources and expenditures estimated at $26.8 million. General Fund reserves will fund $1.0 million in capital improvements at various City facilities. Budget reductions were made across all departments in an effort to control costs.

LONG TERM FINANCIAL PLANNING

As of June 30, 2025, the City has a General Fund balance of $44.4 million, which represents 160% of total FY 2024-25 General Fund appropriations. The balance includes $4.0 million for contingencies, $1.0 million for insurance and benefit obligations, $14.3 million for future replacement of City infrastructure assets, and $15.7 million for emergencies and unanticipated CIP projects. The unassigned fund balance is $9.4 million and is consistent with the City's adopted Fund Balance Policy, which strives to maintain an unassigned fund balance of 25-35% of budgeted operational expenditures. This provides a safety net that ensures government services are not impacted in the event of an unanticipated revenue shortfall or emergency. In addition, the City has $10.1 million in restricted special revenue funds for street and community development projects.

On August 13, 2019, the City issued $12,250,000 of tax-exempt Certificates of Participation (COP) to provide financing for the construction of the Aliso Viejo Ranch. The principal is due annually in amounts ranging from $230,000 to $635,000 on November 1 of each year commencing in 2020 through the year 2049. Interest is payable semi-annually in amounts ranging from $9,525 to $212,325 and is due on May 1 and November 1 of each year commencing on November 1, 2019. The interest payments have rates ranging from 0.96% to 3.09%. As of June 30, 2025, the principal remaining on the COP is $11,035,000.

City Council Goals and Priorities

Over the past few years, the City has undergone significant staffing changes, including directors, the appointment of a new City Manager, and newly elected Council Members. As a result of the changes, Staff considered it prudent to obtain the services of Baker Tilly Advisory Group, LP, to facilitate the development of a short-term strategic plan for the City. A strategic plan is a vital tool for cities to ensure that the City Council's goals and priorities are effectively communicated to employees and the community. This will also include the development of an action plan to align City resources towards achieving Council's goals.

On May 21, 2025, the City Council adopted the following three goals:

1. Financial Stability – Continue to ensure the City's financial stability through careful planning and evaluation of revenue and investment opportunities.
2. Infrastructure Investment – Maintain, replace, and fund the City's capital assets through infrastructure investment.
3. Aliso Viejo Ranch – Develop a plan to establish the Ranch as a prized community asset.

To accomplish these goals, the City Council also established the following priorities:

1. Identify and pursue alternative funding opportunities to support key City projects, the Capital Improvement Program, and goals.
2. Monitor and routinely review contracts and agreements to ensure the appropriate delivery of services, alignment with procurement policies and procedures, and to identify potential cost savings.
3. Prepare a master schedule to plan and budget future maintenance needs based on the recently completed asset evaluation.
4. Review expenditures and seek opportunities for cost savings at the Aliso Viejo Ranch.
5. Identify services and programs at the Ranch that will increase community participation.
6. Create a projection to increase cost recovery for the Ranch.

MAJOR INITIATIVES

The City's Economic Development program continued ongoing initiatives aimed at facilitating the retention and expansion of existing businesses, attracting new businesses to the community and promoting the City's "business friendly" environment.

During FY 2024-25, the City's first and only car dealership, Tesla, opened its doors at The Commons at Aliso Viejo Town Center. In addition, 99 Ranch Market, Daiso, MiniSo, and various restaurants also began operations within the City. In the next year, the City anticipates the continued revitalization of The Commons with the opening of new entertainment ventures such as Lucky Strike and Sender One Climbing, as well as additional dining options in Aliso Viejo Town Center. Lastly, new housing development projects are in various stages of development throughout the City.

In 2016, the City entered into an economic development subsidy agreement with EFuel, LLC, an on-site mobile fueling business. Under the agreement, the City provides sales tax payments of 50% for the first $800,000 of sales tax received and 70% for amounts above $800,000. EFuel expanded their business during the fiscal year resulting in total sales tax of $2.5 million. As a result, the City abated sales tax in the amount of $1.6 million to EFuel, resulting in net revenue of $0.9 million to the City.

In August 2023, the City entered into another economic development subsidy agreement with Hunt and Sons, LLC, which has a similar business model to EFuel. The agreement contained similar subsidy terms provided to EFuel. Based on reported sales tax revenue generation of approximately $2.8 million, payments to Hunt and Sons was estimated to total $1.8 million during the fiscal year, providing net income to the City of approximately $1.0 million.

RELEVANT FINANCIAL POLICIES

The City has made a practice of living within its means since incorporation. In the fiscal year 2005-06, the City Council formally adopted a Management and Budget policy to promote sound financial management which, in turn, led to improved bond ratings and lower cost of capital. The City continues to be conservative with expenditures while maintaining adequate reserves in accordance with City policies. General Fund surpluses, as well as outside funding sources when available, have been used to fund projects as directed by the City Council. To uphold the City's reputation of providing excellent amenities for residents and businesses, City staff continues to actively pursue outside grants and funding opportunities whenever possible. The City's Fund Balance Policy was approved in 2012 to establish procedures for reporting unrestricted fund balances in the City's financial statements. The policy authorizes the City Manager and Director of Financial Services to prepare financial reports which accurately categorize fund balance per GASB 54, *Fund Balance Reporting and Governmental Fund Type Definitions.* The City's long-term financial plans are also in accordance with these policies.

AWARDS AND ACKNOWLEDGMENTS

The Government Finance Officers Association (GFOA) offers a Certificate of Achievement for Excellence in Financial Reporting to cities for their Annual Comprehensive Financial Report (ACFR). This Certificate is a prestigious award, recognizing conformance with the highest standards of state and local government financial report preparation. In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized ACFR, whose contents conform to program standards. Such an ACFR must satisfy both generally accepted accounting principles and applicable legal requirements. The City submitted its FY 2023-24 ACFR and received the award for excellence in financial reporting from GFOA. The Certificate is valid for a period of one year. The City will also be submitting its FY 2024-25 ACFR to GFOA for review. We would like to recognize the assistance of the Financial Services staff in the preparation of the ACFR and our independent auditor, Davis Farr, LLP for their expertise and guidance in preparing the financial report. Through the team effort of the City Council and staff, the City has been able to maintain a sound financial base from which to operate and continue to provide a high level of service to the community.

Respectfully submitted,



Mitzi Ortiz
City Manager

CITY OF ALISO VIEJO

LIST OF PRINCIPAL OFFICALS

COUNCIL-MANAGER FORM OF GOVERNMENT

CITY COUNCIL

TIFFANY ACKLEY
Mayor

MAX DUNCAN
Mayor Pro-Tem

GARRETT DWYER Councilmember	MIKE MUNZING Councilmember	TIM ZANDBERGEN Councilmember

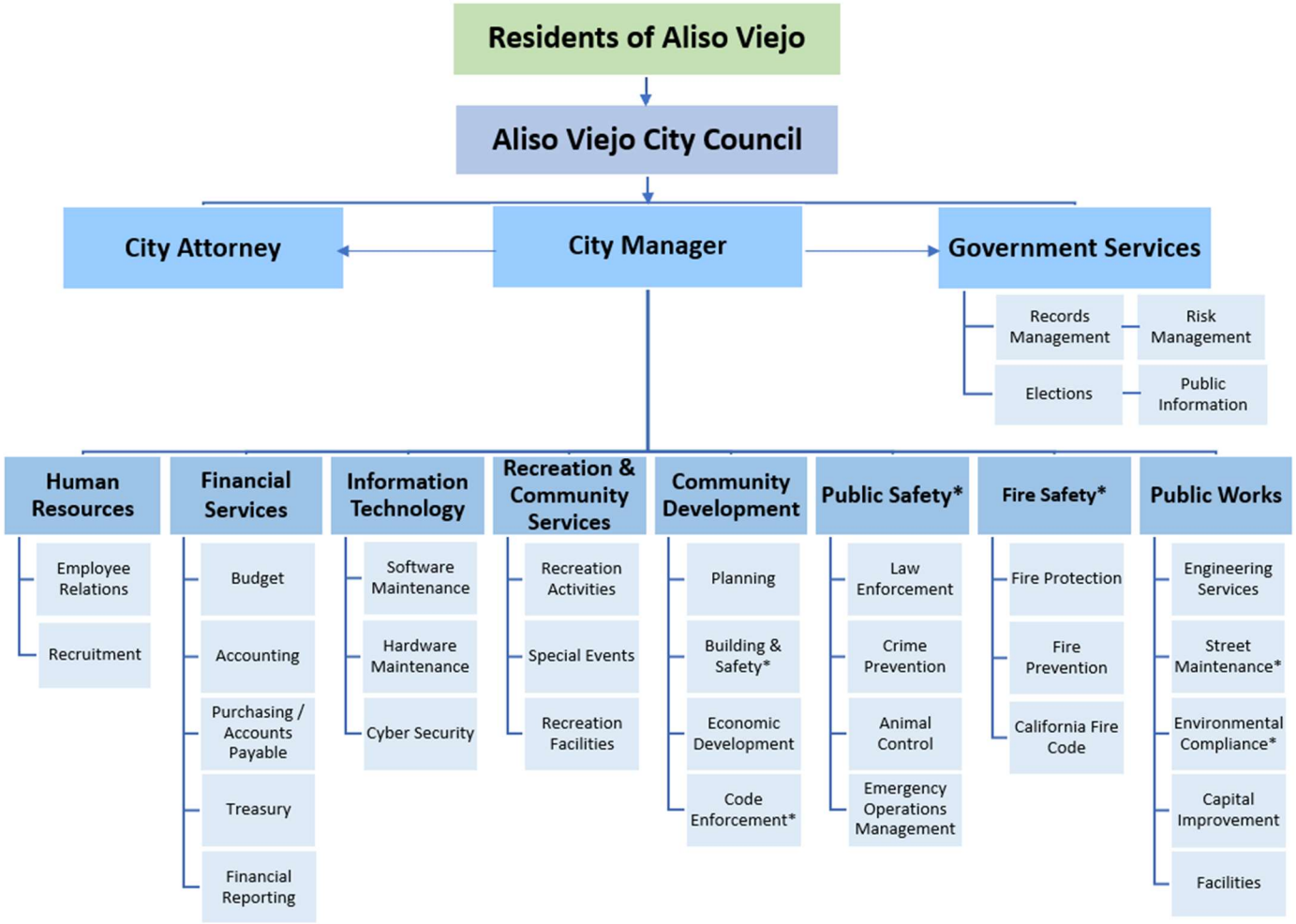
CITY ADMINISTRATION

MITZI ORTIZ
City Manager

Scott Smith, City Attorney (Best Best & Krieger)
Ann Eifert, Director of Financial Services/City Treasurer
So Kim, Director of Community Development
Shaun Pelletier, City Engineer/Public Works Director
Isaac Aziz, Information Technology Manager
Lizzy Mendoza, Community Services Manager
Kathy Bailor, Interim City Clerk
Captain Ryan Buhr, Chief of Police Services (Orange County Sheriff's Department)
Division Chief Michael Summers, Fire Services (Orange County Fire Authority)

Organization Chart

June 30, 2025



*Contract Services

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

City of Aliso Viejo
California

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

June 30, 2024

Christopher P. Morrill

Executive Director/CEO

DavisFarr
CERTIFIED PUBLIC ACCOUNTANTS

Davis Farr LLP
18201 Von Karman Avenue | Suite 1100 | Irvine, CA 92612
Main: 949.474.2020 | Fax: 949.263.5520

Independent Auditor's Report

City Council
City of Aliso Viejo
Aliso Viejo, California

Report on the Audit of the Financial Statements

Opinions

We have audited the financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of the City of Aliso Viejo (the City), as of and for the year June 30, 2025, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements present fairly, in all material respects, the respective financial position of the governmental activities, each major fund, and the aggregate remaining fund information of the City, as of June 30, 2025, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

During the year ended June 30, 2025, the City implemented Governmental Accounting Standards Board (GASB) Statement No. 101: Compensated Absences. Our opinion is not modified with respect to this matter.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the City and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements

The City's management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for one year after the date that the financial statements are issued.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control–related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the *management's discussion and analysis, budgetary comparison information, capital assets – modified approach for infrastructure, and pension and other post-employment benefit schedules* be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City's basic financial statements. The *combining and individual nonmajor fund financial statements and schedules* are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The *combining and individual nonmajor fund financial statements and schedules* are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the *combining and individual nonmajor fund financial statements and schedules* are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the Annual Comprehensive Financial Report. The other information comprises the *introductory section* and *statistical section* but does not include the financial statements and our auditor's report thereon. Our opinions on the financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon. In connection with our audit of the financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Report on Summarized Comparative Information

We have previously audited the City's June 30, 2024, financial statements, and we expressed unmodified audit opinions on those audited financial statements in our report dated November 21, 2024. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2024 is consistent, in all material respects, with the audited financial statements from which it has been derived.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated November 13, 2025 on our consideration of the City's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's internal control over financial reporting and compliance.

Davis Farr LLP

Irvine, California
November 13, 2025

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The purpose of the management's discussion and analysis (MD&A) is to help City residents and other readers understand what the financial statements and notes in this financial report say about the City's financial health and why it has changed since last year. It contains information drawn from those other parts of the report, accompanied by explanations informed by the finance staff's knowledge of the City's finances. The MD&A also provides an overview of the City's financial activities for the year ended June 30, 2025. Please read it in conjunction with the transmittal letter at the front of this report and the accompanying basic financial statements which follow this section.

If you have any questions about this report or require further information, contact the Department of Financial Services at finance@avcity.org or (949) 425-2520.

Financial Highlights

- Assets and deferred outflows of resources of the City exceeded its liabilities and deferred inflows of resources at June 30, 2025, by $150.5 million. This amount is referred to as the net position of the City. Of this amount, $42.3 million is unrestricted.
- The City increased its overall net position by $7.2 million or 5.0% for a total net position of $150.5 million.
- General Fund resources, which include revenues, transfers-in, and other financing sources, total $32.1 million, exceeding expenditures and transfers out of $25.5 million, resulting in an increase to the General Fund balance by $6.6 million to $44.4 million. This balance is comprised of assigned funds of approximately $35.0 million and $9.4 million of unassigned funds. The estimated fund balance at the fiscal year ended June 30, 2025, is equal to 160% of the FY 2025-26 Adopted General Fund budget appropriations, including capital and debt service payments.
- As of June 30, 2025, the City's governmental funds reported combined ending balances of $54.5 million, an increase of $8.9 million from the prior year. Of this amount, $10.2 million is restricted or non-spendable and $44.3 million is unrestricted.

Overview of the Financial Statements

This annual report consists of a series of financial statements. The Statement of Net Position and the Statement of Activities provide information about the activities of the City as a whole and allow a longer-term view of the City's finances. Fund Financial Statements tell how City services were financed in the short-term as well as what remains for future spending. Fund financial statements also report the City's operations in more detail than the government-wide statements by providing information about the City's most significant funds.

Reporting the City as a Whole: The Statement of Net Position and the Statement of Activities

The Statement of Net Position and the Statement of Activities report information about the City as a whole and in a way that helps clarify the City's overall financial position. These statements include all assets and liabilities using the accrual basis of accounting, which is similar to the accounting method used by most private sector companies. All current year revenues and

expenses are taken into account, regardless of when cash is received or paid. These two statements report the City's net position and changes in them. Net position, which is the difference between assets and liabilities, is one way to measure the City's financial health, or financial position. Over time, increases or decreases in the City's net position is one indicator of whether its financial health is improving or deteriorating. Consideration should also be given to other non-financial factors, such as changes in the City's property tax base and the condition of the City's roads, to assess the overall health of the City.

All of the City's basic services are considered to be governmental activities. The Statement of Net Position and the Statement of Activities present information about these governmental activities, including general government, community development, community services, public safety, and public works. Property tax, sales tax, transient occupancy tax, and franchise fees finance over 78.1% of these activities.

Reporting the City's Most Significant Funds: Fund Financial Statements

The Fund Financial Statements provide detailed information about the most significant funds - not the City as a whole. In addition to the General Fund, the Aliso Viejo Center is included. Lesser funds are collectively reported as Nonmajor Governmental Funds. Some funds are required to be established by State law. However, the City Council establishes many other funds to help it control and manage money for particular purposes or to show that it is meeting legal responsibilities for using certain taxes, grants, and other money.

The City currently has just one type of fund - governmental - which uses the modified accrual accounting approach. Governmental funds focus on how money flows into and out of those funds and the balances left at year-end that are available for spending. Most of the City's basic services are reported in governmental funds. Under the modified accrual method of accounting, revenues are recognized in the accounting period in which they become measurable and available to finance expenditures of the current fiscal period while expenditures are recognized in the accounting period in which the liability is incurred.

The governmental fund statements provide a detailed short-term view of the City's general government operations and the basic services it provides. Governmental fund information helps the reader determine whether there are more or less financial resources that can be spent in the near future to finance the City's programs. The relationship and differences between governmental activities reported in the Statement of Net Position and the Statement of Activities and the governmental funds statements are detailed in the reconciliations immediately following each of the fund financial statements.

The City as Trustee: Reporting the City's Fiduciary Responsibilities

The City is the trustee, or fiduciary, for certain amounts held on behalf of developers, property owners, and others. The City's fiduciary activities are reported in the Statement of Fiduciary Assets and Liabilities. We exclude these activities from the City's other financial statements because the City cannot use these assets to finance its operations. The City is responsible for ensuring that the assets reported in these funds are used only for their intended purposes.

THE CITY AS A WHOLE

Our analysis focuses on the net position (Table 1) and change in net position (Table 2) of the City's governmental activities. The City has no business-type activities.

Table 1
Condensed Statement of Net Position

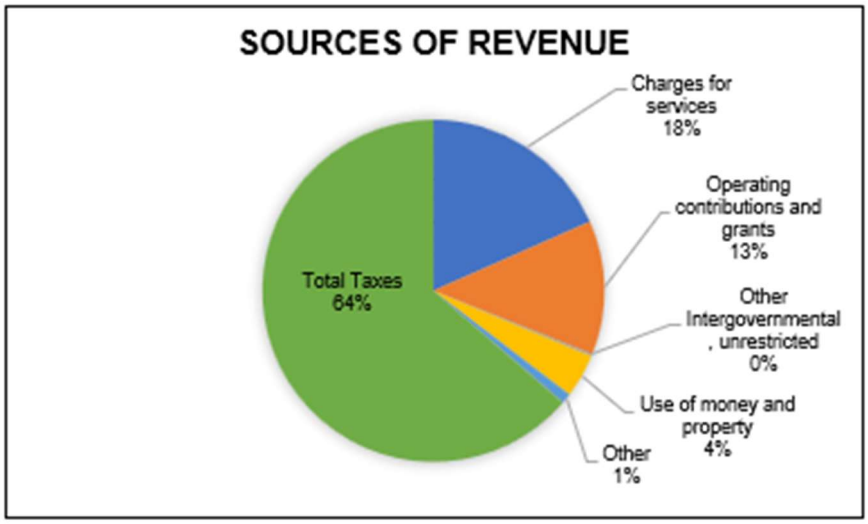
	Governmental Activities	
	2025	2024
Current and other assets	$ 59,734,443	$ 51,738,117
Capital assets, net	110,397,038	111,853,655
Total assets	**170,131,481**	**163,591,772**
Total deferred outflows of resources	**1,018,488**	**1,270,778**
Current liabilities	6,012,219	6,647,110
Non current liabilities	14,055,457	14,118,971
Total liabilities	**20,067,676**	**20,766,081**
Total deferred inflows of resources	**586,184**	**834,081**
Net Position:		
Net investment in capital assets	97,997,803	99,321,092
Restricted	10,222,546	7,522,162
Unrestricted	42,275,760	36,419,134
Total net position	**$ 150,496,109**	**$ 143,262,388**

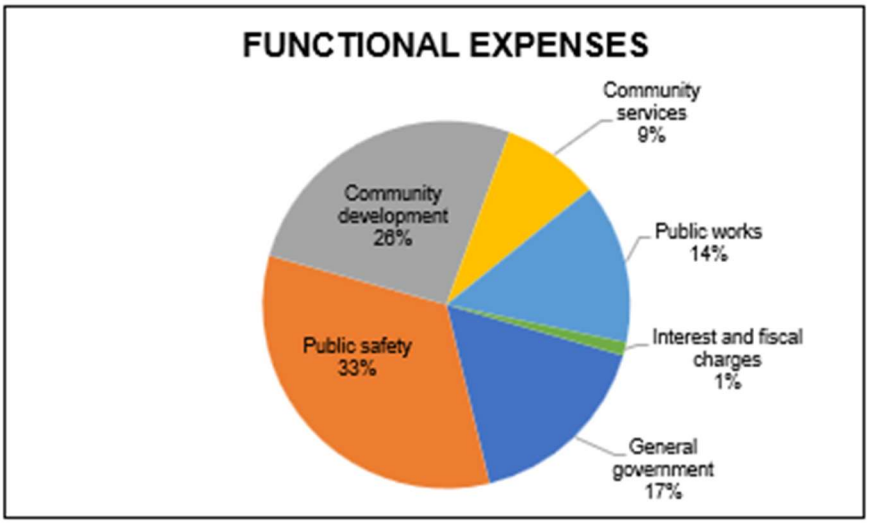
Assets and deferred outflows of resources of the City exceeded its liabilities and deferred inflows of resources at June 30, 2025, by $150.5 million. Total assets increased by $6.5 million or 4.0% due to increases in cash and investments primarily in the General Fund and street improvement funds, such as Measure M, Gas Tax, and SB1. Total deferred outflows of resources decreased by $0.3 million or 19.9% as a result of lower pension related resources. Total liabilities decreased by $0.7 million or 3.4% due to a decrease in accounts payable and deposits payable. Total deferred inflows of resources decreased by approximately $0.3 million or 29.7% because the prior year included lease receivables for City Hall.

The City increased its overall net position by $7.2 million or 5.0% from the prior year. The largest portion of the City's net position reflects its investment in its buildings and infrastructure. Net investment in capital assets for FY 2024-25 total $98.0 million and represents 65.1% of the City's total net position. $10.2 million is restricted, representing special revenue resources that are subject to their funding stipulations, such as street improvements, specific public safety expenditures, and community development projects. Unrestricted net position totals $42.3 million and is an increase of $5.9 million, which is largely attributed to an increase in the General Fund balance.

Table 2
Change in Net Position

	2025	2024
Revenues		
Program Revenues:		
Charges for services	$ 7,205,235	$ 7,731,011
Operating contributions and grants	4,962,919	5,427,985
General Revenues:		
Taxes:		
Sales taxes	11,154,921	8,359,623
Property taxes	10,287,203	9,911,103
Franchise taxes	1,813,044	1,875,533
Transient occupancy taxes	1,699,738	1,570,575
Other Intergovernmental, unrestricted	81,644	64,044
Use of money and property	1,621,512	1,207,332
Other	378,730	747,990
Total Revenues	$ 39,204,946	$ 36,895,196
Expenses		
General government	5,363,026	6,125,440
Public safety	10,585,244	10,147,491
Community development	8,399,470	7,679,606
Community services	2,755,431	2,730,921
Public works	4,500,614	5,310,206
Interest and fiscal charges	367,460	382,504
Total expenses	$ 31,971,245	$ 32,376,168
Increase (Decrease in net position)	**$ 7,233,701**	**$ 4,519,028**
Net position - beginning of year, as restated (note 18)	$ 143,262,388	$ 138,743,360
Net position - end of year	$ 150,496,089	$ 143,262,388





Total revenues for governmental activities amounted to $39.2 million during FY 2024-25 and reflect an increase of $2.3 million or 6.3% over the prior year. Significant sales tax increases due to the growth of EFuel, LLC, a fueling company based in Aliso Viejo, largely offset decreases in program revenues due to lower demand for facility rentals at the Aliso Viejo Ranch and Aliso Viejo Center. Functional expenditures totaled $32.0 million and decreased by $0.4 million or 1.3% compared to the prior year from lower expenditures in public works due to the deferral of the Glenwood street improvement project. Total revenues exceeded program expenses by $7.2 million in FY 2024-25.

Revenues

The City's major general revenue sources are property taxes, sales taxes, franchise fees, and transient occupancy taxes. Property taxes total $10.3 million, an increase of $0.4 million or 3.8% due to higher assessed property values from annual inflationary adjustment of 2%, the maximum allowed under Prop 13.

Transient occupancy taxes totaled $1.7 million, up by $0.1 million or 8.2%. This was primarily due to renovations at the Renaissance ClubSport in the prior year which hampered occupancy rates. Sales tax revenue saw a significant increase of $2.8 million or 33.4% from growth in one of the City's highest sales tax producers, EFuel, the opening of Tesla at The Commons at Aliso Viejo Town Center, and a higher allocation of the County's pool.

Franchise fees decreased by approximately $62,000 or 3.3%, which is attributable to lower receipts from gas and cable fees. The use of money and property, which includes investment and rental income at City Hall, increased by 34.3% to $1.6 million primarily as a result of higher interest rates.

Program revenues include charges for services, operating grants and contributions, and capital contributions and grants. Overall program revenues decreased by $1.0 million or 7.5%. Revenue from services decreased approximately $0.5 million or 6.8% from lower demand in facility rentals at the Aliso Viejo Ranch and Aliso Viejo Center. In addition, other contributions and grants decreased by $0.5 million or 8.6% from the end of CDBG-CV funding provided in response to the Covid epidemic.

Expenses

Total expenses for all City services, which include law enforcement, animal control, building and planning services, public works, engineering, environmental compliance, and administration decreased by $0.4 million or 1.3%. Expenditures for Community Development increased by $0.7 million due to increases in sales tax subsidy payments for the City's two sales tax sharing agreements with EFuel and Hunt and Sons, LLC. This was offset by a decrease in public works spending of $0.8 million from the delay of the Glenwood street rehabilitation project, which was rescheduled for FY 2025-26.

General Government expenses include City Council, City Manager, City Attorney, City Clerk, Human Resources, Financial Services, Information Technology, and other general expenses, such as insurance premiums, maintenance of City Hall, and community outreach. General Government expenses decreased by $0.8 million or 12.4% as a result of a one-time severance payment in the prior year and salary savings from positions that were vacant for part of FY 2024-25.

The County of Orange approved new labor agreements in 2023 resulting in increased wages and benefits for their employees, which increased costs for public safety by $0.4 million or 4.3%. Increases from the contract were offset with the freezing of one motor officer position and other vacancy credits within the Sheriff's Department.

Community Services expenditures were flat at $2.7 million given the effort to offset cost increases from salaries and inflation with various budget reductions.

Government Activities

Tables 3 and 3A present the cost of each of the City's programs: General Government (Administrative Services), Community Development, Community Services, Public Safety, and Public Works as well as each program's net cost (total cost less revenues generated by the activities). The total cost of all governmental activities in FY 2024-25 was $32.0 million. That cost is financed by program revenues of $12.2 million. Net cost of services is $19.8 million and is funded with general fund resources.

Table 3
Net Cost of Governmental Activities
Fiscal Year Ended June 30, 2025

	Total Cost of Services	Program Revenues	Net Revenue/Cost of Services
General government	$ 5,363,026	$ -	$ 5,363,026
Public safety	10,585,244	(614,500)	9,970,744
Community development	8,399,470	(5,374,046)	3,025,424
Community services	2,755,431	(1,537,901)	1,217,530
Public works	4,500,614	(4,641,707)	(141,093)
Interest and fiscal charges	367,460	-	367,460
Total	$ 31,971,245	$ (12,168,154)	$ 19,803,091

Table 3
Net Cost of Governmental Activities
Fiscal Year Ended June 30, 2024

	Total Cost of Services	Program Revenues	Net Revenue/Cost of Services
General government	$ 6,125,440	$ -	$ 6,125,440
Public safety	10,147,491	(611,869)	9,535,622
Community development	7,679,606	(6,259,786)	1,419,820
Community services	2,730,921	(1,612,114)	1,118,807
Public works	5,310,206	(4,675,227)	634,979
Interest and fiscal charges	382,504	-	382,504
Total	$ 32,376,168	$ (13,158,996)	$ 19,217,172

FINANCIAL ANALYSIS OF THE CITY'S FUNDS

Governmental Funds

At year-end, the City's Governmental Funds reported a combined Fund Balance of $54.5 million, an increase of 19.5% or $8.9 million from the prior year. Increases to the fund balances include $6.6 million in the General Fund and $2.3 million in restricted street improvement funds from gas taxes, SB1, Measure M, and AQMD. The fund balance includes $5,885 in non-spendable funds. Restricted funds of $10.1 million include approximately $1.9 million for community development projects, $7.8 million for capital projects, and $0.4 million for public safety. $35.1 million or 64.3% of the fund balance is assigned for contingencies, insurance obligations, asset replacement, and emergencies. The remaining $9.3 million or 17.0% of the fund balance is unassigned, which is available for spending at the City's discretion.

General Fund

The General Fund is the primary operating fund of the City and is 81.5% of the City's overall fund balance. General fund operations include Administration and Support, Community and Economic Development, Community Services, Public Safety, and Public Works. The General Fund also funds the City's debt service payment on the Certificates of Participation (COP) for the Aliso Viejo Ranch. General Fund capital improvement includes building improvements at City Hall and Aliso Viejo Ranch, as well as the Aquatic Center, Aliso Viejo Center, and the Iglesia Park and Community Center.

For FY 2024-25, General Fund revenues, transfers-in, and other financing sources totaled $32.1 million. Total resources exceeded expenditures and transfers out in the amount of $25.5 million, resulting in an increase to the General Fund balance of $6.6 million. Ending fund balance for the year increased by 17.3% to $44.4 million. This balance is comprised of assigned funds of $35.1 million and $9.4 million of unassigned funds. Assigned funds include $4.0 million for contingencies, $1.0 million for insurance and/or benefit obligations, $14.3 million for asset replacement, and $15.7 million for emergencies. The unassigned portion is the part of fund balance that is available for use without constraints established by legal requirements and totals $9.4 million and meets the City's Fund Balance Policy target of 25-35% of the operating budget. The total fund balance at the fiscal year ended June 30, 2025, is equal to 160% of the FY 2025-26 adopted General Fund budget appropriations.

The City's major revenue sources are property taxes, sales taxes, franchise fees, and transient occupancy taxes. Total General Fund resources for FY 2024-25 totaled $32.1 million, compared to $28.2 million in the prior year. Property taxes total $10.3 million, an increase of $0.4 million or 3.8%, due to higher assessed property values from the maximum 2% annual inflationary adjustment under Prop 13, as well as a continued strong housing market, despite higher interest rates. Transient occupancy taxes totaled $1.7 million, up by $0.1 million or 8.2%. This was primarily due to renovations at the Renaissance ClubSport in the prior year which hampered occupancy rates. Sales tax revenue saw a significant increase of $2.8 million or 33.4% from growth in one of the City's highest sales tax producers, EFuel, the opening of Tesla at The Commons at Aliso Viejo Town Center, and a higher allocation of the County's pool. Franchise fees decreased by $55,000 or 3.1%, which is attributable to lower receipts from gas and cable franchise fees. Revenue from Recreation decreased approximately $0.1 million or 4.9% from

lower demand in facility rentals at the Aliso Viejo Ranch and fewer participants in recreation classes. The use of money and property, which includes investment and rental income at City Hall, increased by $1.4 million primarily as a result of higher interest rates and a market adjustment of $0.6 million.

In addition, the General Fund saw a decrease in transfers in as a result of lower operating results at the Aliso Viejo Center. Net income at the Center totaled $0.8 million compared to $1.4 million in the prior year. Demand for facility rentals have normalized after a couple years of high demand as COVID restrictions ended.

General Fund expenditures and transfers out totaled $25.5 million and was $0.8 million higher than FY 2024-25 from increases in spending for economic development tax subsidy payments to the City's two tax-sharing agreements to EFuel and public safety.

Aliso Viejo Center

The Aliso Viejo Center provides facility rental and banquet services for large social gatherings, such as conferences and weddings. FY 2024-25 revenue totaled $3.2 million and was 12.8% or $0.5 million lower compared to the prior year. Expenditures increased by $0.1 million and totaled $2.4 million and reflected higher wages and additional marketing efforts to increase reservations. Although net income of $0.8 million was down from $1.4 million in the prior year, it exceeded budget expectations by $0.2 million.

General Fund Budgetary Highlights

Revenues: Actual revenues, transfers in, and other financing sources of $32.1 million exceeded the adopted budget projections of $26.8 million by $5.3 million, or 19.9% higher than budget estimates. This is primarily a result of unexpected growth in sales tax from EFuel, new businesses at The Commons at Aliso Viejo Town Center, and a greater share of the County pool. Investment earnings was higher by $1.6 million and included a $0.8 million market adjustment.

Transfers-in exceeded budget estimates by $0.3 million. This is primarily a result of better-than-expected net income from operations at the Aliso Viejo Center and $0.1 million from grant reimbursements, such as from the Permanent Local Housing Allocation Program, LEAP, and CDBG.

Expenditures: Actual expenditures and transfers out totaled $25.5 million and was $1.7 million under budget due to conservative spending across all departments. Administration and support costs were $0.7 million under budget from salary savings due to new employees and partially vacant positions during the fiscal year. Law enforcement contract costs were $0.9 million lower than budget due to high vacancy levels within the Orange County Sheriff's Department. Savings of $0.4 million in Community Services are from lower operating costs at Gold Cost Farms, facility maintenance costs, instructor fees, and a vacant Recreation Coordinator position. Public Works was also under budget by $0.2 million from lower-than-expected costs in environmental compliance and street maintenance. Lastly, $0.3 million in expected capital improvement costs were not expended due to project delays planned at the Aquatic Center. Savings across these areas offset the additional $0.6 million in economic development spending from increases in the tax subsidy payments to EFuel.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

As of June 30, 2025, the City had $110.4 million invested in a broad range of capital assets, including police equipment, buildings, land, park facilities, furniture and fixtures, and roads. (See Table 4 below). Additions to capital assets being depreciated were made in the amount of $0.6 million. This amount includes the purchase and replacement of a new HVAC unit at City Hall, new projectors at the Aliso Viejo Center, playground surface replacement at Vista Park, and renewal of software subscriptions for building and planning. Disposals of $1.4 million included the removal of a median between Aliso Creek and Pacific Park. Depreciation expense in the amount of $1.5 million was incurred in FY 2024-25. For additional information on capital assets, refer to Note 6 of Notes to the Financial Statements.

Table 4
Capital Assets at Year End
(Net of Depreciation)

Asset Type	2025	2024
Land	$ 14,315,978	$ 14,315,978
Buildings and improvements	36,046,837	36,627,939
Equipment, furniture and fixtures	162,720	270,940
Other infrastructure	5,274,581	6,201,107
Streets and highways	53,871,430	53,871,430
Construction in progress	-	-
Right-to-use assets	31,084	39,020
Right-to-use subscription assets	694,408	527,241
Total capital assets	$ 110,397,038	$ 111,853,655

Overall Pavement Network

The City of Aliso Viejo elected to use the modified approach in reporting their streets and roads network. Under the modified approach, infrastructure assets that are part of a network or subsystem of a network are not required to be depreciated if certain requirements are met, which are disclosed in the accompanying *Basic Financial Statements* and *Required Supplementary Information*. In March 2002, the City Council approved a condition level of 80 as the minimum acceptable Pavement Condition Index (PCI). The following schedule discloses a comparison between the City's assessed condition level of the streets and roads network as of May 2024, and the City's adopted target level of condition.

Actual Assessed Condition Level	Minimum Condition Level
82	80

Under the modified approach, GASB Statement No. 34 requires that condition assessments be performed every three years. Last completed in May 2024, the City traditionally performs an assessment every two years. It is the City's intention to have another complete assessment performed on or before fiscal year ending June 30, 2026.

During the year ended June 30, 2025, actual streets and roads maintenance project costs were $2.1 million compared to the estimate of $4.1 million. The amount of underspending was due to the delay of the Glenwood street rehabilitation project, which was rescheduled to be completed in FY 2024-25 but moved to FY 2025-26.

Debt

On August 13, 2019, the City issued $12,250,000 of tax-exempt Certificates of Participation to provide financing for the construction of the Aliso Viejo Ranch. The principal is due annually in amounts ranging from $230,000 to $635,000 on November 1 of each year commencing in 2020 through the year 2049 with a coupon rate ranging from 2% to 4%.

In March of 2014, staff coordinated the refinancing of the Community Facilities District (CFD) bonds issued in conjunction with the Glenwood development. Based on the final pricing of the CFD bonds, Glenwood property owners are saving an average of $899 per year. Subsequently, in December 2023, staff coordinated the refinancing of the 2014 bonds, providing savings of approximately $800 on average per year for residents within the CFD.

Non-Current Liabilities

Changes in non-current liabilities for the fiscal year ended June 30, 2025, are provided in Table 5. For additional information on non-current liabilities, refer to Note 7 of the Notes to the Financial Statements.

Table 5
Non-Current Liabilities
June 30, 2025

	Balance at July 1, 2024	Additions	Deletions	Balance at June 30, 2025	Amount due within one year	Amount due beyond one year
Bonds Payable	$ 11,295,000	$ -	$ (260,000)	$ 11,035,000	$ 270,000	$ 10,765,000
Unamortized premium	838,988	-	(32,269)	806,719	32,269	774,450
Lease liability	38,375	-	(7,408)	30,967	7,606	23,361
Subscription liability	298,428	365,786	(137,665)	526,549	137,579	388,970
Compensated absences	257,435	105,500	-	362,935	184,214	178,721
Total	$ 12,728,226	$ 471,286	$ (437,342)	$ 12,762,170	$ 631,668	$ 12,130,502

ECONOMIC FACTORS AND FISCAL YEAR 2025-26 BUDGET

Although the U.S. economy in FY 2024-25 outperformed expectations, forecasts expect growth to slow due to higher interest rates, inflation, as well as rising national and consumer debt. Recession forecasts continue to be mixed, with the effects of tariffs not yet fully known. Furthermore, the rising costs of insurance, food, fuel, consumer goods, and services may exacerbate an already slowing economy.

The FY 2025-26 budget includes appropriations for programs and projects necessary to provide essential services to the community. General Fund revenues are estimated to total $26.8 million. The General Fund operating budget is balanced totaling approximately $26.8 million. A General Fund operating surplus of approximately $40,000 is projected with General Fund reserves needed to fund $1.0 million in capital improvements, resulting in a net decrease to fund balance in the amount of $1.0 million. The estimated year-end General Fund balance will decrease by approximately $1.0 million to $43.4.

General Fund Revenues

Revenue forecasts for FY 2025-26 were prepared using estimates and projections provided by the State, other agencies, and City consultants. Due to continued uncertainty regarding the economy, General Fund resources were conservatively estimated to total $26.8 million and is approximately $5.2 million less than FY 2024-25 actuals. The conservative estimates at the time did not include any projected growth in sales tax from EFuel and include overall lower franchise fees, building and planning fees, parking fines, interest earnings, and transfers from the Aliso Viejo Center.

The City receives 82.2% of its General Fund revenue from taxes. This includes property tax, sales tax, transient occupancy tax (TOT), and franchise fees. Property tax is estimated at $10.3 million and is projected to remain relatively flat compared to the current year. Although Proposition 13 allows for a maximum of 2% increase annually in a property's assessed value, the additional revenue gained from the annual adjustment is offset by potential losses from valuation appeals and unpredictable transfer taxes.

Sales tax is conservatively estimated at $8.5 million, a decrease of $2.6 million or 25.3% from FY 2024-25 actuals and did not anticipate any growth that EFuel recently experienced. Mid-year adjustments will be presented to City Council if the growth in sales tax from EFuel is received from the California Department of Tax and Fee Administration and therefore requiring a corresponding budget appropriation for increases to sales tax subsidy payments.

TOT and franchise fees remain consistent year after year at approximately $1.6 million. The City has two hotels and therefore any significant growth is not anticipated. Franchise fees from the City's utilities and waste hauler are expected to increase slightly, however, these increases are offset by decreases in cable fees and the potential loss of approximately $50,000 annually from the County as a result of a new Waste Disposal Agreement, which is currently being negotiated.

Other revenue sources include recreation fees, building and planning, traffic and parking fines, investments earnings, and net income from the Aliso Viejo Center. Recreation fees total

approximately $1.6 million and include facility rentals at the Ranch, classes, and camps. Although the current year saw a decline in larger events hosted by non-residents, such as weddings, FY 2025-26 estimates are flat compared to FY 2024-25. Building and planning fees are estimated to decline because the current year includes one-time fees from the expansion of the Kaiser facility. Investment income is estimated at $0.9 million as a result of higher interest rates. Net income from the Aliso Viejo Center is estimated at $0.7 million and reflects a return to normal demand levels.

General Fund Appropriations

The General Fund operating budget totals $26.8 million and includes $0.2 million in transfers to the Aliso Viejo Aquatic Center Fund to bridge the operating gap at that facility. The operating budget includes salaries and benefits for 29 full-time positions, five elected officials, and part-time positions primarily in Community Services. Salary and benefit expenses include merit-based increases and cost-of-living adjustments (COLA) in accordance with the Classification and Compensation Plan approved by Council in 2018, which is based on the Annual Consumer Price Index, Urban Wage Earners and Clerical Workers, Los Angeles-Long Beach-Anaheim (CPI-W) of 3.1%.

In addition, appropriations include CalPERS pension costs of $0.4 million and $0.2 million in unfunded pension liability. As of the most recent CalPERS actuarial valuation, the City's accrued liability's funded ratio is above the required funding level of 80%, as established by Council policy in 2017.

The FY 2025-26 budget provides the necessary funding to continue essential services throughout the community. The operating budget reflects an increase of approximately 6.0%, or $1.5 million compared to the FY 2024-25 actuals. The year-over-year increase is primarily a result of $1.3 million more for public safety due to increases in the law enforcement contract with the Orange County Sheriff's Department, animal care services with the City of Mission Viejo, and crossing guard services.

Budget reductions were made across all departments to offset higher costs and balance the operating budget. Reductions include freezing of a motor officer position within the law enforcement contract and the conversion of a full-time Emergency Management Coordinator to part-time, as well as reductions for professional services in Administration and Support, Public Works, and Community Development. Costs were also reduced for recreation, classes, and training.

FY 2025-26 also includes a re-prioritization of City infrastructure spending and includes over $1.0 million in General Fund capital improvement at City facilities, as well as over $7.2 million in special-revenue funded street improvements.

Special Revenue Funds

In addition to the General Fund, the City uses "Special Revenue Funds" to fund various City expenditures. Special Revenue Funds are typically restricted funds, such as Gas Tax, SB 1, Measure M, Federal Grants, and Other Grants. These funds can only be used for specific purposes. Revenue and appropriations for all Special Revenue Funds for FY 2025-26 are approximately $9.8 million and $14.1 million, respectively.

At the end of FY 2025-26 operations, the estimated combined fund balance for all City funds will be approximately $49.2 million.

CONTACTING THE CITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, investors, and creditors with a general overview of the City's finances and to show the City's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the City's Department of Financial Services, City of Aliso Viejo, 12 Journey, Suite 100, Aliso Viejo, California, 92656, or call (949) 425-2520.

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CITY OF ALISO VIEJO

STATEMENT OF NET POSITION
June 30, 2025
(With Comparative Data for Prior Year)

	Governmental Activities	
	2025	2024
Assets:		
Cash and investments (note 2)	$ 55,665,590	48,296,183
Receivables:		
Accounts	651,908	666,825
Accrued interest	362,069	306,708
Lease (note 4)	59,018	214,497
Due from other governments	2,989,973	2,228,506
Inventory	5,885	6,211
Prepaid costs	-	19,187
Capital assets not being depreciated (note 6)	68,187,408	68,187,408
Capital assets, net of depreciation (note 6)	42,209,630	43,666,247
Total Assets	170,131,481	163,591,772
Deferred Outflows of Resources:		
Pension related items (note 9)	970,976	1,216,320
OPEB related items (note 10)	47,512	54,458
Total Deferred Outflows of Resources	1,018,488	1,270,778
Liabilities:		
Current liabilities:		
Accounts payable	2,738,788	3,282,647
Accrued liabilities	298,132	251,025
Deposits payable	1,805,739	2,175,904
Unearned revenue	217,876	147,842
Compensated absences - current portion (note 7)	184,214	112,666
Long-term liabilities - current portion (note 7)	447,454	376,376
OPEB liability current portion (note 10)	320,016	300,650
Non-current liabilities:		
Compensated absences - non-current portion (note 7)	178,721	144,769
Long-term liabilities - non-current portion (note 7)	11,951,781	12,094,415
Net pension liability (note 9)	1,682,414	1,685,168
OPEB liability non-current portion (note 10)	242,541	194,619
Total Liabilities	20,067,676	20,766,081
Deferred Inflows of Resources:		
Pension related items (note 9)	23,591	58,112
OPEB related items (note 10)	499,779	549,950
Leases (note 4)	62,814	226,019
Total Deferred Inflows of Resources	586,184	834,081
Net Position:		
Net investment in capital assets (note 15)	97,997,803	99,321,092
Restricted for:		
Community development projects	1,922,107	1,890,321
Public works	7,926,160	5,343,323
Public safety	374,279	288,518
Unrestricted	42,275,760	36,419,134
Total Net Position	$ 150,496,109	143,262,388

See notes to financial statements

CITY OF ALISO VIEJO

STATEMENT OF ACTIVITIES
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

Functions/ Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Contributions and Grants	Program Revenues: Capital Contributions and Grants	Net (Expense) Revenue and Changes in Net Position: 2025	Net (Expense) Revenue and Changes in Net Position: 2024
Primary Government:						
Governmental activities:						
General government	$ 5,363,026	-	-	-	(5,363,026)	(6,125,440)
Public safety	10,585,244	293,288	321,212	-	(9,970,744)	(9,098,303)
Community development	8,399,470	5,374,046	-	-	(3,025,424)	(1,419,820)
Community services	2,755,431	1,537,901	-	-	(1,217,530)	(1,118,807)
Public works	4,500,614	-	4,641,707	-	141,093	(1,072,298)
Interest	367,460	-	-	-	(367,460)	(382,504)
Total governmental activities	$ 31,971,245	7,205,235	4,962,919	-	(19,803,091)	(19,217,172)
		General revenues:				
		Taxes:				
		Property taxes, levied for general purpose			10,287,203	9,911,103
		Transient occupancy taxes			1,699,738	1,570,575
		Sales taxes			11,154,921	8,359,623
		Franchise taxes			1,813,044	1,875,533
		Other intergovernmental, unrestricted			81,664	64,044
		Use of money and property			1,621,512	1,207,332
		Other			378,730	747,990
		Total general revenues			27,036,812	23,736,200
		Change in net position			7,233,721	4,519,028
		Net position, beginning of year			143,262,388	138,743,360
		Net position, end of year			$ 150,496,109	143,262,388

See notes to financial statements

Major Governmental Funds

GENERAL FUND

The General Fund has been classified as a major fund and is used to account for revenues and expenditures that are not required to be accounted for in another fund.

SPECIAL REVENUE FUNDS

Special Revenue Funds are used to account for specific revenues that are legally restricted to expenditure for a particular purpose. The following fund have been classified as a major fund.

Aliso Viejo Center

This fund is used to account for the operations of the Aliso Viejo Center. The Aliso Viejo Center is a City owned facility that serves as an ideal venue to accommodate an array of functions, such as banquets, wedding celebrations, conferences, and corporate events.

Nonmajor Governmental Funds

Nonmajor Governmental Funds

These funds constitute all other governmental funds that do not meet the major 10% and 5% test of assets, liabilities, revenues, or expenditures for the governmental funds. These funds consist of other Special Revenue Funds, Capital Projects Funds and a Debt Service Fund for the City.

CITY OF ALISO VIEJO

BALANCE SHEET
GOVERNMENTAL FUNDS
June 30, 2025
(With Comparative Data for Prior Year)

	General Fund	Special Revenue: Aliso Viejo Center	Nonmajor Governmental Funds	Totals 2025	Totals 2024
Assets:					
Cash and investments	$ 43,626,689	2,114,237	9,924,664	55,665,590	48,296,183
Receivables:					
Accounts	574,817	40,287	25,089	640,193	659,525
Accrued interest	320,282	-	41,787	362,069	306,708
Leases	59,018	-	-	59,018	214,497
Due from other governments	2,060,915	-	929,058	2,989,973	2,228,506
Inventory	-	5,885	-	5,885	6,211
Prepaid costs	-	-	-	-	19,187
Due from other funds (note 5)	945,314	-	-	945,314	1,606,790
Total Assets	$ 47,587,035	2,160,409	10,920,598	60,668,042	53,337,607
Liabilities, Deferred Inflows of Resources and Fund Balances:					
Liabilities:					
Accounts payable	$ 1,965,292	438,586	334,910	2,738,788	3,282,647
Accrued liabilities	266,267	-	31,865	298,132	251,025
Deposits payable	841,576	964,163	-	1,805,739	2,175,904
Due to other funds (note 5)	-	757,660	175,939	933,599	1,599,490
Unearned revenue	8,850	-	209,026	217,876	147,842
Total Liabilities	3,081,985	2,160,409	751,740	5,994,134	7,456,908
Deferred Inflows of Resources:					
Leases	62,814	-	-	62,814	226,019
Unavailable revenue - grants	-	-	106,001	106,001	33,042
Total Deferred Inflows of Resources	62,814	-	106,001	168,815	259,061
Fund Balances:					
Non-Spendable:					
Prepaid costs and inventory	-	5,885	-	5,885	25,398
Restricted for:					
Debt service	-	-	298	298	546
Community development projects	-	-	1,922,107	1,922,107	1,890,321
Public works	-	-	7,853,201	7,853,201	5,574,557
Public safety	-	-	374,279	374,279	288,518
Assigned to:					
Contingencies	4,019,350	-	-	4,019,350	3,995,400
Self Insurance/benefit obligations	1,000,000	-	-	1,000,000	600,000
Asset replacement	14,318,164	-	-	14,318,164	13,953,004
Emergencies and unanticipated traffic projects	15,726,222	-	-	15,726,222	12,655,367
Unassigned	9,378,500	(5,885)	(87,028)	9,285,587	6,638,527
Total Fund Balances (Deficit)	44,442,236	-	10,062,857	54,505,093	45,621,638
Total Liabilities, Deferred Inflows of Resources and Fund Balances	$ 47,587,035	2,160,409	10,920,598	60,668,042	53,337,607

See notes to financial statements

CITY OF ALISO VIEJO

RECONCILIATION OF THE BALANCE SHEET OF GOVERNMENTAL FUNDS TO THE STATEMENT OF NET POSITION JUNE 30, 2025

Fund Balances of Governmental Funds	$	54,505,093
Amounts reported for governmental activities in the Statement of Net Position are different because:		
Capital assets used in governmental activities are not current financial resources and, therefore, are not reported in the funds:		
Capital assets		139,013,914
Accumulated depreciation/amortization		(28,616,876)
Deferred inflows and outflows of resources related to pension and OPEB have not been reported in the governmental funds:		
Deferred outflows - Pension related items		970,976
Deferred outflows - OPEB related items		47,512
Deferred inflows - Pension related		(23,591)
Deferred inflows - OPEB related		(499,779)
Compensated absences that have not been included in the governmental fund activity.		(362,935)
Governmental funds report all pension contributions as expenditures, however, in the Statement of Net Position, the excess of the plan's proportionate share of the total pension liability over the proportionate share of the plan's fiduciary net position is reported as a net pension liability.		(1,682,414)
Governmental funds report all OPEB contributions as expenditures, however, in the Statement of Net Position, any excesses of the OPEB plan's total pension liability over the OPEB plan's fiduciary net position is reported as a net OPEB liability.		(562,557)
Revenues reported as unavailable revenue in the governmental funds are recognized in the Statement of Activities. These are classified as intergovernmental revenues in the Government-Wide Financial Statements.		106,001
Long-term liabilities are not due and payable in the current period:		
Bonds payable		(11,035,000)
Unamortized premium		(806,719)
Subscription liability		(526,549)
Lease liability		(30,967)
Net Position of Governmental Activities	$	150,496,109

See notes to financial statements

CITY OF ALISO VIEJO

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	General Fund	Special Revenue: Aliso Viejo Center	Nonmajor Governmental Funds	Total 2025	Total 2024
Revenues:					
Taxes	$ 24,880,722	-	-	24,880,722	21,634,913
Licenses and permits	1,227,832	-	-	1,227,832	785,623
Intergovernmental	113,190	-	4,691,235	4,804,425	5,144,241
Charges for services	1,328,681	2,723,819	839,745	4,892,245	5,670,987
Use of money and property	2,307,938	-	349,421	2,657,359	1,960,825
Fines and forfeitures	293,288	-	-	293,288	296,430
Other	669,748	469,326	-	1,139,074	1,633,393
Total revenues	30,821,399	3,193,145	5,880,401	39,894,945	37,126,412
Expenditures:					
Current:					
General government	4,744,552	-	110,748	4,855,300	5,172,160
Community development	7,456,643	2,435,485	1,063,896	10,956,024	10,473,857
Public works	1,668,272	-	2,509,950	4,178,222	4,989,699
Public safety	10,462,135	-	125,409	10,587,544	10,126,196
Debt service:					
Principal payment	123,057	-	277,400	400,457	444,071
Interest and fiscal charges	2,643	-	397,086	399,729	414,773
Total expenditures	24,457,302	2,435,485	4,484,489	31,377,276	31,620,756
Excess (deficiency) of revenues over (under) expenditures	6,364,097	757,660	1,395,912	8,517,669	5,505,656
Other Financing Sources (Uses):					
Transfers in (note 5)	874,114	-	2,172,424	3,046,538	3,909,076
Transfers out (note 5)	(1,043,519)	(757,660)	(1,245,359)	(3,046,538)	(3,909,076)
Lease acquisition	-	-	-	-	39,681
SBITA acquisition	365,786	-	-	365,786	85,819
Total other financing sources (uses)	196,381	(757,660)	927,065	365,786	125,500
Net change in fund balances	6,560,478	-	2,322,977	8,883,455	5,631,156
Fund balances, beginning of year	37,881,758	-	7,739,880	45,621,638	39,990,482
Fund balances, end of year	$ 44,442,236	-	10,062,857	54,505,093	45,621,638

See notes to financial statements

CITY OF ALISO VIEJO

RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES FOR THE YEAR ENDED JUNE 30, 2025

Net Change in Fund Balances - Total Governmental Funds	$	8,883,455
Amounts reported for governmental activities in the Statement of Activities are different because:		
Governmental funds report capital outlays as expenditures. However, in the Government-Wide Statement of Activities, the costs of those assets are allocated over their estimated useful lives as depreciation expense.		
Capital outlay		816,222
Disposition of capital assets		(762,938)
Depreciation and amortization		(1,509,901)
Compensated absences expenses reported in the Statement of Activities do not require the use of current financial resources and therefore, are not reported as expenditures in governmental funds.		(105,500)
Pension obligation expenses, net of pension deferred related amounts, reported in the Statement of Activities do not require current financial resources and therefore, are not reported as expenditures in governmental funds.		(208,069)
OPEB obligation expenses, net of OPEB deferred related amounts, reported in the Statement of Activities do not require current financial resources and therefore, are not reported as expenditures in governmental funds.		(24,063)
Revenues reported as unavailable revenue in the governmental funds are recognized in the Statement of Activities. These are classified as program revenues in the Government-Wide Financial Statements.		72,959
The issuance of long-term debt provides current financial resources in the governmental funds, but issuance of debt increases the long-term liabilities in the Statement of Net Position, while the repayment of long-term liabilities consumes the current financial resources of governmental funds.		
Issuance of SBITAs		(365,786)
Bonds principal		260,000
Unamortized premium		32,269
Leases principal		7,408
Subscription principal		137,665
Change in Net Position of Governmental Activities	$	7,233,721

See notes to financial statements

CITY OF ALISO VIEJO

STATEMENT OF FIDUCIARY NET POSITION
FIDUCIARY FUNDS
JUNE 30, 2025
(With Comparative Data for Prior Year)

	Custodial Fund	
	2025	2024
Assets:		
Cash and investments with fiscal agents (note 2)	$ 2,831,304	3,236,274
Due from other governments	27,127	21,216
Total assets	2,858,431	3,257,490
Liabilities:		
Accounts payable	2,311	2,395
Due to other funds (note 5)	11,715	7,300
Total liabilities	14,026	9,695
Net position:		
Restricted for organizations and other governments	2,844,405	3,247,795
Total net position	$ 2,844,405	3,247,795

See notes to financial statements

CITY OF ALISO VIEJO

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FIDUCIARY FUNDS
JUNE 30, 2025
(With Comparative Data for Prior Year)

	Custodial Fund	
	2025	2024
Additions:		
Assessments	$ 2,082,767	2,248,518
Interest income	69,482	84,952
Total additions	2,152,249	2,333,470
Deductions:		
Payments to bondholders:		
Principal	1,395,000	935,000
Interest and fiscal charges	1,160,639	2,818,111
Total deductions	2,555,639	3,753,111
Net increase (decrease) in fiduciary net position	(403,390)	(1,419,641)
Net position, beginning of year	3,247,795	4,667,436
Net position, end of year	$ 2,844,405	3,247,795

See notes to financial statements

Note 1: Summary of Significant Accounting Policies

The accounting policies of the City of Aliso Viejo conform to generally accepted accounting principles as applicable to governments. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles.

a. Reporting Entity

The City of Aliso Viejo (the City) was incorporated July 1, 2001, under the general laws of the State of California. The City operates under the Council-Manager form of government.

The City provides the following services as authorized by its general laws: public safety, public works, community development and general administrative services.

Generally accepted accounting principles require that these financial statements present the City and its component units, entities for which the City is considered to be financially accountable. As of the end of the reporting period the City had one component unit as defined by the GASB.

Aliso Viejo Public Facilities Corporation

The Aliso Viejo Public Facilities Corporation (Corporation) was created on July 19, 2006, for the purpose of providing for the financing of the acquisition and improvement of a building to be used as City Hall through the issuance of Certificates of Participation (COP) by the Corporation and the lease-back of the building from the Corporation to the City. Members of the City Council and management of the City act as the Corporation's governing board and exerts significant influence over its operations. Separate financial statements are not prepared for this Corporation.

b. Measurement Focus, Basis of Accounting, and Basis of Presentation

The basic financial statements of the City are composed of the following:

- Government-wide financial statements
- Fund financial statements
- Notes to the basic financial statements

Government-Wide Financial Statements: Government-wide financial statements display information about the reporting government as a whole, except for its fiduciary activities. These statements include a single column for the governmental activities of the primary government. The City of Aliso Viejo has no business-type activities. Eliminations have been made in the Statement of Activities so that certain allocated expenses are recorded only once (by the function to which they were allocated). However, general government expenses have not been allocated as indirect expenses to the various functions of the City.

Note 1: Summary of Significant Accounting Policies (Continued)

Government-wide financial statements are presented using the economic resources measurement focus and the accrual basis of accounting. Under the economic resources measurement focus, all (both current and long-term) economic resources and obligations of the reporting government are reported in the government-wide financial statements. Basis of accounting refers to when revenues and expenses are recognized in the accounts and reported in the financial statements. Under the accrual basis of accounting, revenues, expenses, gains, losses, assets, and liabilities resulting from exchange and exchange-like transactions are recognized when the exchange takes place.

Program revenues include charges for services, special assessments, and program payments. Program revenues are netted with program expenses in the Statement of Activities, to present the net cost of each program.

Amounts paid to acquire capital assets are capitalized as assets in the government-wide financial statements, rather than reported as an expenditure. Proceeds of long-term debt are recorded as a liability in the government-wide financial statements, rather than as another financing source. Amounts paid to reduce long-term indebtedness of the reporting government are reported as a reduction of the related liability, rather than as an expenditure.

Fund Financial Statements: The underlying accounting system of the City is organized and operated on the basis of separate funds, each of which is considered to be a separate accounting entity. The operations of each fund are accounted for with a separate set of self-balancing accounts that comprise its assets, liabilities, fund balances, revenues, and expenditures or expenses, as appropriate. Governmental resources are allocated to and accounted for in individual funds based upon the purposes for which they are to be spent and the means by which spending activities are controlled.

Fund financial statements for the primary government's governmental, and fiduciary funds are presented after the government-wide financial statements. These statements display information about major funds individually and other funds in the aggregate for governmental funds. Fiduciary statements include financial information for fiduciary funds. Fiduciary funds of the City primarily represent assets held by the City in a custodial capacity for other individuals or organizations. Custodial funds use the economic resources measurement focus and the accrual basis of accounting.

Governmental Funds: In the fund financial statements, governmental funds are presented using the modified-accrual basis of accounting. Their revenues are recognized when they become measurable and available as net current assets. Measurable means that the amounts can be estimated, or otherwise determined. Available means that the amounts were collected during the reporting period or soon enough thereafter to be available to finance the expenditures accrued for the reporting period. The City uses an availability period of 60 days.

Sales taxes, property taxes, franchise taxes, gas taxes, motor vehicle license fee, transient occupancy taxes, grants, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period to the extent normally collected within the availability period. Other

Note 1: Summary of Significant Accounting Policies (Continued)

revenue items are considered to be measurable and available where cash is received by the government.

Revenue recognition is subject to the measurable and availability criteria for the governmental funds in the fund financial statements. Exchange transactions are recognized as revenues in the period in which they are earned (i.e., the related goods or services are provided). Locally imposed derived tax revenues are recognized as revenues in the period in which the underlying exchange transaction upon which they are based takes place. Imposed non-exchange transactions are recognized as revenues in the period for which they were imposed. If the period of use is not specified, they are recognized as revenues when an enforceable legal claim to the revenues arises or when they are received, whichever occurs first. Government-mandated and voluntary non-exchange transactions are recognized as revenues when all applicable eligibility requirements have been met. Revenues, expenses, gains, losses, assets, and liabilities resulting from non-exchange transactions are recognized in accordance with the requirements of GASB Statement No. 33 which requires that local governments defer grant revenue that is not received within 60 days after the fiscal year ends to meet the "available" criteria of revenue recognition.

In the fund financial statements, governmental funds are presented using the current financial resources measurement focus. This means that only current assets and current liabilities are generally included on their balance sheets. The reported fund balance (net current assets) is considered to be a measure of "available spendable resources." Governmental fund operating statements present increases (revenues and other financing sources) and decreases (expenditures and other financing uses) in net current assets. Accordingly, they are said to present a summary of sources and uses of "available spendable resources" during a period.

Non-current portions of long-term receivables due to governmental funds are reported on their balance sheets in spite of their spending measurement focus. Special reporting treatments are used to indicate, however, that they should not be considered "available spendable resources," since they do not represent net current assets.

Recognition of governmental fund type revenue represented by non-current receivables are deferred until they become current receivables. Non-current portions of other long-term receivables are classified as non spendable fund balance.

Because of their spending measurement focus, expenditure recognition for governmental fund types excludes amounts represented by non-current liabilities. Since they do not affect net current assets, such long-term amounts are not recognized as governmental fund type expenditures or fund liabilities.

Amounts expended to acquire capital assets are recorded as expenditures in the year that resources were expended, rather than as fund assets. The proceeds of long-term debt are recorded as another financing source rather than as a fund liability. Amounts paid to reduce long-term indebtedness are reported as fund expenditures.

When both, restricted and unrestricted resources, are combined in a fund, expenses are considered to be paid first from restricted resources, and then from unrestricted resources.

Note 1: Summary of Significant Accounting Policies (Continued)

c. Fund Classifications

The City reports the following major governmental funds:

General Fund: The General Fund is the general operating fund of the City. It is used to account for all financial resources except those required to be accounted for in another fund.

Aliso Viejo Center Special Revenue Fund: This fund is used to account for the operations of the Aliso Viejo Center. The Aliso Viejo Center is a City owned facility that serves as an ideal venue to accommodate an array of functions, such as banquets, wedding celebrations, conferences and corporate events. Revenues are generated from events held at the facility.

Additionally, the government reports the following fund types:

Special Revenue Funds: These funds are used to account for revenues which are legally restricted to expenditures for special purposes.

Capital Projects Funds: These funds are used to account for the financial resources used for the acquisition of capital assets and are funded by the General Fund, Gas Tax Fund, Measure M Fund, and the Federal Grants Fund.

Debt Service Funds: These funds is used to account for the City's debt payments as well as any additional debt amounts deemed to be advisable and necessary for any public or municipal purposes.

Custodial Funds: These funds are used to account for special assessments received for which the City acts as an agent for all Community Facilities District debt activity.

d. Cash and Investments

Investments are reported in the accompanying statement of net position at fair value. Changes in fair value that occur during a fiscal year are recognized as investment income reported for that fiscal year. Investment income includes interest earnings and changes in fair value. The City pools cash and investments of all funds. Each fund's share in this pool is displayed in the accompanying financial statements as cash and investments. Investment income earned by the pooled investments is allocated to the various funds based on each fund's average cash and investment balance, except for investment income associated with funds not legally required to receive pooled investment income which has been assigned to and recorded as revenue of the General Fund, as provided by California Government Code Section 53647.

The following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used:

Level 1: inputs are unadjusted quoted prices in active markets for identical assets; level 2: quoted prices for similar assets or liabilities in active markets; level 3: inputs to the valuation methodology are unobservable and significant to the fair value measurement.

Note 1: Summary of Significant Accounting Policies (Continued)

e. Prepaids

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both, the government-wide and fund financial statements. Prepaid items are reported in the governmental funds under the consumption method and are offset by a reservation of fund balance to indicate that they are not spendable for appropriation and are not expendable financial resources.

f. Leases

The City is a lessor and lessee for leases as detailed in notes 4 and 7. The City recognizes a lease receivable, a deferred inflow of resources, and a lease payable in the financial statements.

At the commencement of the lease, the City initially measures the lease receivable at the present value of payments expected to be received and paid during the lease term. Subsequently, the lease receivable is reduced by the principal portion of lease payments received and the lease payable is reduced by the principal portion of lease payments made. The deferred inflow of resources is initially measured as the initial amount of the lease receivable, adjusted for lease payments received at or before the lease commencement date. Subsequently, the deferred inflows of resources is recognized as revenue over the life of the lease term.

Key estimates and judgments include how the City determines the discount rate it uses to discount the expected lease receipts and payments to present value, lease term and lease receipts.

- The City uses the estimated cost of capital rate as the discount rate for leases.
- The lease term includes the non-cancellable period of the lease.

The City monitors changes in circumstances that would require a remeasurement of its leases and will remeasure the lease receivable and deferred inflows of resources if certain changes occur that are expected to significantly affect the amount of the lease receivable.

g. Subscription-Based Information (IT) Arrangements

The City is a participant in subscription-based IT arrangements as detailed in note 7. The City recognizes a subscription-based IT payable and right to use IT assets in the financial statements. At the commencement of the arrangement, the City initially measures the payable at the present value of payments expected to be paid during the arrangement term. Subsequently, the payable is reduced by the principal portion of payments made. The right to use assets are initially measured at the initial amount of the subscription-based IT payable. Subsequently, the right to use assets are amortized over the life of the arrangement term.

h. Capital Assets

Capital assets (including infrastructure) are recorded at cost where historical records are available and at an estimated original cost where no historical records exist. Donated capital assets, donated works of art and similar items, and capital assets received in a

Note 1: Summary of Significant Accounting Policies (Continued)

service concession arrangement are reported at acquisition value rather than fair value. Generally, capital asset purchases in excess of $5,000 are capitalized if they have an expected useful life of three years or more.

Capital assets include public domain (infrastructure) general capital assets consisting of certain improvements including roads, streets, sidewalks, medians, and storm drains. The City has elected to include infrastructure capital assets in their entirety (e.g., prior to 1980) in compliance with requirements of GASB Statement No. 34.

Capital assets used in operations are depreciated over their estimated useful lives, except for streets, of which the City reports based on using the modified approach. The City uses the straight-line method in the government-wide financial statements for depreciating storm drains, park equipment, buildings, equipment and furniture, and leasehold improvements. Depreciation is charged as an expense against operations and accumulated depreciation is reported on the respective statement of net position. The range of lives used for depreciation purposes for each capital asset class are as follows:

Items	Useful Life
Buildings	100 years
Improvements	3-50 years
Equipment and furniture	5 years
Right-to-use assets	Life of lease
Infrastructure:	
Sidewalks	20-50 years
Curb and gutters	20-50 years
Medians	20-50 years
Traffic signals	15 years
Street signs	15 years
Storm drains	20-50 years
Park equipment	10-50 years

The City of Aliso Viejo met all the criteria required by GASB Statement No. 34 to report their streets and roads network using the modified approach, which allows those infrastructure assets to be non-depreciable. Hence, all expenditures made for the streets and roads asset network (except for additions and improvements) are expensed in the period incurred. Additions or improvements to the streets and roads network assets that increase the capacity or efficiency of those assets (rather than preserve the useful life) are capitalized. The City elected to set their minimum acceptable level of condition at 80 for all streets and roads network systems based on their pavement management system scale of 1 to 100. The City plans to test/assess the condition level at least every two years. See the accompanying Required Supplementary Information section for additional information.

i. Deferred Outflows/Inflows of Resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represent a consumption of net assets that applies to

Note 1: Summary of Significant Accounting Policies (Continued)

future periods and so will not be recognized as an outflow of resources (expense/ expenditure) until then. The City has deferred outflows of resources related to pension and OPEB items.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represent an acquisition of net assets that applies to future periods and so will not be recognized as an inflow of resources (revenue) until that time. The City of Aliso Viejo has three types of items. Unavailable revenue is reported only in the governmental funds balance sheet. The governmental funds report unavailable revenues from various sources such as, grant revenue, taxes, and other special revenue. These amounts are deferred and recognized as an inflow of resources in the period that the amounts become available. The second item is deferred pension and OPEB related items. The third item is deferred inflows related to leases.

j. Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, pension expense, information about the fiduciary net position of the Plan, and additions to/deductions from the Plan's fiduciary net position have been determined on the same basis. For this purpose, benefit payments (including refunds of employee contributions) are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value.

GASB 68 requires that the reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used.

Valuation Date (VD) June 30, 2023
Measurement Date (MD) June 30, 2024
Measurement Period (MP) July 1, 2023, to June 30, 2024

k. Other Post Employment Benefits (OPEB)

For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense and information about the plan (OPEB Plan), have been determined by an independent actuary. For this purpose, benefit payments are recognized when currently due and payable in accordance with the benefit terms.

Generally accepted accounting principles require that the reported results must pertain to liability information within certain defined timeframes. For this report, the following timeframes are used:

Valuation Date (VD) June 30, 2023
Measurement Date (MD) June 30, 2024
Measurement Period (MP) July 1, 2023 to June 30, 2024

Note 1: Summary of Significant Accounting Policies (Continued)

l. Compensated Absences

In accordance with generally accepted accounting principles, an employee benefits payable liability is recorded for unused vacation and similar compensatory leave balances. The employee's entitlements to these balances are attributable to services already rendered and it is probable that virtually all of these balances will be liquidated by either paid time off or payments upon termination or retirement.

m. Property Taxes

Under California law, property taxes are assessed and collected by the counties up to 1% of assessed value, plus other increases approved by the voters. The property taxes go into a pool and are then allocated to the cities based on complex formulas. Accordingly, the City recognizes as revenue only those taxes which are received within 60 days after year end.

The property tax calendar is as follows:

Lien Date:	January 1
Levy Date:	July 1
Due Date:	First Installment - November 1
	Second Installment - February 1
Delinquent Date:	First Installment - December 10
	Second Installment - April 10

n. Use of Estimates

The preparation of basic financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenditures during the reporting period. Actual results could differ from those estimates.

o. Net Position Flow Assumption

Sometimes the City will fund outlays for a particular purpose from both, restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted – net position and unrestricted – net position in the government-wide, a flow assumption must be made about the order in which the resources are considered to be applied. It is the City's policy to consider restricted – net position to have been depleted before unrestricted – net position is applied.

p. Fund Balance Flow Assumption

Sometimes the City will fund outlays for a particular purpose from both, restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is

Note 1: Summary of Significant Accounting Policies (Continued)

the government's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

q. Fund Balance and Net Position

In the fund financial statements, government funds report the following fund balance classification:

Nonspendable include amounts that cannot be spent because they are either (a) not in spendable form or (b) legally or contractually required to be maintained intact.

Restricted include amounts that are constrained on the use of resources by either (a) external creditors, grantors, contributors, or laws of regulations of other governments or (b) by law through constitutional provisions or enabling legislation.

Committed include amounts that can only be used for specific purposes pursuant to constraints imposed by formal action of the government's highest authority, City Council. The formal action that is required to be taken to establish, modify, or rescind a fund balance commitment is a resolution.

Assigned include amounts that are constrained by the government's intent to be used for specific purposes but are neither restricted nor committed. The City Manager and/or Financial Services Director is authorized to assign amounts to a specific purpose, which was established by the governing through a resolution.

Unassigned include the residual amounts that have not been restricted, committed, or assigned to specific purposes.

An individual governmental fund could include nonspendable resources and amounts that are restricted or unrestricted (committed, assigned, or unassigned) or any combination of those classifications. Restricted or unrestricted amounts are to be considered spent when an expenditure is incurred for purposes for which both restricted and unrestricted fund balance is available and committed, assigned, then unassigned amounts are considered to have been spent when an expenditure is incurred for purposes for which amounts in any of those unrestricted fund balance classifications can be used.

The general fund is the only fund that reports a positive unassigned fund balance amount. In other governmental funds it is not appropriate to report a positive unassigned fund balance amount. However, in governmental funds other than the general fund, if expenditures incurred for specific purposes exceed the amounts that are restricted, committed, or assigned to those purposes, it may be necessary to report a negative unassigned fund balance in that fund.

Note 1: Summary of Significant Accounting Policies (Continued)

In the government-wide financial statements and fiduciary fund financial statements, net position is reported in three categories: net investment in capital assets, restricted net position and unrestricted. The restricted portion of net position represents net position restricted by parties outside of the City (such as creditors, grantors, contributors, and laws and regulations of over governments) and includes unspent proceeds of bonds issued to acquire or construct capital assets. The City's other restricted net position is temporarily restricted (ultimately expendable assets). All other net position is considered unrestricted.

r. Prior Year Data

The information included in the accompanying financial statements for the prior year has been presented for comparison purposes only and does not represent a complete presentation in accordance with generally accepted accounting principles. Certain minor reclassifications of prior year data have been made in order to enhance their comparability with current year figures.

Note 2: Cash and Investments

Cash and investments as of June 30, 2025, are classified in the accompanying financial statements as follows:

Statement of Net Position:	
Cash and investments	$ 55,665,590
Statement of Fiduciary Net Position:	
Cash and investments with fiscal agent	2,831,304
Total cash and investments	$ 58,496,894

Cash and investments as of June 30, 2025, consists of the following:

Cash on hand	$ 1,496
Deposits with financial institutions	6,555,036
Investments	51,940,362
Total cash and investments	$ 58,496,894

Investments Authorized by the California Government Code and the City's Investment Policy

The following table identifies the investment types that are authorized for the City by the California Government Code and the City's investment policy. The table also identifies certain provisions of the California Government Code (or the City's investment policy, if more restrictive) that address interest rate risk, credit risk, and concentration of credit risk. This table does not address investments of debt proceeds held by bond trustee that are governed by the provisions of debt agreements of the City, rather than the general provisions of the California Government Code or the City's investment policy. The City Treasurer may waive the collateral requirement for deposits that are fully insured up to $250,000 by the FDIC.

Note 2: Cash and Investments (Continued)

Investment Types Authorized by State Law	Authorized by Investment Policy	Maximum Maturity	Maximum Percentage of Portfolio	Maximum Investment in One Issuer*
U.S. Treasury Obligations	Yes	5 years	100%	None
U.S. Agency Securities	Yes	5 years	60%	35% per agency
Supernational Securities	Yes	5 years	20%	10% per issuer
Banker's Acceptances	Yes	180 days	20%	5% per issuer
Commercial Paper	Yes	270 days	20%	5%
Certificates of Deposit	Yes	5 years	30%	5%
Negotiable Certificates of Deposit	Yes	5 years	30%	250,000
Repurchase Agreements	Yes	92 days	20%	20%
Medium-Term Notes	Yes	5 years	30%	5%
Money Market Mutual Funds	Yes	None	20%	20% per fund
Local Agency Investment Fund	Yes	None	100%	75,000,000

* Based on state law requirements or investment policy requirements, whichever is more restrictive.

Investments Authorized by Debt Agreements

Investment of debt proceeds held by bond trustee are governed by provisions of the debt agreements, rather than the general provisions of the California Government Code or the City's investment policy. The table below identifies the investment types that are authorized for investments held by bond trustee. The table also identifies certain provisions of these debt agreements that address interest rate risk, credit risk, and concentration of credit risk.

Investment Types Authority by State Law	Maximum Maturity	Maximum Percentage of Portfolio	Maximum Investment in One Issuer
U.S. Treasury Obligations	5 years	None	None
U.S. Agency Securities	5 years	None	None
Banker's Acceptances	180 days	None	None
Commercial Paper	270 days	None	None
Certificates of Deposit	5 years	None	None
Money Market Funds	N/A	None	None
Investment Agreements	None	None	None
Defeasance Obligations	None	None	None
Municipal Obligations	None	None	None
Local Agency Investment Fund	None	None	None

Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value is to changes in market interest rates. Information about the sensitivity of the fair values of the City's investments to market interest rate fluctuations is provided by the following table that shows the distribution of the City's investments by maturity:

Note 2: Cash and Investments (Continued)

Investment Type	Total	Remaining Maturity: 12 Months or Less	13 to 36 Months	37 to 60 Months
Negotiable Certificates of Deposit	$ 1,923,240	240,502	1,437,738	245,000
Federal Agency Securities	7,981,290	1,964,865	5,321,880	694,545
U.S. Treasury Securities	25,897,441	10,588,934	11,265,694	4,042,813
Medium-Term Corporate Notes	4,330,497	-	2,806,252	1,524,245
State Investment Pool (LAIF)	9,780,847	9,780,847	-	-
U.S. Treasury Money Market	2,027,047	2,027,047	-	-
Total	$51,940,362	24,602,195	20,831,564	6,506,603

Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. Presented on the next page is the minimum rating required by (where applicable) the California Government Code, the City's investment policy, or debt agreements and the actual rating as of year-end for each investment type:

Investment Type	Total	Minimum Legal Rating	Ratings as of Year End: AAA	AA	A	Not Rated
Negotiable Certificates of Deposit	$ 1,923,240	N/A	-	-	-	1,923,240
Federal Agency Securities	7,981,290	N/A	-	7,981,290	-	-
U.S. Treasury Securities*	25,897,441	N/A	-	-	-	-
Medium-Term Corporate Notes	4,330,497	A	-	2,343,497	1,987,000	-
State Investment Pool (LAIF)	9,780,847	N/A	-	-	-	9,780,847
U.S. Treasury Money Market	2,027,047	AAA	2,027,047	-	-	-
Total	$51,940,362		2,027,047	10,324,787	1,987,000	11,704,087

* Exempt from rating

Concentration of Credit Risk

The investment policy of the City contains no limitations on the amount that can be invested in any one issuer beyond that stipulated by the California Government Code. Investments in any one issuer (other than U.S. Treasury securities, mutual funds and external investment pools) that represent 5% or more of the total City's investments are as follows:

Issuer	Investment Type	Reported amount	Percentage of portfolio
Federal Home Loan Bank	Federal Agency Securities	$ 3,173,390	6%

Note 2: Cash and Investments (Continued)

Custodial Credit Risk

Custodial credit risk for deposits is the risk that in the event of the failure of a depository financial institution, a government will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. The custodial credit risk for investments is the risk that in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The California Government Code and the City's investment policy do not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits or investments, other than the following provision for deposits: The California Government Code requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by a depository regulated under state law (unless so waived by the governmental unit). The fair value of the pledged securities in the collateral pool must equal at least 110% of the total amount deposited by the public agencies. California law also allows financial institutions to secure City deposits by pledging first trust deed mortgage notes having a value of 150% of the secured public deposits.

Investment in State Investment Pool

The City is a voluntary participant in the Local Agency Investment Fund (LAIF) that is regulated by the California Government Code 16429 under the oversight of the Treasurer of the State of California. The fair value of the City's investment in this pool is reported in the accompanying financial statements at an amount based upon the City's pro-rata share of the fair value provided by LAIF for the entire LAIF portfolio (in relation to the amortized cost of that portfolio). The balance available for withdrawal is based on the accounting records maintained by LAIF, which are recorded on an amortized cost basis. Currently, LAIF does not have an investment rating.

Fair Value Measurements

The City categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

Note 2: Cash and Investments (Continued)

The City has the following recurring fair value measurements as of June 30, 2025:

		Fair Value Measurement Using		
	Total	Level 1	Level 2	Level 3
Negotiable Certificates of Deposit	$ 1,923,240	-	1,923,240	-
Federal Agency Securities	7,981,290	-	7,981,290	-
U.S. Treasury Securities	25,897,441	-	25,897,441	-
Medium-Term Corporate Notes	4,330,497	-	4,330,497	-
Total investments by fair value level	40,132,468	-	40,132,468	-
Investments not subject to fair value:				
State Investment Pool	9,780,847			
U.S. Treasury Money Market	2,027,047			
Total	$51,940,362			

Note 3: Loans Receivable

Aliso Senior Apartments

The City executed a promissory note with a developer to assist in the development of 200 affordable rental units. The entire unpaid principal amount and accrued interest is due 55 years from the date of completion. Prepayment of the note will have no effect on the application of the agreement. As of June 30, 2025, the total outstanding principal balance was $6,670,000 and interest receivable was $948,159 . An allowance of $7,618,159 has been recorded to reflect the amount of the note and interest as not expected to be collected.

Note 4: Lease Receivable

City Hall Space - Suite 280

On August 1, 2021, the City entered into a 23-month lease as Lessor for the use of City Hall Space - Suite 280. On June 22, 2023, the lease was extended for an additional 24-months. During the fiscal year, the City recognized lease revenue of $105,074. The City extended the lease for an additional 36-months on July 1, 2025 which is reported as a subsequent event at June 30, 2025.

City Hall Space - Suite 201

On May 1, 2024, Aliso Viejo, CA entered into a 26-month lease as Lessor for the use of Suite 201. An initial lease receivable was recorded in the amount of $125,951. The lessee is required to make monthly fixed payments of $5,000. The lease has an interest rate of 3.0590%. The building's estimated useful life was 0 months as of the contract commencement. As of June 30, 2025, the City has total outstanding lease receivables of $59,018 and related deferred inflows of resources of $62,814. The City recognized lease revenue of $58,131 during the fiscal year. The lessee has 1 extension option for 24 months.

Note 5: Interfund Receivables, Payables and Transfers

Due To/From Other Funds

Interfund receivables and payables as of June 30, 2025, consisted of the following:

	Due To Other Funds			
Due From Other Funds	Aliso Viejo Center	Other Governmental Funds	Custodial Fund	Total
General Fund	$ 757,660	175,939	11,715	945,314

The amount due from the General Fund to other governmental funds was to cover negative cash and are expected to be repaid within one year. The amount due to the General Fund from the Aliso Viejo Center was to cover the operational profits for the fiscal year.

Transfers In and Out

Interfund transfers for the year ended June 30, 2025, consisted of the following:

	Transfers Out			
Transfers In	General Fund	Aliso Viejo Center	Other Governmental Funds	Total
General Fund	$ -	757,660	116,454	874,114
Other Governmental Funds	1,043,519	-	1,128,905	2,172,424
Total	$ 1,043,519	757,660	1,245,359	3,046,538

Transfers into the General Fund included funds from net income from the Aliso Viejo Center, and reimbursement for staff hours from various grants such as, CDBG, Senior Mobility, SB1383, LEAP, and the Permanent Local Housing Allocation. Transfers out of the General Fund to Other Governmental Funds includes capital improvement funding at City facilities, stormwater maintenance, debt service for the 2019 COPS, and funds to the Aquatic Center to cover the center's operating gap. Other Governmental Funds transfers in and out are for street and City Hall capital improvement projects. Street related funding sources include SB1 and Measure M for street rehabilitation projects along Aliso Creek Road and Aliso Viejo Parkway, as well as CDBG funding for Americans with Disability Act (ADA) sidewalk improvements. Other Grants transfers to other governmental funds include a CalTrans street rehabilitation grant and City Hall improvements with federal funds.

Note 6: Capital Assets

Capital asset activity for the year ended June 30, 2025, was as follows:

	Balance July 1, 2024	Additions	Deletions	Balance June 30, 2025
Capital assets, not being depreciated:				
Land	$ 14,315,978	-	-	14,315,978
Infrastructure - streets	53,871,430	-	-	53,871,430
Total capital assets, not being depreciated	68,187,408	-	-	68,187,408
Capital assets, being depreciated:				
Buildings	41,645,017	-	(142,979)	41,502,038
Improvements	1,463,415	242,666	-	1,706,081
Equipment	1,179,312	9,000	(47,087)	1,141,225
Furniture	343,880	27,389	-	371,269
Infrastructure - other*	26,136,674	-	(1,177,159)	24,959,515
Right-to-use lease assets - equipment	39,681	-	-	39,681
Right-to-use subscription assets	764,275	368,486	(26,064)	1,106,697
Total capital assets, being depreciated	71,572,254	647,541	(1,393,289)	70,826,506
Accumulated depreciation/amortization:				
Buildings	(5,916,083)	(561,336)	19,450	(6,457,969)
Improvements	(564,410)	(138,903)	-	(703,313)
Equipment	(1,005,854)	(81,476)	47,087	(1,040,243)
Furniture	(246,398)	(63,133)	-	(309,531)
Infrastructure - other*	(19,935,567)	(455,798)	706,431	(19,684,934)
Right-to-use lease assets - equipment	(661)	(7,936)	-	(8,597)
Right-to-use subscription assets	(237,034)	(201,319)	26,064	(412,289)
Total accumulated depreciation/amortization	(27,906,007)	(1,509,901)	799,032	(28,616,876)
Total capital assets, being depreciated, net	43,666,247	(862,360)	(594,257)	42,209,630
Capital assets, net	$111,853,655	(862,360)	(594,257)	110,397,038

*Other infrastructure consisted of sidewalks, curbs and gutters, medians, traffic signals, street signs, storm drains, and park equipment.

Depreciation expense by function for the fiscal year ending June 30, 2025, is as follows:

General government	$ 869,729
Community development	133,688
Public safety	6,700
Public works	499,784
Total	$ 1,509,901

Note 7: Non-current Liabilities

Compensated Absences

Changes in compensated absences for the fiscal year ended June 30, 2025, were as follows:

	Balance July 1, 2024	Additions		Deletions	Balance June 30, 2025	Amount Due Within One Year
Compensated absences	$ 257,435	105,500	*	-	362,935	184,214

* The change in compensated absences liability is presented as a net change under Governmental Accounting Standards Board (GASB) Statement No. 101.

Changes in non-current liabilities for the fiscal year ended June 30, 2025, were as follows:

	Balance July 1, 2024	Additions	Deletions	Balance June 30, 2025	Amount Due Within One Year
Bonds payable	$ 11,295,000	-	(260,000)	11,035,000	270,000
Unamortized premium	838,988	-	(32,269)	806,719	32,269
Lease liability	38,375	-	(7,408)	30,967	7,606
Subscription liability	298,428	365,786	(137,665)	526,549	137,579
Total	$ 12,470,791	365,786	(437,342)	12,399,235	447,454

Bonds Payable – Direct Placement

On July 31, 2019, the City issued the 2019 Certificates of Participation (COP) in the amount of $12,250,000 in order to finance a portion of the construction of improvements to the Aliso Viejo Ranch and pay delivery costs incurred in connection with the execution, delivery and sale of the Certificates. The 2019 COP mature annually on November 1 through 2039 and bear interest ranging from 2.0% to 4.0%. In the event of default, the City waives all rights to any rentals received by the trustee through re-letting of the lease agreement. The City agrees to pay any and all costs, loss, or damage, howsoever occurring, as a result of any re-entry or re-letting. The annual debt service requirements for the 2019 COPs outstanding at June 30, 2025 are as follows:

Year Ending June 30,	Principal	Interest	Total
2026	$ 270,000	385,350	655,350
2027	280,000	374,550	654,550
2028	295,000	363,350	658,350
2029	305,000	351,550	656,550
2030	320,000	339,350	659,350
2031 - 2035	1,785,000	1,495,350	3,280,350
2036 - 2040	2,175,000	1,108,550	3,283,550
2041 - 2045	2,600,000	689,250	3,289,250
2046 - 2050	3,005,000	275,700	3,280,700
Total	$ 11,035,000	5,383,000	16,418,000

Note 7: Non-current Liabilities (Continued)

Lease Liability

On May 7, 2024, the City entered into a 60-month lease as Lessee for the use of Ricoh-Copiers 2024. An initial lease liability was recorded in the amount of $39,681. As of June 30, 2025, the value of the lease liability is $30,967. The City is required to make monthly fixed payments of $694. The lease has a discount rate of 2.6360%. The Equipment estimated useful life was sixty months as of the contract commencement. The value of the right to use asset as of June 30, 2025 is $39,681 with accumulated amortization of $7,936.

Estimated future debt service requirements are as follows:

Year Ending June 30,	Principal	Interest	Total
2026	$ 7,606	725	8,331
2027	7,808	522	8,330
2028	8,017	314	8,331
2029	7,536	100	7,636
Total	$ 30,967	1,661	32,628

Subscription-Based Information Technology Arrangements

In FY 2025, the City entered into 3 subscription-based IT arrangements for various software applications. As of June 30, 2025, the value of the existing lease liability is $526,549. The value of the right to use asset as of June 30, 2025 is $1,106,697 with accumulated amortization of $412,289.

Estimated future debt service requirements are as follows:

Year Ending June 30,	Principal	Interest	Total
2026	$ 137,579	3,358	140,937
2027	135,518	10,631	146,149
2028	77,975	6,940	84,915
2029	84,355	4,805	89,160
2030	91,122	2,495	93,617
Total	$ 526,549	28,229	554,778

Note 8: Debt Without Government Commitment Community Facilities District No. 2005-01

In December 2023, the City issued $23,430,000 in Special Refunding Bonds for Community Facilities District No. 2005-01 (Glenwood at Aliso Viejo). Interest payments commenced on March 1, 2024, and are paid semiannually thereafter on September 1 and March 1 of each year. Principal payments commence on September 1, 2024, and are paid annually in amounts ranging from $1,395,000 to $2,440,000 until September 1, 2038. The bonds were issued to refinance the outstanding 2007 Special Tax Bonds and the 2014 Special Tax Refunding Bonds and cause early redemption thereof on December 5, 2023. The principal outstanding at June 30, 2025 is $22,035,000.

Note 9: Pension Plan

A. General Information about the Pension Plan

Plan Description

All qualified permanent and probationary employees are eligible to participate in the Public Agency Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Plan or PERF C) administered by the California Public Employees' Retirement System (CalPERS.) The Plan consists of a miscellaneous pool and a safety pool (also referred to as "risk pools"), which are comprised of individual employer miscellaneous and safety rate plans, respectively. Plan assets may be used to pay benefits for any employer rate plan of the safety and miscellaneous pools. Accordingly, rate plans within the safety or miscellaneous pools are not separate plans under generally accepted accounting principles. Individual employers may sponsor more than one rate plan in the miscellaneous or safety risk pools. The City participates in two rate plans (both miscellaneous). Benefit provisions under the Plan are established by State statute and City resolution. CalPERS issues publicly available reports that include a full description of the pension plan regarding benefit provisions, assumptions and membership information that can be found on the CalPERS' website, at www.calpers.ca.gov.

Benefits Provided

CalPERS provides service retirement and disability benefits, annual cost of living adjustments, and death benefits to plan members, who must be public employees and beneficiaries. Benefits are based on years of credited service, equal to one year of full-time employment. Members with five years of total service are eligible to retire at age 50 with statutorily reduced benefits. All members are eligible for non-duty disability benefits after 5 years of service. The death benefit is one of the following: the Basic Death Benefit, the 1957 Survivor Benefit, or the Optional Settlement 2W Death Benefit. The cost-of-living adjustments for each plan are applied as specified by the Public Employees' Retirement Law.

The Plan operates under the provisions of the California Public Employees' Retirement Law (PERL), the California Public Employees' Pension Reform Act of 2013 (PEPRA), and the regulations, procedures and policies adopted by the CalPERS Board of Administration. The Plan's authority to establish and amend the benefit terms are set by the PERL and PEPRA and may be amended by the California state legislature and in some cases require approval by the CalPERS Board.

The Plan's provisions and benefits in effect at June 30, 2025 are summarized as follows:

Note 9: Pension Plan (Continued)

A. General Information about the Pension Plan (Continued)

	Miscellaneous	PEPRA Miscellaneous
Hire Date	And prior to January 1, 2013*	On or after January 1, 2013
Benefit formula	2% @ 55	2% @ 62
Benefit vesting schedule	5 years of service	5 years of service
Benefit payments	monthly for life	monthly for life
Retirement age	50 - 63	52 - 67
Monthly benefits, as a % eligible compensation	1.426% to 2.418%	1.0% - 2.5%
Required employer contribution rates	11.88%	7.87%

Contributions

Section 20814(c) of the California Public Employees' Retirement Law (PERL) requires that the employer contribution rates for all public employers be determined on an annual basis by the actuary and shall be effective on the July 1 following notice of a change in the rate. The total plan contributions are determined through CalPERS's annual actuarial valuation process. For public agency cost-sharing plans covered by either the Miscellaneous or Safety risk pools, the Plan's actuarially determined rate is based on the estimated amount necessary to pay the Plan's allocated share of the risk pool's costs of benefits earned by employees during the year, and any unfunded accrued liability. The employer is required to contribute the difference between the actuarially determined rate and the contribution rate of employees. Employer contribution rates may change if plan contracts are amended. Payments made by the employer to satisfy contribution requirements that are identified by the pension plan terms as plan member contribution requirements are classified as plan member contributions. Employer Contributions to the Plan for the fiscal year ended June 30, 2025 were $431,173. The actual employer payments made to CalPERS by the City during the measurement period ended June 30, 2024 was $395,636.

B. Net Pension Liability

The City's net pension liability for the Plan is measured as the total pension liability, less the pension plan's fiduciary net position. The net pension liability of the Plan is measured as of June 30, 2024, using an annual actuarial valuation as of June 30, 2023 rolled forward to June 30, 2024 using standard update procedures. A summary of principal assumptions and methods used to determine the net pension liability is as follows :

Note 9: Pension Plan (Continued)

Valuation Date	June 30, 2023
Measurement Date	June 30, 2024
Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	Fair Value of Assets
Actuarial Assumptions:	
Discount Rate	6.90%
Inflation	2.30%
Salary Increases	Varies by entry age and service
Mortality Rate Table (1)	Derived using CalPERS membership data for all funds
Post Retirement Benefit Increase	The lesser of contract COLA or 2.30% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.30% thereafter.

(1) The mortality table used was developed based on CalPERS' specific data. The probabilities of mortality are based on the 2021 CalPERS Experience Study for the period from 2001 to 2019. Pre-retirement and Post-retirement mortality rates include generational mortality using 80% of Scale MP-2020 published by the Society of Actuaries. For more details on this table, please refer to the CalPERS Experience Study and Review of Actuarial Assumptions report from November 2021 that can be found on the CalPERS website.

Actuarial Methods and Assumptions Used to Determine Total Pension Liability

All other actuarial assumptions used in the June 30, 2024 valuation were based on the results of an actuarial experience study for the period from 2001 to 2019, including updates to salary increase, mortality and retirement rates. The Experience Study report can be obtained at CalPERS's website at www.calpers.ca.gov.

Long-term Expected Rate of Return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class.

In determining the long-term expected rate of return, CalPERS took into account both short-term and long-term market return expectations. Using historical returns of all the funds' asset classes, expected compound (geometric) returns were calculated over the next 20 years using a building-block approach. The expected rate of return was then adjusted to account for assumed administrative expenses of 10 Basis points. The expected rates of return by asset class are as follows:

Note 9: Pension Plan (Continued)

The expected real rates of return by asset class are as follows:

Asset Class[1]	Assumed Asset Allocation	Real Return Years 1 - 10[1,2]
Global Equity - Cap-weighted	30%	4.54%
Global Equity - Non-Cap-weighted	12%	3.84%
Private Equity	13%	7.28%
Treasury	5%	0.27%
Mortgage-backed Securities	5%	0.50%
Investment Grade Corporates	10%	1.56%
High Yield	5%	2.27%
Emerging Market Debt	5%	2.48%
Private Debt	5%	3.57%
Real Assets	15%	3.21%
Leverage	-5%	-0.59%

[1] An expected inflation of 2.30% used for this period.

[2] Figures are based on the 2021 Asset Liability Management study.

Discount Rate

The discount rate used to measure the total pension liability was 6.90%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Pension Plan Fiduciary Net Position

Information about the pension plan's assets, deferred outflows of resources, liabilities, deferred inflows of resources, and fiduciary net position are presented in CalPERS's audited financial statements, which are publicly available reports that can be obtained at CalPERS's website at www.calpers.ca.gov. The plan's fiduciary net position and additions to/deductions from the plan's fiduciary net position have been determined on the same basis used by the pension plan, which is the economic resources measurement focus and the accrual basis of accounting. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan. Investments are reported at fair value.

C. Proportionate Share of Net Pension Liability

The following table shows the Plan's proportionate share of the net pension liability over the measurement period.

Note 9: Pension Plan (Continued)

	Plan Total Pension Liability	Plan Fiduciary Net Position	Plan Net Pension Liability
Balance at 6/30/2023 (Valuation Date)	$ 10,152,988	8,467,820	1,685,168
Balance at 6/30/2024 (Measurement Date)	11,239,556	9,557,142	1,682,414
Net changes during 2023 - 2024	$ 1,086,568	1,089,322	(2,754)

The City's proportion of the net pension liability was determined by CalPERS using the output from the Actuarial Valuation System and the fiduciary net position, as provided in the CalPERS Public Agency Cost-Sharing Allocation Methodology Report, which is a publicly available report that can be obtained at CalPERS' website, at www.calpers.ca.gov. The City's proportionate share of the net pension liability for the miscellaneous Plan as of the June 30, 2024 and 2025 measurement dates was as follows:

Proportionate Share - June 30, 2024	0.03370%
Proportionate Share - June 30, 2025	0.03479%
Change - Increase (Decrease)	0.00109%

Sensitivity of the Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

The following presents the City's proportionate share of the net pension liability of the Plan as of the measurement date, calculated using the discount rate of 6.90 percent, as well as what the net pension liability would be if it were calculated using a discount rate that is 1 percentage-point lower (5.90 percent) or 1 percentage-point higher (7.90 percent) than the current rate:

	Discount Rate - 1% (5.90%)	Current Discount Rate (6.90%)	Discount Rate + 1% (7.90%)
Plan's Net Pension Liability	$ 3,199,084	1,682,414	433,971

Amortization of Deferred Outflows and Deferred Inflows of Resources

Under GASB 68, gains and losses related to changes in total pension liability and fiduciary net position are recognized in pension expense systematically over time.

The first amortized amounts are recognized in pension expense for the year the gain or loss occurs. The remaining amounts are categorized as deferred outflows and deferred inflows of resources related to pensions and are to be recognized in future pension expense.

Note 9: Pension Plan (Continued)

The amortization period differs depending on the source of the gain or loss:

Difference between projected and actual earnings	5-year straight-line amortization
All other amounts	Straight-line amortization over the expected average remaining service lives of all members that are provided with benefits (active, inactive and retired) as of the beginning of the measurement period

The expected average remaining service lifetime (EARSL) is calculated by dividing the total future service years by the total number of plan participants (active, inactive, and retired) in the Public Agency Cost-Sharing Multiple-Employer Plan (PERF C).

The EARSL for PERF C for the measurement period ending June 30, 2024 is 3.8 years, which was obtained by dividing the total service years of 630,177 (the sum of remaining service lifetimes of the active employees) by 166,163 (the total number of participants: active, inactive, and retired) in PERF C. Inactive employees and retirees have remaining service lifetimes equal to 0. Total future service is based on the members' probability of decrementing due to an event other than receiving a cash refund.

D. Pension Expense and Deferred Outflows and Deferred Inflows of Resources Related to Pensions

For the measurement period ending June 30, 2024 (the measurement date), the City incurred a pension expense of $639,241.

As of June 30, 2025, the City has deferred outflows and deferred inflows of resources related to pensions as follows:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Changes of assumptions	$ 43,242	-
Differences between expected and actual experience	145,460	5,676
Differences between projected and actual investments earnings	96,854	-
Differences between employer's contributions and proportionate share	31,473	17,915
Change in employer's proportion	222,774	-
Pension contributions made subsequent to measurement date	431,173	-
Total	$ 970,976	23,591

Note 9: Pension Plan (Continued)

Contributions subsequent to the measurement date of $431,173 reported with deferred outflows of resources will be recognized as a reduction of the net pension liability in the upcoming fiscal year. Other amounts reported as deferred outflows and deferred inflows of resources related to pensions will be recognized in future pension expense as follows:

Fiscal Year Ending June 30:	Deferred Outflows/(Inflows) of Resources
2026	$ 244,262
2027	274,241
2028	30,900
2029	(33,191)
Thereafter	-

Note 10: Other Post-Employment Benefits (OPEB)

Plan Description

The City has established a Retiree Healthcare Plan (HC Plan) and participates in a single-employer defined benefit retiree healthcare plan. Plan assets are not administered through a trust and there are no assets accumulated in a GASB-compliant trust. Medical coverage is currently provided through CalPERS as permitted under the Public Employees' Medical and Hospital Care Act (PEMHCA). This coverage requires the employee to satisfy the requirements for retirement under CalPERS: either (a) attainment of age 50 (age 52, if a miscellaneous employee new to PERS on or after January 1, 2013) with 5 years of State or public agency service or (b) an approved disability retirement.

The employee must begin his or her retirement benefit within 120 days of terminating employment with the City to be eligible to continue medical coverage through the agency and be entitled to the benefits described below. If an eligible employee is not already enrolled in the medical plan, he or she may enroll within 60 days of retirement, during any future open enrollment period or with a qualifying life event. In other words, it is the timing of initiating retirement benefits and not timing of enrollment in the medical program which determines whether or not a City retiree qualifies for lifetime medical coverage and any benefits defined in the PEMHCA resolution. Once eligible, coverage may be continued at the retiree's option for his or her lifetime. A surviving spouse and other eligible dependents may also continue coverage.

PEMHCA Benefits provided: As a PEMHCA employer, the City is obligated to contribute toward the cost of retiree medical coverage for the retiree's lifetime or until coverage is discontinued. The City maintains a resolution with CalPERS defining the level of the City's contribution toward the cost of medical plan premiums for employees and retirees to be the PEMHCA minimum employer contribution (MEC). The MEC is $157 per month in 2024 and $158 per month in 2025. A separate financial report is not prepared for the HC Plan.

Note 10: Other Post-Employment Benefits (OPEB) (Continued)

Employees Covered

As of the June 30, 2024, actuarial valuation, the following current and former employees were covered by the benefit terms under the HC Plan:

Active employees	34
Inactive employees or beneficiaries currently receiving benefits	4
Inactive employees entitled to but not yet receiving benefits	-
Total	38

Contributions

City contributions to the Plan occur as benefits are paid to or on behalf of retirees. Benefit payments may occur in the form of direct payments for premiums and taxes ("explicit subsidies") and/or indirect payments to retirees in the form of higher premiums for active employees ("implicit subsidies"). The City makes contributions to eligible retirees for their medical plan premiums when the retiree enrolls in a City sponsored health plan. For the fiscal year ended June 30, 2025, the City did not make any cash contributions. The City does not have any assets accumulated in a trust or other equivalent arrangement.

Total OPEB Liability

The City's total OPEB liability was measured as of June 30, 2024 and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation dated June 30, 2023, based on the following actuarial methods and assumptions:

Actuarial Assumptions:	
Discount Rate	3.93%
Inflation	2.50%
Salary Increases	2.75%
Mortality Rate	2021 CalPERS Mortality for Miscellaneous and Schools Employees
Healthcare Trend Rate	4.00%

Discount Rate

The discount rate used to measure the total OPEB liability was 3.93% percent. The City is currently financing its OPEB liability on a pay-as-you-go basis. With the City's approval, the discount rate used in the valuation is based on the S&P Municipal Bond 20 Year High Grade Index. As of the beginning and end of the Measurement Period, use of this index results in discount rates of 3.65% on June 30, 2023 and 3.93% on June 30, 2024.

Changes of Assumptions

The discount rate increased from 3.65% to 3.93%.

Note 10: Other Post-Employment Benefits (OPEB) (Continued)

Changes in the Total OPEB Liability

The changes in the total OPEB liability for the HC Plan are as follows:

	Total OPEB Liability
Balance at June 30, 2024 (Measurement Date June 30, 2023)	$ 495,269
Changes recognized for the measurement period:	
Service Cost	80,002
Interest	19,402
Changes of assumptions	(24,724)
Plan experience differences	-
Benefit payments	(7,392)
Net Changes	67,288
Balance at June 30, 2025 (Measurement Date June 30, 2024)	$ 562,557

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

The following presents the total OPEB liability of the City if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate, for measurement period ended June 30, 2024:

	1% Decrease 2.93%	Current Discount Rate 3.93%	1% Increase 4.93%
Total OPEB Liability	$ 656,351	562,557	487,471

Sensitivity of the Total OPEB Liability to Changes in the Health Care Cost Trend Rates

The following presents the total OPEB liability of the Authority if it were calculated using health care cost trend rates that are one percentage point lower or one percentage point higher than the current rate, for measurement period ended June 30, 2024:

	1% Decrease	Current Healthcare Cost Trend	1% Increase
Total OPEB Liability	$ 457,320	562,557	699,224

Note 10: Other Post-Employment Benefits (OPEB) (Continued)

Recognition of Deferred Outflows and Deferred Inflows of Resources

Gains and losses related to changes in total OPEB liability and fiduciary net position are recognized in OPEB expense systematically over time.

Amounts are first recognized in OPEB expense for the year the gain or loss occurs. The remaining amounts are categorized as deferred outflows and deferred inflows of resources related to OPEB and are to be recognized in future OPEB expense.

The recognition period differs depending on the source of the gain or loss:

Assumption changes and experience gains/losses	Expected average remaining service lifetime (EARSL) (12.25 Years)

OPEB Expense and Deferred Outflows/Inflows of Resources Related to OPEB

For the fiscal year ended June 30, 2025, the City recognized OPEB expense of $31,623. As of fiscal year ended June 30, 2025, the City reported deferred outflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
OPEB contributions subsequent to measurement date	$ 7,560	-
Changes of assumptions	35,829	265,590
Differences between expected and actual experience	4,123	234,189
Total	$ 47,512	499,779

Contributions subsequent to the measurement date of $7,560 reported with deferred outflows of resources will be recognized as a reduction of the net OPEB liability in the upcoming fiscal year. The amounts reported as deferred outflows and deferred inflow of resources related to OPEB will be recognized in future as expense as follows:

Fiscal Year Ended June 30	Deferred Outflows/(Inflows) of Resources
2026	$ (67,781)
2027	(60,193)
2028	(62,425)
2029	(9,124)
2030	(9,118)
Thereafter	(251,186)

Note 11: Risk Management

A. Description of Self-Insurance Pool Pursuant to Joint Powers Agreement

The City of Aliso Viejo is a member of the California Joint Powers Insurance Authority (Authority). The Authority is composed of 124 California public entities and is organized under a joint powers agreement pursuant to California Government Code §6500 et seq. The purpose of the Authority is to arrange and administer programs for the pooling of self-insured losses, to purchase excess insurance or reinsurance, and to arrange for group purchased insurance for property and other lines of coverage. The Authority began covering claims of its members in 1978. Each member government has an elected official as its representative on the Board of Directors. The Board operates through a nine-member Executive Committee.

B. Primary Self-Insurance Programs of the Authority

Each member pays an annual contribution at the beginning of the coverage period. A retrospective adjustment is then conducted annually thereafter, for coverage years 2012-13 and prior. Coverage years 2013-14 and forward are not subject to routine annual retrospective adjustment. The total funding requirement for primary self-insurance programs is based on an actuarial analysis. Costs are allocated to individual agencies based on payroll and claims history, relative to other members of the risk-sharing pool.

Primary Liability Program

Claims are pooled separately between police and general government exposures. (1) The payroll of each member is evaluated relative to the payroll of other members. A variable credibility factor is determined for each member, which establishes the weight applied to payroll and the weight applied to losses within the formula. (2) The first layer of losses includes incurred costs up to $100,000 for each occurrence and is evaluated as a percentage of the pool's total incurred costs within the first layer. (3) The second layer of losses includes incurred costs from $100,000 to $500,000 for each occurrence and is evaluated as a percentage of the pool's total incurred costs within the second layer. (4) Incurred costs from $500,000 to $50 million are distributed based on the outcome of cost allocation within the first and second loss layers.

The overall coverage limit for each member, including all layers of coverage, is $50 million per occurrence. Subsidence losses have a sub-limit of $50 million per occurrence. The coverage structure is composed of a combination of pooled self-insurance, reinsurance, and excess insurance. Additional information concerning the coverage structure is available on the Authority's website: https://cjpia.org/coverage/risk-sharing-pools/.

Primary Workers' Compensation Program

Claims are pooled separately between public safety (police and fire) and general government exposures. (1) The payroll of each member is evaluated relative to the payroll of other members. A variable credibility factor is determined for each member, which establishes the weight applied to payroll and the weight applied to losses within the formula. (2) The first layer of losses includes incurred costs up to $75,000 for each occurrence and is evaluated as a percentage of the pool's total incurred costs within the

Note 11: Risk Management (Continued)

first layer. (3) The second layer of losses includes incurred costs from $75,000 to $200,000 for each occurrence and is evaluated as a percentage of the pool's total incurred costs within the second layer. (4) Incurred costs from $200,000 to statutory limits are distributed based on the outcome of cost allocation within the first and second loss layers.

For 2024-25 the Authority's pooled retention is $1 million per occurrence, with reinsurance to statutory limits under California Workers' Compensation Law. Employer's Liability losses are pooled among members to $1 million. Coverage from $1 million to $5 million is purchased as part of a reinsurance policy, and Employer's Liability losses from $5 million to $10 million are pooled among members.

B. Purchased Insurance

Pollution Legal Liability Insurance

The City of Aliso Viejo participates in the pollution legal liability insurance program which is available through the Authority. The policy covers sudden and gradual pollution of scheduled property, streets, and storm drains owned by the City of Aliso Viejo. Coverage is on a claims-made basis. There is a $250,000 deductible. The Authority has an aggregate limit of $20 million.

Property Insurance

The City of Aliso Viejo participates in the all-risk property protection program of the Authority. This insurance protection is underwritten by several insurance companies. City of Aliso Viejo property is currently insured according to a schedule of covered property submitted by the City of Aliso Viejo to the Authority. There is a $10,000 deductible per occurrence except for non-emergency vehicle insurance which has a $2,500 deductible.

Crime Insurance

The City of Aliso Viejo purchases crime insurance coverage in the amount of $1,000,000 with a $2,500 deductible. The fidelity coverage is provided through the Authority.

Special Event Tenant User Liability Insurance

The City of Aliso Viejo further protects against liability damages by requiring tenant users of certain property to purchase low-cost tenant user liability insurance for certain activities on agency property. The insurance premium is paid by the tenant user and is paid to the City of Aliso Viejo according to a schedule. The City of Aliso Viejo then pays for the insurance. The insurance is facilitated by the Authority.

C. Adequacy of Protection

During the past three fiscal years, none of the above programs of protection experienced settlements or judgments that exceeded pooled or insured coverage. There were also no significant reductions in pooled or insured liability coverage in 2024-25.

Note 12: Joint Venture

Orange County Fire Authority

In July 2001, the City entered into a joint powers agreement with the cities of Buena Park, Cypress, Dana Point, Irvine, Laguna Hills, Laguna Niguel, Lake Forest, La Palma, Los Alamitos, Mission Viejo, Placentia, San Clemente, San Juan Capistrano, Seal Beach, Stanton, Tustin, Villa Park, Westminster, and Yorba Linda and the County of Orange to create the Orange County Fire Authority (Fire Authority). Since the creation of the Fire Authority, the Cities of Laguna Woods, Rancho Santa Margarita, Garden Grove and Santa Ana joined the Fire Authority as members eligible for fire protection services. The purpose of the Fire Authority is to provide for mutual fire protection, prevention and suppression services, and related and incidental services including, but not limited to, emergency medical and transport services as well as providing facilities and personnel for such services. The effective date of formation was March 1, 1995. The Fire Authority's governing board consists of one representative from each City and two from the County. The operations of the Fire Authority are funded with fire fees collected by the County through the property tax roll for the unincorporated area and on behalf of all member cities except for the Cities of Stanton, Tustin, San Clemente, Buena Park, Placentia, Seal Beach, Garden Grove and Santa Ana. The County pays all structural fire fees it collects to the Authority. The Cities of Stanton, Tustin, San Clemente, Buena Park, Placentia, Seal Beach, Garden Grove and Santa Ana are considered "cash contract cities" and accordingly, make cash contributions based on the Fire Authority's annual budget. The City of Aliso Viejo does not have an equity interest in the assets of the Orange County Fire Authority. Complete financial statements may be obtained from the Orange County Fire Authority, 1 Fire Authority Rd., Irvine, California, 92602.

Note 13: Contingent Liabilities

Various claims and suits have been filed against the City in the normal course of business. Although the outcome of these matters is not presently determinable in the opinion of legal counsel, the resolutions of these matters will not have a material adverse effect on the financial condition of the City.

Note 14: Tax Abatements

On July 1, 2016, the City entered into a sales tax abatement agreement under the Economic Development Subsidy under Government Code Section 53083. On August 1, 2023, the City entered into another sales tax abatement agreement under the Economic Development Subsidy under Government Code Section 53083. Under both agreements the City abates Sales Tax Revenue, an amount equal to the sum of fifty percent (50%) of the Sales Tax Revenues attributable to annual taxable sales for the fiscal year which includes such Computation Quarter up to eight hundred thousand dollars ($800,000) as determined on a cumulative basis for such fiscal year, and seventy percent (70%) of the Sales Tax Revenues attributable to annual taxable sales for the fiscal year which includes such Computation Quarter over eight hundred thousand dollars ($800,000) as determined on a cumulative basis for such fiscal year ending June 30. For the fiscal year ended June 30, 2025, the City abated sales taxes totaling $2,115,743 and $858,588 for abatement agreements entered into on July 1, 2016, and August 1, 2023, respectively.

Note 15: Reconciliation of Net Position

The net investment in capital assets as presented in the Statement of Net Position is calculated as follows:

Capital assets, net	$ 110,397,038
Less bonds payable	(11,035,000)
Less premium on bonds payable	(806,719)
Less lease liability	(30,967)
Less subscription liability	(526,549)
Net investment in capital assets	$ 97,997,803

Note 16: Stewardship, Compliance and Accountability

The following governmental funds reported a deficit fund balance at June 30, 2025:

Government Funds:		
Non-major Governmental Funds:		
Federal Grants	$	(87,028)

Note 17: Commitments and Contingencies

Renewable Farms

On July 1, 2023, the City entered into a new agreement with Renewable Farms, a non-profit corporation to operate agricultural and special event venue operations. The agreement is for 7 years with two renewal terms of two (2) years each. Each two-year renewal will automatically go into effect unless City or Licensee gives at least 180 days written notice of its intent not to extend. If intent not to extend is timely given, then this Agreement will terminate at the end of the then current term. The City should collect all revenues with the operations of the Farm and pay 90% of gross revenues collected from the preceding month. All costs incurred by the City in connection with the operation and maintenance of the Farm, including the actual cost of all utilities paid by the City for the Farm and all repair and maintenance work (including labor and materials) performed by the City or by any third party on behalf of the City pursuant to Section 10.4 will be reimbursed by the Renewable Farms.

Note 18 : Subsequent Event

On July 1, 2025, the City extended the lease agreement with Red Night Consulting for City Hall Space - Suite 280, for an additional period of 36 months. An initial lease receivable was recorded in the amount of $246,888. The lessee is required to make monthly fixed payments of $6,919 from July 1, 2025, through June 30, 2026, $ 7,126 from July 1, 2026, through June 30, 2027, and $7,342 from July 1, 2027, through June 30, 2028. The lease has an interest rate of 2.643%. The Lessee shall have the option to extend the term of the lease for one additional five-month period.

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
GENERAL FUND
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 37,881,758	37,881,758	37,881,758	-	34,426,099
Resources (Inflows):					
Taxes	22,340,771	22,340,771	24,880,722	2,539,951	21,634,913
Licenses and permits	737,900	737,900	1,227,832	489,932	785,623
Intergovernmental	57,500	57,500	113,190	55,690	156,612
Charges for services	1,845,147	1,845,147	1,328,681	(516,466)	1,797,696
Use of money and property	495,000	495,000	2,307,938	1,812,938	918,409
Fines and forfeitures	185,000	185,000	293,288	108,288	296,430
Other	480,149	480,149	669,748	189,599	906,111
Proceeds of leases and SBITA	-	-	365,786	365,786	125,500
Transfers in	608,853	608,853	874,114	265,261	1,552,629
Total resources	26,750,320	26,750,320	32,061,299	5,310,979	28,173,923
Amounts available for appropriations	64,632,078	64,632,078	69,943,057	5,310,979	62,600,022
Charges to Appropriations (Outflows):					
General government:					
City council	208,820	208,820	182,268	26,552	180,467
City manager	798,950	798,950	617,526	181,424	1,008,951
Human resources	193,843	210,684	162,403	48,281	189,435
City clerk	595,128	595,128	465,590	129,538	514,263
City attorney	482,400	465,559	351,977	113,582	486,548
Finance	904,940	904,940	876,747	28,193	776,072
Information technology	1,128,286	1,128,286	951,128	177,158	978,142
General government	912,334	911,334	1,136,913	(225,579)	925,622
Community development:					
Community services	3,139,132	3,165,132	2,744,809	420,323	2,743,811
Planning	846,086	840,222	749,024	91,198	686,978
Building	809,540	815,404	865,223	(49,819)	827,552
Code enforcement	155,200	155,200	104,012	51,188	111,242
Economic development	2,326,000	2,326,000	2,993,575	(667,575)	2,292,370
Public works	1,939,500	1,914,500	1,668,272	246,228	1,724,588
Public safety	11,332,287	11,332,287	10,462,135	870,152	10,005,398
Debt service:					
Principal payment	9,400	8,675	123,057	(114,382)	177,043
Interest and fiscal charges	200	925	2,643	(1,718)	7,262
Transfers out	1,357,452	1,385,452	1,043,519	341,933	1,082,520
Total charges to Appropriations	27,139,498	27,167,498	25,500,821	1,666,677	24,718,264
Fund Balances - Ending	$ 37,492,580	37,464,580	44,442,236	6,977,656	37,881,758

See notes to required supplementary information

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
ALISO VIEJO CENTER
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ -	-	-	-	60,238
Resources (Inflows):					
Charges for services	2,459,064	2,459,064	2,723,819	264,755	2,934,031
Other	525,268	525,268	469,326	(55,942)	727,282
Amounts Available for Appropriations	2,984,332	2,984,332	3,193,145	208,813	3,721,551
Charges to Appropriations (Outflows):					
Community services	2,398,579	2,398,579	2,435,485	(36,906)	2,322,472
Transfers out	585,753	585,753	757,660	(171,907)	1,399,079
Total Charges to Appropriations	2,984,332	2,984,332	3,193,145	(208,813)	3,721,551
Fund Balances - Ending	$ -	-	-	-	-

See notes to required supplementary information

CITY OF ALISO VIEJO

REQUIRED SUPPLEMENTARY INFORMATION
MISCELLANEOUS PLAN
SCHEDULE OF PROPORTIONATE SHARE OF THE NET PENSION LIABILITY
AS OF JUNE 30, FOR THE LAST TEN FISCAL YEARS

Measurement Date	Employer's Proportion of the Collective Net Pension Liability[1]	Employer's Proportionate Share of the Collective Net Pension Liability	Employer's Covered Payroll	Employer's Proportionate Share of the Collective Net Pension Liability as a Percentage of the Employer's Covered Payroll	Pension Plan's Fiduciary Net Position as a Percentage of the Total Pension Liability
6/30/2015	0.008707%	$ 597,632	$ 1,512,663	39.51%	84.98%
6/30/2016	0.008898%	845,320	1,553,759	54.40%	81.19%
6/30/2017	0.010501%	1,041,374	1,863,005	55.90%	80.23%
6/30/2018	0.009633%	928,264	2,081,191	44.60%	84.47%
6/30/2019	0.008506%	871,568	2,339,338	37.26%	86.96%
6/30/2020	0.009520%	1,035,831	2,602,634	39.80%	86.14%
6/30/2021	0.000885%	47,870	2,732,043	1.75%	99.43%
6/30/2022	0.013873%	1,427,310	2,740,729	52.08%	84.81%
6/30/2023	0.013500%	1,685,168	3,083,629	54.65%	83.40%
6/30/2024	0.013900%	1,682,414	3,347,616	50.26%	85.03%

[1]Proportion of the net pension liability represents the plan's proportion of PERF C, which includes both the Miscellaneous and Safety Risk Pools excluding the 1959 Survivors Risk Pool.

CITY OF ALISO VIEJO

REQUIRED SUPPLEMENTARY INFORMATION
MISCELLANEOUS PLAN
SCHEDULE OF PLAN CONTRIBUTIONS
AS OF JUNE 30, FOR THE LAST TEN FISCAL YEARS

Fiscal Year	Contractually Determined Contributions	Contributions in Relation to the Contractually Determined Contributions	Contribution Deficiency (Excess)	Employer's Covered Payroll	Contributions as a Percentage of Covered Payroll
2015-16	$ 146,386	$ (146,386)	-	$ 1,553,759	9.42%
2016-17	179,320	(179,320)	-	1,863,005	9.63%
2017-18	270,996	(270,996)	-	2,081,191	13.02%
2018-19	239,511	(439,511)	(200,000)	2,339,338	10.24%
2019-20	274,755	(274,755)	-	2,602,634	10.56%
2020-21	319,112	(319,112)	-	2,732,043	11.68%
2021-22	318,599	(318,599)	-	2,740,729	11.62%
2022-23	370,493	(370,493)	-	3,083,629	12.01%
2023-24	395,636	(395,636)	-	3,347,616	11.82%
2024-25	431,173	(431,173)	-	3,374,995	12.78%

Notes to Schedule:

Changes in Benefit Terms: There were no changes to benefit terms that applied to all members of the Public Agency Pool.

Changes in Assumptions: There were no assumption changes in 2023 or 2024. Effective with the June 30, 2021 valuation date (June 30, 2022 measurement date), the accounting discount rate was reduced from 7.15% to 6.90%. In determining the long-term expected rate of return, CalPERS took into account long-term market return expectations as well as the expected pension fund cash flows. In addition, demographic assumptions and the price inflation assumption were changed in accordance with the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. The accounting discount rate was 7.15% for measurement dates June 30, 2017, through June 30, 2021, and 7.65% for measurement dates June 30, 2015 through June 30, 2016.

CITY OF ALISO VIEJO

SCHEDULE OF CHANGES IN TOTAL OPEB LIABILITY AND RELATED RATIOS
LAST TEN FISCAL YEARS*

Measurement Period	2017	2018	2019	2020	2021
Total OPEB Liability					
Service Cost	$ 100,385	90,249	97,449	57,648	61,087
Interest on the Total OPEB Liability	17,635	23,007	25,402	11,677	13,141
Actual and expected experience difference	-	-	(308,246)	-	-
Changes in assumptions	(73,112)	26,106	(217,431)	9,295	35,505
Difference between expected and actual experience	-	-	-	-	6,123
Benefit payments	(4,554)	(11,378)	(11,963)	(5,572)	(7,597)
Net change in Total OPEB Liability	40,354	127,984	(414,789)	73,048	108,259
Total OPEB Liability - Beginning	610,120	650,474	778,458	363,669	436,717
Total OPEB Liability - Ending	$ 650,474	778,458	363,669	436,717	544,976
Plan fiduciary net position as a percentage of the total OPEB liability	0.00%	0.00%	0.00%	0.00%	0.00%
Covered-employee payroll	$ 2,227,782	2,451,516	3,166,359	3,357,784	2,740,729
Net OPEB liability as a percentage of covered-employee payroll	29.20%	31.75%	11.49%	13.01%	19.88%

Notes to schedule:
The City does not have assets accumulated in a trust that meets the criteria of GASB 75 to pay related benefits.
Contributions are fixed and not based on a measure of pay, therefore covered-employee payroll is used in the schedule.

Valuation Date	6/30/2023
Actuarial cost method	Entry Age Normal Level % of Pay
Discount rate	3.93%
Inflation	2.50%
Healthcare cost trend rates	4.00%
Salary increases	2.75%
Retirement age	50 to 75
Mortality	2021 CalPERS Mortality for Miscellaneous and Schools Employees
Mortality improvement	MW Scale 2023

* Measurement date 6/30/2017 (fiscal year 2018) was the first year of implementation. Additional years will be presented as information becomes available.

Measurement Period	2022	2023	2024
Total OPEB Liability			
Service Cost	94,853	97,699	80,002
Interest on the Total OPEB Liability	13,866	21,428	19,402
Actual and expected experience difference	-	-	-
Changes in assumptions	(166,915)	696	(24,724)
Difference between expected and actual experience	-	(95,410)	-
Benefit payments	(7,505)	(8,419)	(7,392)
Net change in Total OPEB Liability	(65,701)	15,994	67,288
Total OPEB Liability - Beginning	544,976	479,275	495,269
Total OPEB Liability - Ending	479,275	495,269	562,557
Plan fiduciary net position as a percentage of the total OPEB liability	0.00%	0.00%	0.00%
Covered-employee payroll	3,640,478	3,747,616	3,374,995
Net OPEB liability as a percentage of covered-employee payroll	13.17%	13.22%	16.67%

Notes to schedule:
The City does not have assets accumulated in a trust that meets the criteria of GASB 75 to pay related benefits.
Contributions are fixed and not based on a measure of pay, therefore covered-employee payroll is used in the schedule.

Valuation Date	6/30/2023
Actuarial cost method	Entry Age Normal Level % of Pay
Discount rate	3.93%
Inflation	2.50%
Healthcare cost trend rates	4.00%
Salary increases	2.75%
Retirement age	50 to 75
Mortality	2021 CalPERS Mortality for Miscellaneous and Schools Employees
Mortality improvement	MW Scale 2023

* Measurement date 6/30/2017 (fiscal year 2018) was the first year of implementation. Additional years will be presented as information becomes available.

Budgetary Comparison Information

Budget Policies

Annual budgets are legal adopted or amended for all governmental funds on a basis consistent with generally accepted accounting principles, except for the following funds for which annual budgets were not adopted or amended:

Special Revenue Fund:
AV Ranch Foundation Fund

The City Manager shall prepare and submit the proposed annual budget to the City Council for its approval for all governmental funds. The agenda for the budget workshops and budget meetings are noticed in accordance with the Brown Act. After reviewing the same and making such revisions as it may deem advisable and public input the budget is then adopted annually by the Council at a regularly held meeting. The budget is adopted prior to the beginning of the fiscal year and serves as the foundation for the City's financial plan.

The level of budgetary control (the level at which expenditures cannot legally exceed the appropriated amount) is established at the fund level. Transfers of appropriations between funds can be made with the City Manager/Financial Services Director approval. The City Council's approval is required for all budget amendments that result in a change to the fund balances.

Appropriations lapse at the end of the fiscal year unless they are re-appropriated through the formal budget process. Encumbrances do not constitute expenditures or liabilities of the City.

Budgeted amounts are as originally adopted, or as amended in accordance with prescribed procedures throughout the fiscal year.

Excess of expenditures over appropriations are as follows:

Expenditures that exceeded appropriations for the year ended June 30, 2025 are as follows:

Government Funds:	Final Budget	Expenditures	Excess
Major Government Funds:			
Aliso Viejo Center:			
Community services	$ 2,398,579	2,435,485	(36,906)

CAPITAL ASSETS – MODIFIED APPROACH FOR INFRASTRUCTURE

The City elected to use the modified approach in reporting their street pavement infrastructure network.

Under the modified approach, infrastructure assets that are part of a network or subsystem of a network are not required to be depreciated as long as two requirements are met. First, the government manages the eligible infrastructure assets using an asset management system that has the following characteristics:

- Has an up-to-date inventory of eligible infrastructure assets
- Performs condition assessments of the eligible infrastructure assets and summarize the results using a measurement scale
- Estimates each year the annual amount to maintain and preserve the eligible infrastructure assets at the condition level established and disclosed by the government.

Second, the government documents that the eligible infrastructure assets are being preserved approximately at (or above) a condition level established and disclosed by the government. If eligible infrastructure assets meet all requirements and are not depreciated, all expenditures made for those assets (except for additions and improvements) are expensed in the period incurred. Additions and improvements to eligible infrastructure assets are capitalized. Additions or improvements increase the capacity or efficiency of infrastructure assets rather than preserve the useful life of the assets.

The condition of road pavement is measured using the Abbott Pavement Management System. All city streets have asphalt surfaces. Six distress factors are assessed for all street segments. Pavement condition is rated on a scale of 0 to 100 points. This rating scale is called a deficiency rating. The scale is subdivided into ranges or categories. Pavement condition is commonly defined by the following five categories.

1. Very good (86 to 100 Rating) — A street rated as excellent has the characteristics of a new street. A street in this category has no surface defects that would affect ride quality or cause excess tire noise.

2. Good (75 to 85 Rating) — A street rated as good has some surface defects that can be seen when walking along the street. Some cracking and raveling will probably exist. In fact, there could be large cracks in the street or many hairline cracks. There may be some minor bumps that can be felt when driving the street at posted speeds.

3. Fair (60 to 74 Rating) — A street rated as fair has areas of surface defects that are apparent to drivers and passengers as they use the street. There will probably be significant cracking and raveling of the asphalt surface. If cracking does not exist, the street will probably have many patches and utility cuts or perhaps some rutting and deformation. There will be some ride roughness and some additional tire noise. These streets will not cause increases in vehicle driving costs due to extra wear and tear on vehicles.

CAPITAL ASSETS – MODIFIED APPROACH FOR INFRASTRUCTURE (CONTINUED)

4. Poor (41 to 59 Rating) — A street rated as poor has surface defects generally throughout its length that are readily apparent to anyone using the street. There will be areas showing structural failure with closely spaced cracking and there may be pieces of loose pavement. A street in this category will cause additional vehicle user costs and excessive tire noise.

5. Very poor (40 and below Rating) — A street rated critical will have major areas of structural failure which may alter the speeds at which typical drivers drive on the street. There will be missing pieces of pavement. Repair of a street in this category will require reconstruction.

Annual street maintenance costs for the previous five fiscal years were as follows:

Year Ended June 30,	Actual	Estimated
2021	$ 3,425,241	3,779,360
2022	2,641,341	3,432,500
2023	3,480,668	4,824,716
2024	2,531,055	3,684,900
2025	2,070,847	4,058,051
Total	$ 14,149,152	19,779,527

The City of Aliso Viejo City Council (the Council) accepted the findings of the Pavement Management System performed in fiscal year 2002 (see results below) and adopted a condition rating of 75 as the minimum acceptable Pavement Condition Index (PCI). The PMS was updated using statistical methods in 2004. The approach incorporated a new field survey of approximately 10% of all streets. The survey was then statistically extended to the entire street system. A complete field survey was performed and accepted by the City Council starting fiscal year 2008 and every two years thereafter. See below for the three most recent condition assessments:

Conditions		2020	Mileage	2022	Mileage	2024	Mileage
86-100	Very good	40.8%	30.5	41.6%	31.2	50.5%	36.4
75-85	Good	36.3%	25.5	34.8%	23.7	23.4%	16.9
60-74	Fair	20.1%	14.1	17.6%	11.5	21.0%	15.2
41-59	Poor	2.1%	1.5	6.0%	4.0	5.1%	3.7
0-40	Very poor	0.7%	0.5	0.0%	-	0.0%	0
		100.0%	72.1	100.0%	70.4	100.0%	72.2

The results of the most recent complete condition assessment (performed in fiscal year 2024) reported an average condition rating of 82 which is consistent with the 2022 average. Funding in the amount of $1,041,848 was utilized for the maintenance/rehabilitation to achieve the minimum PCI standard as of June 30, 2024. The estimated funding required to maintain the PCI standard was calculated at $2,100,000. The condition survey will be updated during the fiscal year ended June 30, 2026, for a two-year cycle.

OTHER GOVERNMENTAL FUNDS

OTHER SPECIAL REVENUE FUNDS

Traffic Congestion Relief

The Traffic Congestion Relief Fund is used to account for revenue received from the SB1 Loan Repayment Program from the State of California.

Gas Tax

This fund is used to account for the City's share of the motor vehicle gas tax imposed under the provisions of the Street and Highway Code of the State of California under Sections 2105, 2106, 2107, and 2107.5 which are legally restricted for the acquisition, construction, improvements, and maintenance of public streets.

Measure M

The Measure M Fund is used to account for the City's share of the sales tax increase authorized by Orange County's Measure "M". These monies are legally restricted for the acquisition, construction, and improvement of public streets.

SB1 – RMRA

Senate Bill (SB) 1 created the Road Rehabilitation Maintenance Account to address deferred maintenance on the State Highway System and the local street and road system. These funds are legally restricted for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads.

Public Safety Grants

This fund is used to account for law enforcement grants received such as the California Law Enforcement Equipment Program (CLEEP) and the Supplemental Law Enforcement State Fund (SLESF).

Air Quality Improvement

This fund is used to account for the City's share of vehicle registration fees that the State of California has allocated to address air quality concerns in Southern California. These monies are to be used in air quality maintenance programs locally and/or regionally.

Integrated Waste Management

This fund is used to account for the receipt of the California Beverage and Recycling Grant.

Other Grants

This fund is used to account for state, local, and other grants received such as Prop 10, CalRecycle, and the urban Runoff Grant.

OTHER GOVERNMENTAL FUNDS (Continued)

Technology Grants

This fund is a result of negotiations between the City and a franchisee for a new franchise agreement. These funds will be used for new technology purchases, provide City information on the Cable T.V. Government Access Channel and provide programs and access to computers through technology upgrades to the Family Resource Center.

Development Impact

This fund is used to account for revenue received as a result of negotiated developer agreements for affordable housing, traffic mitigation, community enhancement, and open spaces. This fund had no legally adopted budget for fiscal year ending June 30, 2025.

Federal Grants

The Federal Grants Fund is used to account for Federal Grants received by the City for various projects. Grants vary from year to year depending on funding awards, but include Community Development Block Grant (CDBG), Energy Efficiency and Conservation Block Grants, and Federal Emergency Management Agency (FEMA).

Aquatic Center

This fund is used to account for the operations of the Aliso Viejo Aquatic Center. The Aliso Viejo Aquatic Center is a City owned facility that provides residents with a resort-style swimming complex that includes a lap pool, whirlpool, tots wading pool, snack bar, and patio.

AV Ranch Foundation

This fund is used to account for donations received for the AV Ranch and payments approved by its Board of Trustees. This fund had no legally adopted budget for fiscal year ending June 30, 2025.

CAPITAL PROJECTS FUNDS

Capital Improvements

This fund is used to account for the City's street improvement projects.

Storm Water

This fund is used to account for the City's storm water related improvement projects.

Street Improvements

This fund is used to account for the City's street improvement projects.

DEBT SERVICE FUNDS

Debt Service Fund

This fund is used to account for the City's debt payments as well as any additional debt amounts deemed to be advisable and necessary for any public or municipal purposes.

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CITY OF ALISO VIEJO

COMBINING BALANCE SHEET
NONMAJOR GOVERNMENTAL FUNDS
June 30, 2025
(With Comparative Data for Prior Year)

	Special Revenue Funds				
	Traffic Congestion Relief	Gas Tax	Measure M	SB1 - RMRA	Public Safety Grants
Assets:					
Cash and investments	$ 79,039	1,315,131	2,049,730	2,314,172	378,525
Receivables:					
Accounts	-	-	-	-	-
Accrued interest	391	6,517	10,158	11,467	1,874
Due from other governments	-	128,082	177,498	249,072	-
Total Assets	$ 79,430	1,449,730	2,237,386	2,574,711	380,399
Liabilities, Deferred Inflows of Resources, and Fund Balances:					
Liabilities:					
Accounts payable	$ -	100,193	2,480	-	6,120
Accrued liabilities	-	-	-	-	-
Due to other funds	-	-	-	-	-
Unearned revenue	-	-	-	-	-
Total Liabilities	-	100,193	2,480	-	6,120
Deferred Inflows of Resources:					
Unavailable revenues - grants	-	-	-	-	-
Fund Balances:					
Restricted for:					
Debt service	-	-	-	-	-
Community development projects	-	-	-	-	-
Public works	79,430	1,349,537	2,234,906	2,574,711	-
Public safety	-	-	-	-	374,279
Unassigned	-	-	-	-	-
Total Fund Balances (Deficit)	79,430	1,349,537	2,234,906	2,574,711	374,279
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	$ 79,430	1,449,730	2,237,386	2,574,711	380,399

	Special Revenue Funds				
	Air Quality Improvement	Integrated Waste Management	Other Grants	Technology Grants	Development Impact
Assets:					
Cash and investments	1,606,659	166,697	-	404,487	1,377,778
Receivables:					
Accounts	-	-	-	17,894	-
Accrued interest	7,958	826	593	2,003	-
Due from other governments	18,240	-	200,703	-	-
Total Assets	1,632,857	167,523	201,296	424,384	1,377,778
Liabilities, Deferred Inflows of Resources, and Fund Balances:					
Liabilities:					
Accounts payable	-	-	669	1,395	-
Accrued liabilities	-	-	-	-	-
Due to other funds	-	-	37,181	-	-
Unearned revenue	-	92,721	116,305	-	-
Total Liabilities	-	92,721	154,155	1,395	-
Deferred Inflows of Resources:					
Unavailable revenues - grants	18,240	-	703	-	-
Fund Balances:					
Restricted for:					
Debt service	-	-	-	-	-
Community development projects	-	74,802	46,438	422,989	1,377,778
Public works	1,614,617	-	-	-	-
Public safety	-	-	-	-	-
Unassigned	-	-	-	-	-
Total Fund Balances (Deficit)	1,614,617	74,802	46,438	422,989	1,377,778
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	1,632,857	167,523	201,296	424,384	1,377,778

CITY OF ALISO VIEJO

COMBINING BALANCE SHEET
NONMAJOR GOVERNMENTAL FUNDS (Continued)
June 30, 2025
(With Comparative Data for Prior Year)

	Special Revenue Funds			Capital Projects Funds	
	Federal Grants	Aquatic Center	AV Ranch Foundation	Capital Improvements	Storm Water
Assets:					
Cash and investments	-	81,979	100	26,691	2,072
Receivables:					
Accounts	-	7,195	-	-	-
Accrued interest	-	-	-	-	-
Due from other governments	150,415	-	-	-	5,048
Total Assets	150,415	89,174	100	26,691	7,120
Liabilities, Deferred Inflows of Resources, and Fund Balances:					
Liabilities:					
Accounts payable	11,627	57,309	-	26,691	7,120
Accrued liabilities	-	31,865	-	-	-
Due to other funds	138,758	-	-	-	-
Unearned revenue	-	-	-	-	-
Total Liabilities	150,385	89,174	-	26,691	7,120
Deferred Inflows of Resources:					
Unavailable revenues - grants	87,058	-	-	-	-
Fund Balances:					
Restricted for:					
Debt service	-	-	-	-	-
Community development projects	-	-	100	-	-
Public works	-	-	-	-	-
Public safety	-	-	-	-	-
Unassigned	(87,028)	-	-	-	-
Total Fund Balances (Deficit)	(87,028)	-	100	-	-
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	150,415	89,174	100	26,691	7,120

	Capital Projects Funds	Debt Service Funds		
	Street Improvements	Debt Service Fund	Totals 2025	2024
Assets:				
Cash and investments	121,306	298	9,924,664	7,578,076
Receivables:				
Accounts	-	-	25,089	19,669
Accrued interest	-	-	41,787	163,337
Due from other governments	-	-	929,058	794,035
Total Assets	121,306	298	10,920,598	8,555,117
Liabilities, Deferred Inflows of Resources, and Fund Balances:				
Liabilities:				
Accounts payable	121,306	-	334,910	420,359
Accrued liabilities	-	-	31,865	21,879
Due to other funds	-	-	175,939	200,411
Unearned revenue	-	-	209,026	139,546
Total Liabilities	121,306	-	751,740	782,195
Deferred Inflows of Resources:				
Unavailable revenues - grants	-	-	106,001	33,042
Fund Balances:				
Restricted for:				
Debt service	-	298	298	546
Community development projects	-	-	1,922,107	1,890,321
Public works	-	-	7,853,201	5,574,557
Public safety	-	-	374,279	288,518
Unassigned	-	-	(87,028)	(14,062)
Total Fund Balances (Deficit)	-	298	10,062,857	7,739,880
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	121,306	298	10,920,598	8,555,117

CITY OF ALISO VIEJO

COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE - NONMAJOR GOVERNMENTAL FUNDS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Special Revenue Funds				
	Traffic Congestion Relief	Gas Tax	Measure M	SB1 - RMRA	Public Safety Grants
Revenues:					
Intergovernmental	$ -	1,463,265	998,525	1,413,412	194,663
Charges for services	-	-	-	-	-
Use of money and property	3,362	52,567	91,148	90,930	16,507
Total Revenues	3,362	1,515,832	1,089,673	1,504,342	211,170
Expenditures:					
Current:					
General government	-	-	-	-	-
Community development	-	-	-	-	-
Public works	-	1,107,410	33,591	-	-
Public safety	-	-	-	-	125,409
Debt service:					
Principal payment	-	17,400	-	-	-
Interest expense	-	1,165	-	-	-
Total Expenditures	-	1,125,975	33,591	-	125,409
Excess (deficiency) of revenues over (under) expenditures	3,362	389,857	1,056,082	1,504,342	85,761
Other Financing Sources (Uses):					
Transfers in	-	-	-	-	-
Transfers out	-	-	(724,204)	(84,914)	-
Total Other Financing Sources (Uses)	-	-	(724,204)	(84,914)	-
Net change in fund balances	3,362	389,857	331,878	1,419,428	85,761
Fund balances (deficit), beginning of year	76,068	959,680	1,903,028	1,155,283	288,518
Fund balances (deficit), end of year	$ 79,430	1,349,537	2,234,906	2,574,711	374,279

	Special Revenue Funds				
	Air Quality Improvement	Integrated Waste Management	Other Grants	Technology Grants	Development Impact
Revenues:					
Intergovernmental	66,389	59,632	294,616	74,184	-
Charges for services	-	-	-	-	-
Use of money and property	67,730	6,593	3,056	17,224	-
Total Revenues	134,119	66,225	297,672	91,408	-
Expenditures:					
Current:					
General government	-	39,557	4,627	65,853	-
Community development	-	-	-	-	-
Public works	-	15,522	-	-	-
Public safety	-	-	-	-	-
Debt service:					
Principal payment	-	-	-	-	-
Interest expense	-	-	-	-	-
Total Expenditures	-	55,079	4,627	65,853	-
Excess (deficiency) of revenues over (under) expenditures	134,119	11,146	293,045	25,555	-
Other Financing Sources (Uses):					
Transfers in	-	-	-	-	-
Transfers out	-	(7,268)	(290,692)	-	-
Total Other Financing Sources (Uses)	-	(7,268)	(290,692)	-	-
Net change in fund balances	134,119	3,878	2,353	25,555	-
Fund balances (deficit), beginning of year	1,480,498	70,924	44,085	397,434	1,377,778
Fund balances (deficit), end of year	1,614,617	74,802	46,438	422,989	1,377,778

CITY OF ALISO VIEJO

COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE - NONMAJOR GOVERNMENTAL FUNDS (Continued)
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Special Revenue Funds			Capital Projects Funds	
	Federal Grants	Aquatic Center	AV Ranch Foundation	Capital Improvements	Storm Water
Revenues:					
Intergovernmental	126,549	-	-	-	-
Charges for services	-	839,745	-	-	-
Use of money and property	-	-	-	-	-
Total Revenues	126,549	839,745	-	-	-
Expenditures:					
Current:					
General government	711	-	-	-	-
Community development	60,523	1,003,373	-	-	-
Public works	-	-	-	296,746	14,833
Public safety	-	-	-	-	-
Debt service:					
Principal payment	-	-	-	-	-
Interest expense	-	-	-	-	-
Total Expenditures	61,234	1,003,373	-	296,746	14,833
Excess (deficiency) of revenues over (under) expenditures	65,315	(163,628)	-	(296,746)	(14,833)
Other Financing Sources (Uses):					
Transfers in	-	163,628	-	296,746	14,833
Transfers out	(138,281)	-	-	-	-
Total Other Financing Sources (Uses)	(138,281)	163,628	-	296,746	14,833
Net change in fund balances	(72,966)	-	-	-	-
Fund balances (deficit), beginning of year	(14,062)	-	100	-	-
Fund balances (deficit), end of year	(87,028)	-	100	-	-

	Capital Projects Funds	Debt Service Funds		
	Street Improvements	Debt Service Fund	Totals 2025	2024
Revenues:				
Intergovernmental	-	-	4,691,235	4,987,629
Charges for services	-	-	839,745	939,260
Use of money and property	-	304	349,421	1,042,416
Total Revenues	-	304	5,880,401	6,969,305
Expenditures:				
Current:				
General government	-	-	110,748	112,660
Community development	-	-	1,063,896	1,489,432
Public works	1,041,848	-	2,509,950	3,265,111
Public safety	-	-	125,409	120,798
Debt service:				
Principal payment	-	260,000	277,400	267,028
Interest expense	-	395,921	397,086	407,511
Total Expenditures	1,041,848	655,921	4,484,489	5,662,540
Excess (deficiency) of revenues over (under) expenditures	(1,041,848)	(655,617)	1,395,912	1,306,765
Other Financing Sources (Uses):				
Transfers in	1,041,848	655,369	2,172,424	2,356,447
Transfers out	-	-	(1,245,359)	(1,427,477)
Total Other Financing Sources (Uses)	1,041,848	655,369	927,065	928,970
Net change in fund balances	-	(248)	2,322,977	2,235,735
Fund balances (deficit), beginning of year	-	546	7,739,880	5,504,145
Fund balances, end of year	-	298	10,062,857	7,739,880

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
TRAFFIC CONGESTION RELIEF
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 76,068	76,068	76,068	-	60,982
Resources (Inflows):					
Use of money and property	8,600	8,600	3,362	(5,238)	15,086
Amount Available for Appropriations	84,668	84,668	79,430	(5,238)	76,068
Charges to Appropriations (Outflows):					
Transfers out	-	-	-	-	-
Total Charges to Appropriations	-	-	-	-	-
Fund Balances - Ending	$ 84,668	84,668	79,430	(5,238)	76,068

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
GAS TAX
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 959,680	959,680	959,680	-	643,272
Resources (Inflows):					
Intergovernmental	1,407,500	1,407,500	1,463,265	55,765	1,424,565
Use of money and property	129,200	129,200	52,567	(76,633)	203,094
Amounts Available for Appropriations	2,496,380	2,496,380	2,475,512	(20,868)	2,270,931
Charges to Appropriations (Outflows):					
Public works	1,142,800	1,142,800	1,107,410	35,390	1,292,686
Debt Service:					
Principal payment	-	-	17,400	(17,400)	17,028
Interest payment	-	-	1,165	(1,165)	1,537
Total Charges to Appropriations	1,142,800	1,142,800	1,125,975	16,825	1,311,251
Fund Balances - Ending	$ 1,353,580	1,353,580	1,349,537	(4,043)	959,680

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
MEASURE M
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 1,903,028	1,903,028	1,903,028	-	890,040
Resources (Inflows):					
Intergovernmental	1,039,971	1,039,971	998,525	(41,446)	975,467
Use of money and property	179,000	179,000	91,148	(87,852)	244,678
Amount Available for Appropriations	3,121,999	3,121,999	2,992,701	(129,298)	2,110,185
Charges to Appropriations (Outflows):					
Public works	50,000	50,000	33,591	16,409	27,482
Transfers out	1,000,000	1,252,129	724,204	527,925	179,675
Total Charges to Appropriations	1,050,000	1,302,129	757,795	544,334	207,157
Fund Balances - Ending	$ 2,071,999	1,819,870	2,234,906	415,036	1,903,028

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
SB1 - RMRA
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 1,155,283	1,155,283	1,155,283	-	651,355
Resources (Inflows):					
Intergovernmental	1,326,913	1,326,913	1,413,412	86,499	1,337,992
Use of money and property	139,000	139,000	90,930	(48,070)	153,164
Amount Available for Appropriations	2,621,196	2,621,196	2,659,625	38,429	2,142,511
Charges to Appropriations (Outflows):					
Transfers out	1,270,000	1,270,000	84,914	1,185,086	987,228
Total Charges to Appropriations	1,270,000	1,270,000	84,914	1,185,086	987,228
Fund Balances - Ending	$ 1,351,196	1,351,196	2,574,711	1,223,515	1,155,283

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
PUBLIC SAFETY GRANTS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - beginning	$ 288,518	288,518	288,518	-	171,447
Resources (Inflows):					
Intergovernmental	185,000	185,000	194,663	9,663	186,159
Use of money and property	36,000	36,000	16,507	(19,493)	51,710
Amount Available for Appropriations	509,518	509,518	499,688	(9,830)	409,316
Charges to Appropriations (Outflows):					
Public safety	178,743	178,743	125,409	53,334	120,798
Total Charges to Appropriations	178,743	178,743	125,409	53,334	120,798
Fund Balances - Ending	$ 330,775	330,775	374,279	43,504	288,518

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
AIR QUALITY IMPROVEMENT
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 1,480,498	1,480,498	1,480,498	-	1,145,742
Resources (Inflows):					
Intergovernmental	65,000	65,000	66,389	1,389	51,207
Use of money and property	164,000	164,000	67,730	(96,270)	283,549
Amount Available for Appropriations	1,709,498	1,709,498	1,614,617	(94,881)	1,480,498
Charges to Appropriations (Outflows):					
General government	150,000	150,000	-	150,000	-
Total Charges to Appropriations	150,000	150,000	-	-	-
Fund Balances - Ending	$ 1,559,498	1,559,498	1,614,617	55,119	1,480,498

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
INTEGRATED WASTE MANAGEMENT
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 70,924	70,924	70,924	-	88,400
Resources (Inflows):					
Intergovernmental	13,000	13,000	59,632	46,632	13,043
Use of money and property	7,200	7,200	6,593	(607)	20,392
Amount Available for Appropriations	91,124	91,124	137,149	46,025	121,835
Charges to Appropriations (Outflows):					
General government	139,546	139,546	39,557	99,989	17,216
Public works	16,000	16,000	15,522	478	6,925
Transfers out	-	-	7,268	(7,268)	26,770
Total Charges to Appropriations	16,000	155,546	62,347	93,199	50,911
Fund Balances - Ending	$ 75,124	(64,422)	74,802	139,224	70,924

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
OTHER GRANTS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances (Deficit) - Beginning	$ 44,085	44,085	44,085	-	(178,246)
Resources (Inflows):					
Intergovernmental	200,000	200,000	294,616	94,616	350,676
Use of money and property	-	-	3,056	3,056	-
Amount Available for Appropriations	244,085	244,085	341,757	97,672	172,430
Charges to Appropriations (Outflows):					
General government	-	5,500	4,627	873	23,793
Transfers out	200,000	270,000	290,692	(20,692)	104,552
Total Charges to Appropriations	200,000	275,500	295,319	(19,819)	128,345
Fund Balances (Deficit) - Ending	$ 44,085	(31,415)	46,438	77,853	44,085

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
TECHNOLOGY GRANTS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 397,434	397,434	397,434	-	290,079
Resources (Inflows):					
Intergovernmental	78,000	78,000	74,184	(3,816)	81,921
Use of money and property	42,000	42,000	17,224	(24,776)	70,196
Amount Available for Appropriations	517,434	517,434	488,842	(28,592)	442,196
Charges to Appropriations (Outflows):					
General government	97,580	97,580	65,853	31,727	44,762
Total Charges to Appropriations	97,580	97,580	65,853	31,727	44,762
Fund Balances - Ending	$ 419,854	419,854	422,989	3,135	397,434

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
DEVELOPMENT IMPACT
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ 1,377,778	1,377,778	1,377,778	-	1,377,778
Resources (Inflows):					
Use of money and property	-	-	-	-	-
Transfers in	-	-	-	-	-
Amount Available for Appropriations	1,377,778	1,377,778	1,377,778	-	1,377,778
Charges to Appropriations (Outflows):					
General government	-	-	-	-	-
Total Charges to Appropriations	-	-	-	-	-
Fund Balances - Ending	$ 1,377,778	1,377,778	1,377,778	-	1,377,778

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
FEDERAL GRANTS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances (Deficit) - Beginning	$ (14,062)	(14,062)	(14,062)	-	(33,600)
Resources (Inflows):					
Intergovernmental	710,054	710,054	126,549	(583,505)	566,599
Amount Available for Appropriations	695,992	695,992	112,487	(583,505)	532,999
Charges to Appropriations (Outflows):					
General government	-	-	711	(711)	26,889
Community development	263,373	263,373	60,523	202,850	390,920
Transfer out	446,681	446,681	138,281	308,400	129,252
Total Charges to Appropriations	710,054	710,054	199,515	510,539	547,061
Fund Balances (Deficit) - Ending	$ (14,062)	(14,062)	(87,028)	(72,966)	(14,062)

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
AQUATIC CENTER
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ -	-	-	-	-
Resources (Inflows):					
Charges for services	1,005,248	1,005,248	839,745	(165,503)	939,260
Transfers in	201,402	201,402	163,628	(37,774)	159,252
Amounts Available for Appropriations	1,206,650	1,206,650	1,003,373	(203,277)	1,098,512
Charges to Appropriations (Outflows):					
Community services	1,206,650	1,206,650	1,003,373	203,277	1,098,512
Total Charges to Appropriations	1,206,650	1,206,650	1,003,373	203,277	1,098,512
Fund Balances - Ending	$ -	-	-	-	-

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
CAPITAL IMPROVEMENTS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ -	-	-	-	-
Resources (Inflows):					
Transfers in	651,000	679,000	296,746	(382,254)	362,273
Amount Available for Appropriations	651,000	679,000	296,746	(382,254)	362,273
Charges to Appropriations (Outflows):					
Public works	651,000	679,000	296,746	382,254	362,273
Total Charges to Appropriations	651,000	679,000	296,746	382,254	362,273
Fund Balances - Ending	$ -	-	-	-	-

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
STORM WATER
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ -	-	-	-	-
Resources (Inflows):					
Transfers in	20,000	20,000	14,833	(5,167)	9,883
Amount Available for Appropriations	20,000	20,000	14,833	(5,167)	9,883
Charges to Appropriations (Outflows):					
Public works	20,000	20,000	14,833	5,167	9,883
Total Charges to Appropriations	20,000	20,000	14,833	5,167	9,883
Fund Balances - Ending	$ -	-	-	-	-

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
STREET IMPROVEMENTS
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances - Beginning	$ -	-	-	-	396,618
Resources (Inflows):					
Transfer in	2,720,581	2,972,710	1,041,848	(1,930,862)	1,169,244
Amount Available for Appropriations	2,720,581	2,972,710	1,041,848	(1,930,862)	1,565,862
Charges to Appropriations (Outflows):					
Public works	2,720,581	2,972,710	1,041,848	1,930,862	1,565,862
Total Charges to Appropriations	2,720,581	2,972,710	1,041,848	1,930,862	1,565,862
Fund Balances - Ending	$ -	-	-	-	-

CITY OF ALISO VIEJO

BUDGETARY COMPARISON SCHEDULE
DEBT SERVICE
FOR THE YEAR ENDED JUNE 30, 2025
(With Comparative Data for Prior Year)

	Budget Amounts		Actual	Variance with Final Budget Positive	Prior Year
	Original	Final	Amounts	(Negative)	Actual
Fund Balances (Deficit) - Beginning	$ 546	546	546	-	178
Resources (Inflows):					
Use of money and property	-	-	304	304	547
Transfer in	658,050	658,050	655,369	(2,681)	655,795
Amount Available for Appropriations	658,596	658,596	656,219	(2,377)	656,520
Charges to Appropriations (Outflows):					
Principal	260,000	260,000	260,000	-	250,000
Interest	398,050	398,050	395,921	2,129	405,974
Total Charges to Appropriations	658,050	658,050	655,921	2,129	655,974
Fund Balances - Ending	$ 546	546	298	(248)	546

STATISTICAL SECTION

This part of the City of Aliso Viejo's Annual Comprehensive Financial Report (ACFR) presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information say about the government's overall financial health.

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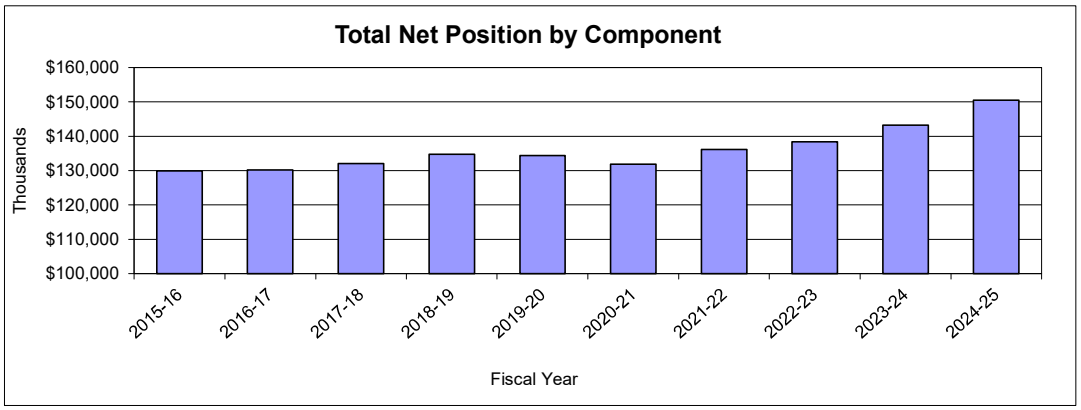
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CITY OF ALISO VIEJO

NET POSITION BY COMPONENT
LAST TEN FISCAL YEARS

	Fiscal Years				
	2015-16	2016-17	2017-18	2018-19	2019-20
Governmental Activities					
Net Investment in Capital Assets	$ 94,579,142	$ 95,000,131	$ 94,791,785	$ 95,555,817	$ 93,873,835
Restricted					
Community Development	279,027	(34,396)	203,708	334,190	2,891,135
Community Services	-	-	-	-	-
Public Works	11,840,453	8,299,848	7,637,647	8,536,428	122,819
Public Safety	12,953	39,957	83,097	105,213	4,121,343
Debt Service	-	-	-	-	4,319,695
Unrestricted	23,233,017	26,937,175	29,312,285	30,211,693	29,006,434
Total governmental activities net position	$ 129,944,592	$ 130,242,715	$ 132,028,522	$ 134,743,341	$ 134,335,261

	Fiscal Years				
	2020-21	2021-22	2022-23	2023-24	2024-25
Governmental Activities					
Net Investment in Capital Assets	$ 101,009,829	$ 100,348,736	$ 99,883,422	$ 99,321,092	$ 97,997,803
Restricted					
Community Development	1,579,149	1,721,020	1,756,357	1,890,321	1,922,107
Community Services	19,500	-	-	-	-
Public Works	3,498,519	3,990,740	3,258,360	5,343,323	7,926,160
Public Safety	125,356	129,019	171,447	288,518	374,279
Debt Service	-	-	-	-	-
Unrestricted	25,601,465	29,924,478	33,277,156	36,419,134	42,275,760
Total governmental activities net position	$ 131,833,818	$ 136,113,993	$ 138,346,742	$ 143,262,388	$ 150,496,109

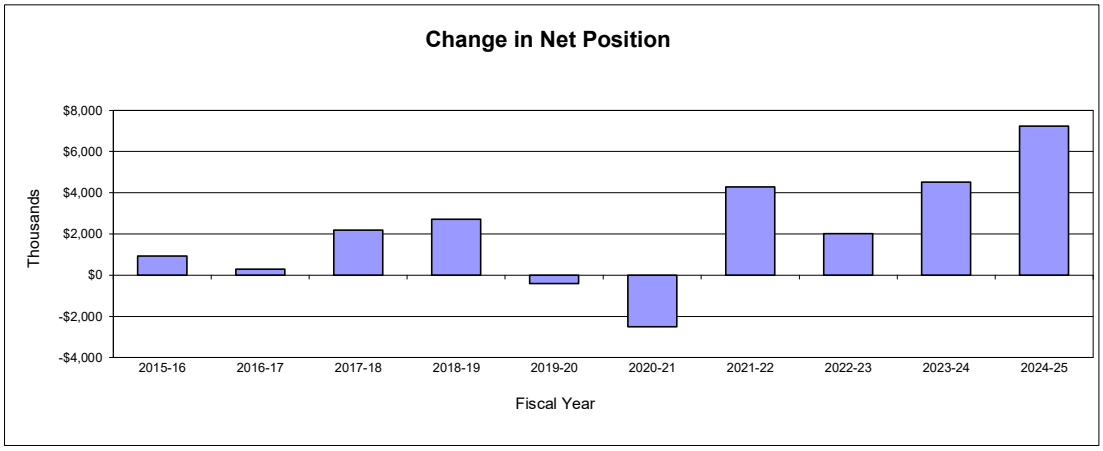


Source: City Finance Department

CITY OF ALISO VIEJO

CHANGE IN NET POSITION
LAST TEN FISCAL YEARS

	Fiscal Years									
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Revenues										
Program Revenues										
Charges for Services	$ 2,654,055	$ 3,474,104	$ 4,202,366	$ 3,836,994	$ 3,070,201	$ 4,001,459	$ 5,742,780	$ 7,694,422	$ 7,731,011	$ 7,205,235
Operating Contributions & Grants	2,770,178	3,672,804	2,805,856	5,171,638	4,342,486	4,852,523	6,945,042	6,932,234	5,427,985	4,962,919
Capital Contributions & Grants	18,875	17,831	-	-	9,600	-	-	-	-	-
Taxes										
Sales Tax	4,601,042	6,236,832	6,545,732	6,128,143	4,765,921	3,524,908	6,117,932	6,244,171	8,359,623	11,154,921
Property Tax	7,317,139	7,503,432	7,936,613	8,211,394	8,647,685	8,981,521	9,211,738	9,459,526	9,911,103	10,287,203
Franchise Fees	1,573,339	1,507,041	1,577,213	1,829,070	1,729,418	1,672,280	1,744,239	1,884,639	1,875,533	1,813,044
Transient Occupancy Tax	1,108,102	1,606,165	1,696,598	1,640,628	1,220,997	723,599	1,413,074	1,570,525	1,570,575	1,699,738
Other Intergovernmental, unrestricted	20,256	22,627	26,483	24,936	40,659	36,704	57,547	53,145	64,044	81,664
Use of Money and Property	328,416	324,781	402,978	790,051	1,053,024	377,709	(153,060)	656,151	1,207,332	1,621,512
Other	195,831	186,455	191,376	174,274	292,184	292,095	118,665	332,325	747,990	378,730
Total Revenues	20,587,233	24,552,072	25,385,215	27,807,128	25,172,175	24,462,798	31,197,957	34,827,138	36,895,196	39,204,966
Expenses										
General Government	3,459,012	4,139,974	4,418,462	4,725,232	4,878,395	5,621,731	4,943,476	6,019,844	6,125,440	5,363,026
Community Services	2,982,463	3,433,106	3,771,964	3,878,633	3,433,830	1,754,782	5,264,667	2,817,896	2,730,921	2,755,431
Community Development	1,450,043	3,824,732	1,735,901	1,601,865	1,830,144	3,695,994	1,244,026	6,190,570	7,679,606	8,399,470
Public Works	4,038,360	4,484,898	4,444,500	5,924,079	5,631,039	6,016,332	5,473,152	7,161,695	5,310,206	4,500,614
Public Safety	7,723,449	8,371,239	8,831,639	8,962,500	9,312,287	9,480,235	9,601,888	10,224,474	10,147,491	10,585,244
Interest and Fiscal Charges	-	-	-	-	494,561	395,167	390,573	387,579	382,504	367,460
Total Expense	19,653,327	24,253,949	23,202,466	25,092,309	25,580,256	26,964,241	26,917,782	32,802,058	32,376,168	31,971,245
Change in Net Position	$ 933,906	$ 298,123	$ 2,182,749	$ 2,714,819	$ (408,080)	$ (2,501,442)	$ 4,280,175	$ 2,025,080	$ 4,519,028	$ 7,233,721



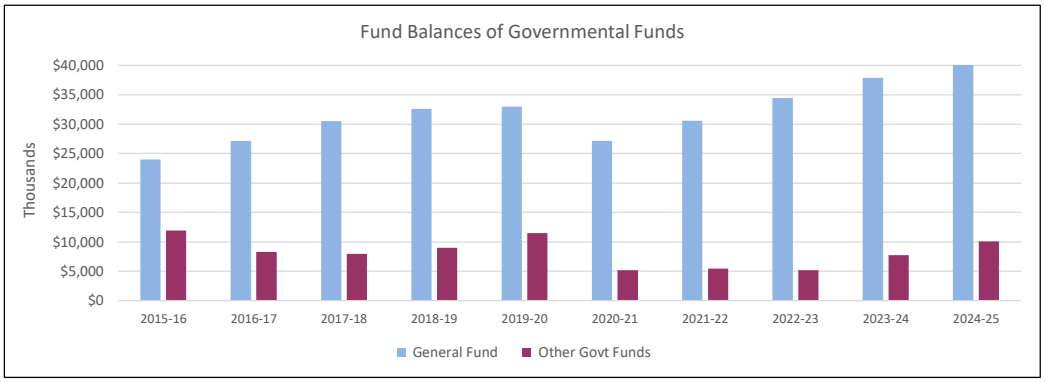
Source: City Finance Department

CITY OF ALISO VIEJO

FUND BALANCES OF GOVERNMENTAL FUNDS
LAST TEN FISCAL YEARS

	Fiscal Years				
	2015-16	2016-17	2017-18	2018-19	2019-20
General Fund Balances					
Nonspendable:					
Prepaid	$ 187,681	$ 231,198	$ 206,488	$ 222,029	$ 236,326
Assigned to:					
Contingencies	4,351,653	4,681,192	4,700,000	2,963,795	2,860,265
Self Insurance/benefit obligations	724,000	1,200,000	1,200,000	900,000	1,445,475
Asset Replacement	9,850,000	10,044,448	10,000,000	9,700,000	9,096,430
Emergencies & Unanticipated Traffic Projects	1,500,000	1,500,000	1,500,000	15,000,000	15,000,000
800 MHZ Upgrade & Replacement	-	-	-		-
Long Term Debt	-	-	-		
Unassigned:	7,374,518	9,509,904	12,935,238	3,811,349	4,332,263
Total General Fund	$ 23,987,852	$ 27,166,742	$ 30,541,726	$ 32,597,173	$ 32,970,759
All other governmental funds					
Nonspendable:					
Prepaid	$ 14,127	$ 25,041	$ -	$ -	$ -
Assigned to:					
Emergencies & Unanticipated Traffic Projects	-	-	-		
Restricted for:					
Community Development Projects	278,992	19,736	203,708	334,190	2,891,135
Community Services	-	-	-	-	-
Public Safety	-	39,957	83,097	105,213	122,819
Capital Projects	11,853,406	8,299,848	7,637,647	8,536,428	4,121,343
Aliso Viejo Center					
Debt Service	-	-	-		4,319,695
Unassigned:	(198,271)	(79,173)	-	-	-
Total All Other Governmental Funds	$ 11,948,254	$ 8,305,409	$ 7,924,452	$ 8,975,831	$ 11,454,992

	Fiscal Years				
	2020-21	2021-22	2022-23	2023-24	2024-25
General Fund Balances					
Nonspendable:					
Prepaid	$ 76,150	$ 81,267	$ 55,046	$ 18,987	$ -
Assigned to:					
Contingencies	2,649,388	3,500,571	3,498,990	3,995,400	4,019,350
Self Insurance/benefit obligations	1,150,474	600,000	600,000	600,000	1,000,000
Asset Replacement	8,317,710	11,882,444	13,173,633	13,953,003	14,318,164
Emergencies & Unanticipated Traffic Projects	15,000,000	10,000,000	11,266,779	12,655,368	15,726,222
800 MHZ Upgrade & Replacement	-	-	-		
Unassigned:	(62,559)	4,515,886	5,831,651	6,659,000	9,378,500
Total General Fund	$ 27,131,163	$ 30,580,168	$ 34,426,099	$ 37,881,758	$ 44,442,236
All other governmental funds					
Nonspendable:					
Prepaid	$ -	$ -	$ 8,479	$ 6,411	$ 5,885
Assigned to:					
Emergencies & Unanticipated Traffic Projects					
Restricted for:					
Community Development Projects	1,579,149	1,721,020	1,756,357	1,890,321	1,922,107
Community Services	19,500	-	-	-	-
Public Safety	125,356	129,019	171,447	288,518	374,279
Public Works	-	3,990,740	3,391,391	5,574,557	7,853,201
Aliso Viejo Center			51,759	-	
Debt Service	3,498,519	-	178	546	298
Unassigned:	(38,333)	(403,015)	(211,846)	(20,473)	(92,913)
Total All Other Governmental Funds	$ 5,184,191	$ 5,437,764	$ 5,167,765	$ 7,739,880	$ 10,062,857

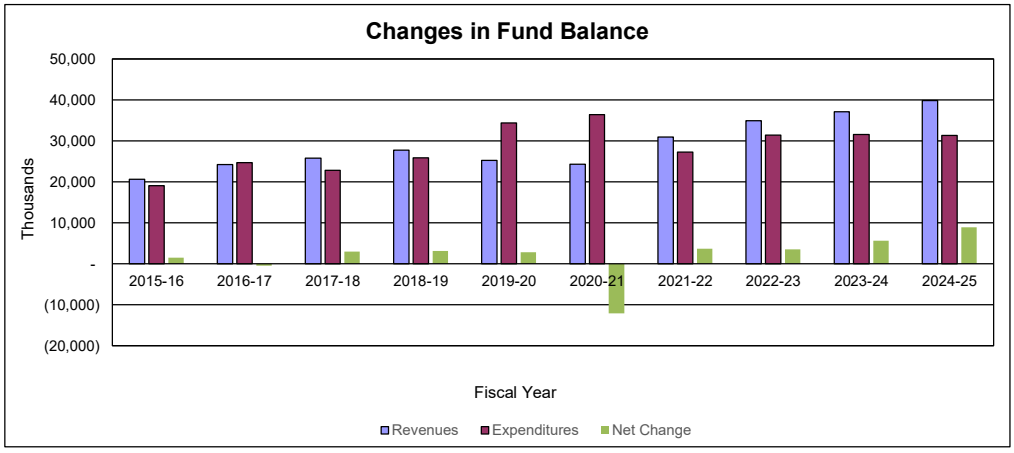


Source: City Finance Department

CITY OF ALISO VIEJO

CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS
LAST TEN FISCAL YEARS

	Fiscal Years									
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Revenues										
Taxes	$ 14,629,530	$ 16,884,140	$ 17,777,707	$ 17,704,139	$ 16,270,976	$ 14,823,926	$ 18,420,699	$ 19,063,829	$ 21,634,913	$ 24,880,722
Licenses and Permits	694,054	664,202	957,209	706,764	719,720	976,781	714,168	876,079	785,623	1,227,832
Intergovernmental	2,617,535	2,585,675	2,963,077	4,218,802	4,208,995	3,987,463	6,674,078	7,192,158	5,144,240	4,804,425
Charges for Services	1,639,479	2,519,225	2,864,619	2,639,775	2,047,978	2,198,864	3,636,265	5,656,340	5,670,987	4,892,245
Use of Money and Property	358,917	359,023	524,729	1,152,130	1,258,109	1,068,212	867,839	689,647	1,960,825	2,657,359
Fines and Forfeitures	312,400	282,322	300,988	307,513	275,229	310,419	173,133	227,896	296,431	293,288
Developer Fees	30,500	536,182	-	715,000	9,600	585,000	-	-	-	-
Contributions	-	-	-	-	-	100,000	50	6,300	-	-
Other	325,612	387,838	421,734	333,252	423,194	253,836	494,407	1,247,920	1,633,393	1,139,074
Total Revenues	20,608,027	24,218,607	25,810,063	27,777,375	25,213,801	24,304,501	30,980,639	34,960,169	37,126,412	39,894,945
Expenditures										
General Government	3,079,528	3,797,104	3,907,504	4,368,307	4,370,213	5,110,883	4,463,657	5,026,792	5,172,310	4,855,300
Community Development	4,485,482	7,267,554	5,479,501	5,504,012	5,177,202	5,381,558	7,654,266	9,176,591	10,473,707	10,956,024
Public Works	3,557,336	3,605,820	3,962,004	5,441,582	5,148,542	5,531,650	4,988,268	6,266,437	4,989,699	4,178,222
Public Safety	7,677,426	8,030,234	8,730,712	8,844,067	9,170,586	9,358,289	9,505,403	10,162,083	10,126,196	10,587,544
Capital Outlay	292,742	1,981,850	736,315	1,723,775	10,006,820	10,375,082	23,131	92	-	
Debt Service										
Principal	-	-	-	-	-	230,000	243,625	332,486	444,071	400,457
Interest	-	-	-	-	494,561	427,436	422,842	419,756	414,773	399,729
Other Charges	-	-	-	-	-	-	-	-	-	-
Total Expenditures	19,092,514	24,682,562	22,816,036	25,881,743	34,367,924	36,414,898	27,301,192	31,384,237	31,620,756	31,377,276
Excess of Revenues over Expenditures	1,515,513	(463,955)	2,994,027	1,895,632	(9,154,123)	(12,110,397)	3,679,447	3,575,932	5,505,656	8,517,669
Other Financing Sources (Uses)										
Transfers In	2,040,859	3,517,923	2,548,103	3,708,774	13,309,198	14,573,345	6,235,970	8,062,610	3,911,666	3,046,538
Transfers Out	(2,040,859)	(3,517,923)	(2,548,103)	(3,708,774)	(13,309,198)	(14,573,345)	(6,235,970)	(8,062,610)	(3,911,666)	(3,046,538)
Bonds Issued**	-			1,211,194	12,006,870	-	23,131	-	-	
Lease Acquisition	-	-	-	-	-	-	-	-	39,681	-
SBITA Acquisition									85,819	365,786
Total Other Financing Sources (Uses)	-	-	-	1,211,194	12,006,870	-	23,131	-	125,500	365,786
Net Change in Fund Bal.	$ 1,515,513	$ (463,955)	$ 2,994,027	$ 3,106,826	$ 2,852,747	$ (12,110,397)	$ 3,702,578	$ 3,575,932	$ 5,631,156	$ 8,883,455
Debt Service as a % of Noncapital Expenditures	0.00%	0.00%	0.00%	0.00%	2.03%	2.52%	2.44%	2.41%	2.73%	2.56%



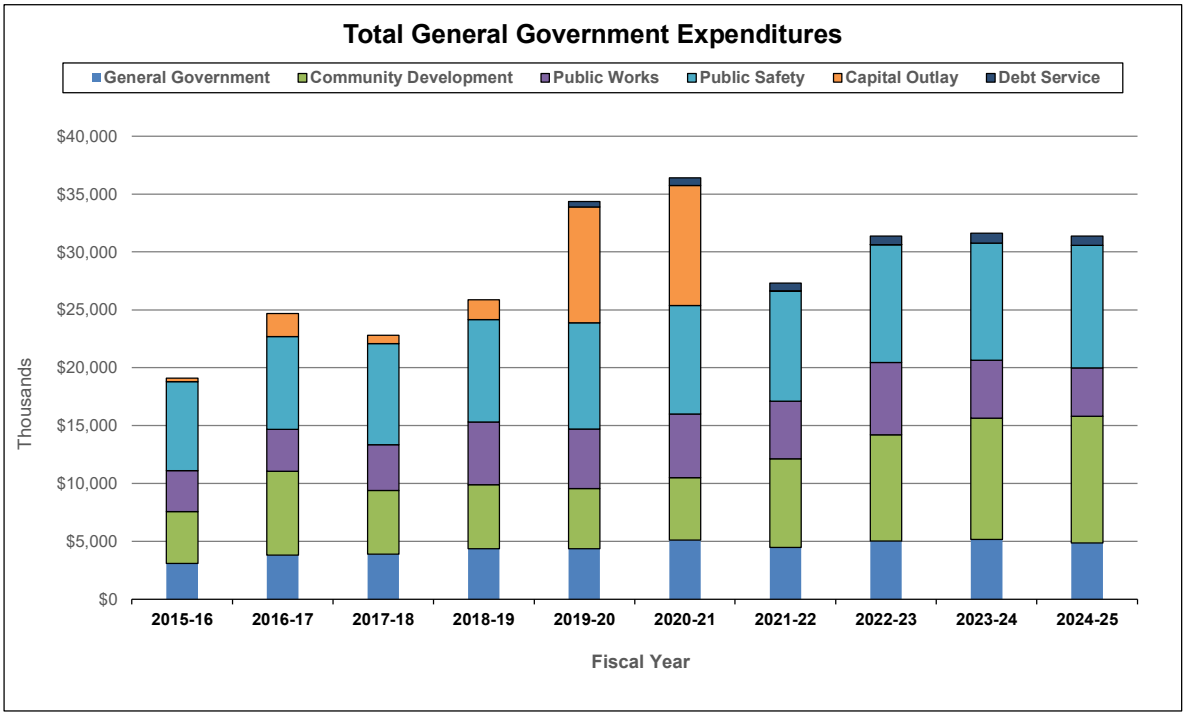
***In anticipation of the issuance of tax-exempt obligations for the Aliso Viejo Ranch project, the City Council passed a reimbursement resolution on February 20, 2019. The resolution would allow the City to reimburse itself for expenditures relating to the Aliso Viejo Ranch Project. On August 13, 2019, the City issued $12,250,000 of tax-exempt Certificates of Participation to*

Source: City Finance Department

CITY OF ALISO VIEJO

GENERAL GOVERNMENT - EXPENDITURES BY FUNCTION
LAST TEN FISCAL YEARS

Fiscal Year	General Government	Community Development	Public Works	Public Safety	Capital Outlay	Debt Service	Total
2015-16	3,079,528	4,485,482	3,557,336	7,677,426	292,742	-	19,092,514
2016-17	3,797,104	7,267,554	3,605,820	8,030,234	1,981,850	-	24,682,562
2017-18	3,907,504	5,479,501	3,962,004	8,730,712	736,315	-	22,816,036
2018-19	4,368,307	5,504,012	5,441,582	8,844,067	1,723,775	-	25,881,743
2019-20	4,370,213	5,177,202	5,148,542	9,170,586	10,006,820	494,561	34,367,924
2020-21	5,110,883	5,381,558	5,531,650	9,358,289	10,375,082	657,436	36,414,898
2021-22	4,463,657	7,654,266	4,988,268	9,505,403	23,131	666,467	27,301,192
2022-23	5,026,792	9,176,591	6,266,437	10,162,083	92	752,242	31,384,237
2023-24	5,172,310	10,473,707	4,989,699	10,126,196	-	858,844	31,620,756
2024-25	4,855,300	10,956,024	4,178,222	10,587,544		800,186	31,377,276

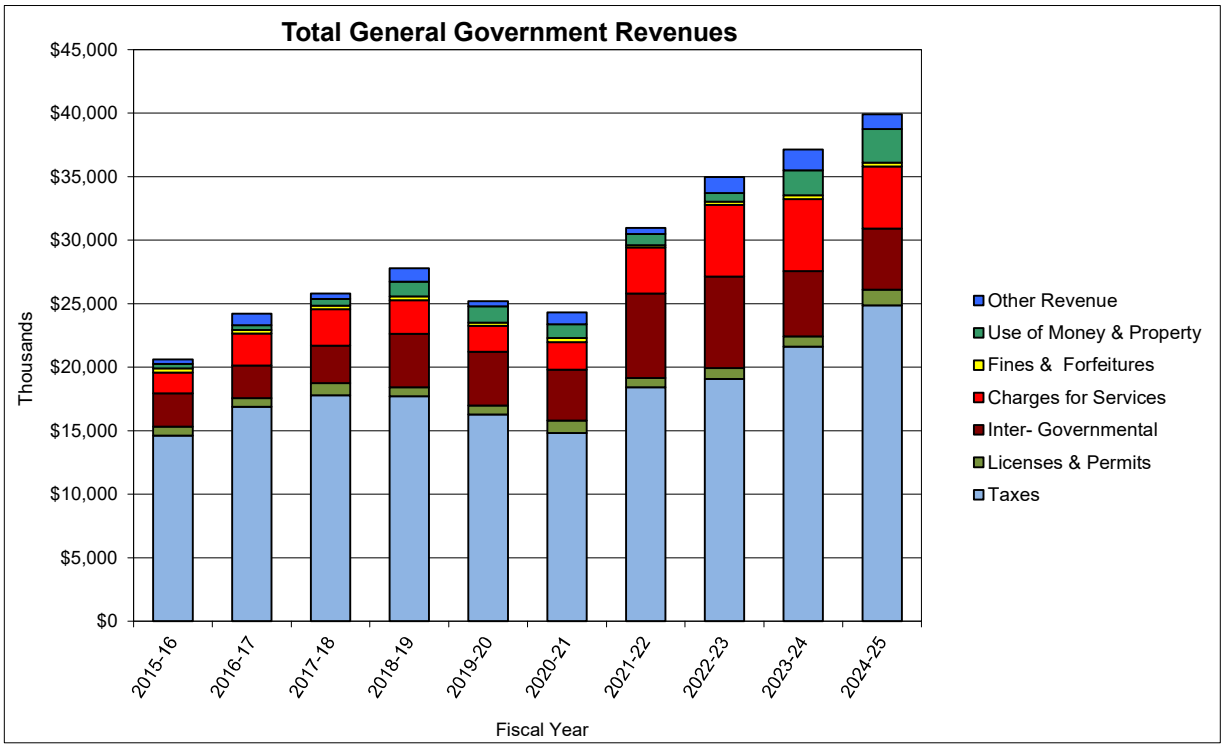


Source: City Finance Department

CITY OF ALISO VIEJO

GENERAL GOVERNMENT - REVENUES BY SOURCE
LAST TEN FISCAL YEARS

Fiscal Year	Taxes	Licenses & Permits	Inter-Governmental	Charges for Services	Fines & Forfeitures	Use of Money & Property	Other Revenue	Total
2015-16	14,629,530	694,054	2,617,535	1,639,479	312,400	358,917	356,112	20,608,027
2016-17	16,884,140	664,202	2,585,675	2,519,225	282,322	359,023	924,020	24,218,607
2017-18	17,777,707	957,209	2,963,077	2,864,619	300,988	524,729	421,734	25,810,063
2018-19	17,704,139	706,763	4,218,802	2,639,775	307,513	1,152,130	1,048,252	27,777,374
2019-20	16,270,976	719,720	4,208,995	2,047,978	275,229	1,258,109	432,794	25,213,801
2020-21	14,823,926	976,781	3,987,463	2,198,864	310,419	1,068,212	938,836	24,304,501
2021-22	18,420,699	714,168	6,674,078	3,636,265	173,133	867,839	494,457	30,980,639
2022-23	19,063,829	876,079	7,192,158	5,656,341	227,896	689,647	1,254,220	34,960,170
2023-24	21,634,913	785,623	5,144,241	5,670,987	296,430	1,960,825	1,633,393	37,126,412
2024-25	24,880,722	1,227,832	4,804,425	4,892,245	293,288	2,657,359	1,139,074	39,894,945



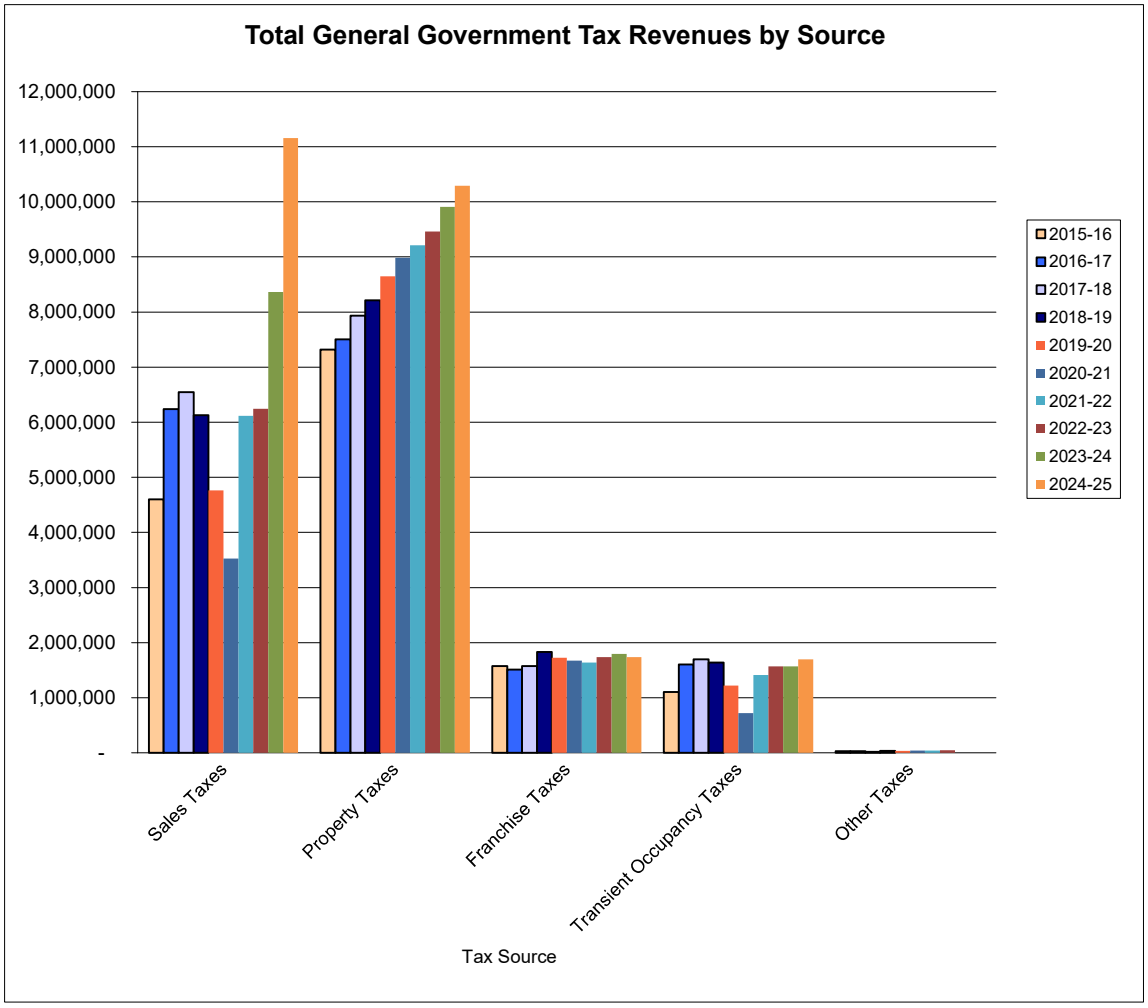
*** Includes General and Special Revenue Funds.*

Source: City Finance Department

CITY OF ALISO VIEJO

GENERAL GOVERNMENT - TAX REVENUES BY SOURCE
LAST TEN FISCAL YEARS

Fiscal Year	Sales Taxes	Property Taxes	Franchise Taxes	Transient Occupancy Taxes	Other Taxes	Total
2015-16	4,601,042	7,317,139	1,573,339	1,108,102	29,908	14,629,530
2016-17	6,236,832	7,503,432	1,507,041	1,606,165	30,670	16,884,140
2017-18	6,545,732	7,936,613	1,577,213	1,696,598	21,551	17,777,707
2018-19	6,128,143	8,211,394	1,829,070	1,640,628	38,167	17,847,402
2019-20	4,765,921	8,647,685	1,729,418	1,220,997	38,127	16,402,148
2020-21	3,524,908	8,981,521	1,672,280	723,599	41,577	14,943,885
2021-22	6,117,932	9,211,738	1,636,741	1,413,074	41,215	18,420,700
2022-23	6,244,171	9,459,526	1,741,999	1,570,524	47,608	19,063,828
2023-24	8,359,623	9,911,103	1,793,611	1,570,575	-	21,634,914
2024-25	11,154,921	10,287,202	1,738,861	1,699,738		24,880,722

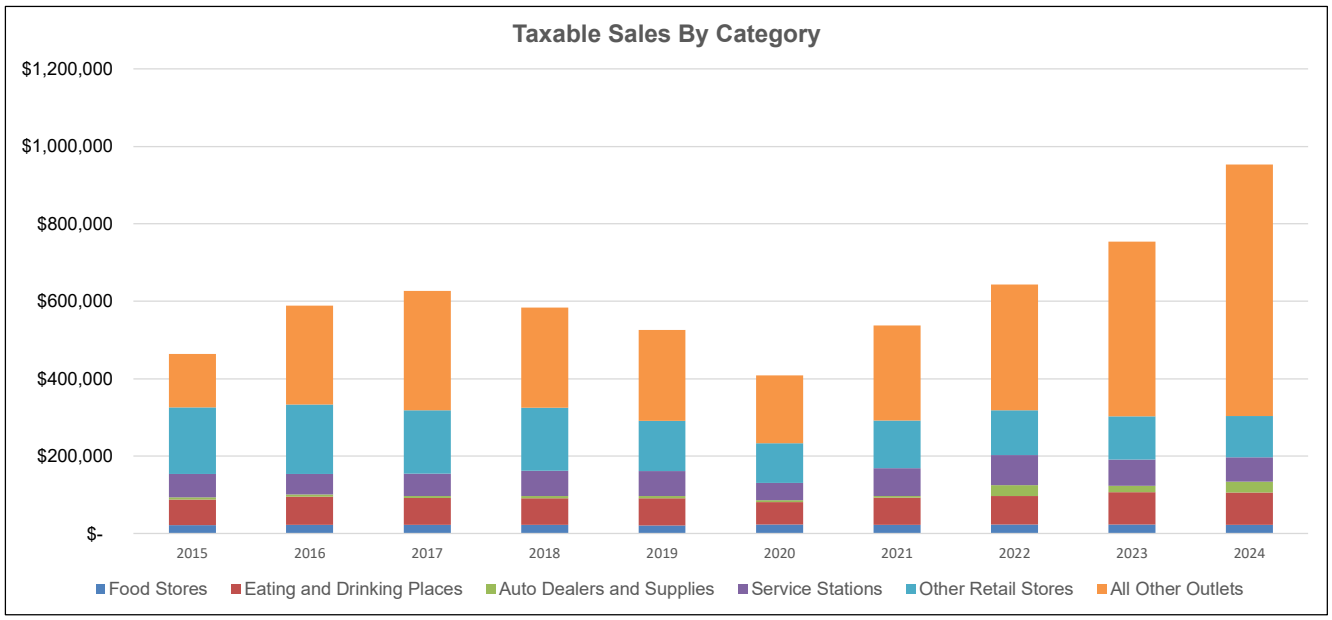


Source: City Finance Department

CITY OF ALISO VIEJO

TAXABLE SALES TAX PRODUCERS BY CATEGORY (IN THOUSANDS)
LAST TEN CALENDAR YEARS
ADJUSTED FOR ECONOMIC DATA

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Food Stores	$ 21,587	$ 22,672	$ 22,453	$ 22,417	$ 21,288	$ 23,954	$ 22,567	$ 23,046	$ 23,494	$ 22,644
Eating and Drinking Places	66,137	72,600	69,534	69,064	69,455	57,067	69,742	74,551	83,334	83,996
Auto Dealers and Supplies	6,053	6,033	5,448	5,433	6,528	5,259	5,192	27,383	16,969	27,264
Service Stations	60,348	52,608	57,190	65,193	64,494	44,967	71,167	78,034	67,735	63,199
Other Retail Stores	171,471	179,085	163,417	163,108	129,681	102,070	123,703	115,311	111,582	106,570
All Other Outlets	138,184	256,150	309,236	259,056	234,612	175,858	245,737	325,395	450,913	649,598
Total	$ 463,780	$ 589,148	$ 627,278	$ 584,271	$ 526,058	$ 409,175	$ 538,108	$ 643,720	$ 754,027	$ 953,271



Source: State Board of Equalization, California Department of Taxes and Fees Administration, State Controller's Office, The HdL Companies

CITY OF ALISO VIEJO

TOP 25 SALES TAX PRODUCERS
LAST TEN CALENDAR YEARS

2024

Business Name	Business Category
76	Service Stations
Barnes & Noble	Stationery/Book Stores
Chevron	Service Stations
Chevron	Service Stations
Chevron	Service Stations
Chick Fil A	Quick Service Restaurants
Circle K/Mobil	Service Stations
CVS Pharmacy	Drug Stores
Efuel	Petroleum Prod/Equipment
Hunt & Sons	Petroleum Prod/Equipment
KR Services 76	Service Stations
Metagenics	Drugs/Chemicals
Microvention	Medical/Biotech
Pepsico Beverage Sales	Food Service Equip./Supplies
Petsmart	Specialty Stores
Raising Cane's	Quick Service Restaurants
Ralphs	Grocery Stores
Rxsight	Medical/Biotech
Shell	Services Stations
Stater Bros	Grocery Stores
Target	Discount Dept Stores
Tesla Collision Aliso Viejo	New Motor Vehicle Dealers
TJ Maxx	Family Apparel
Trader Joe's	Grocery Stores
Trucker Tire	Automotive Supply Stores

2015

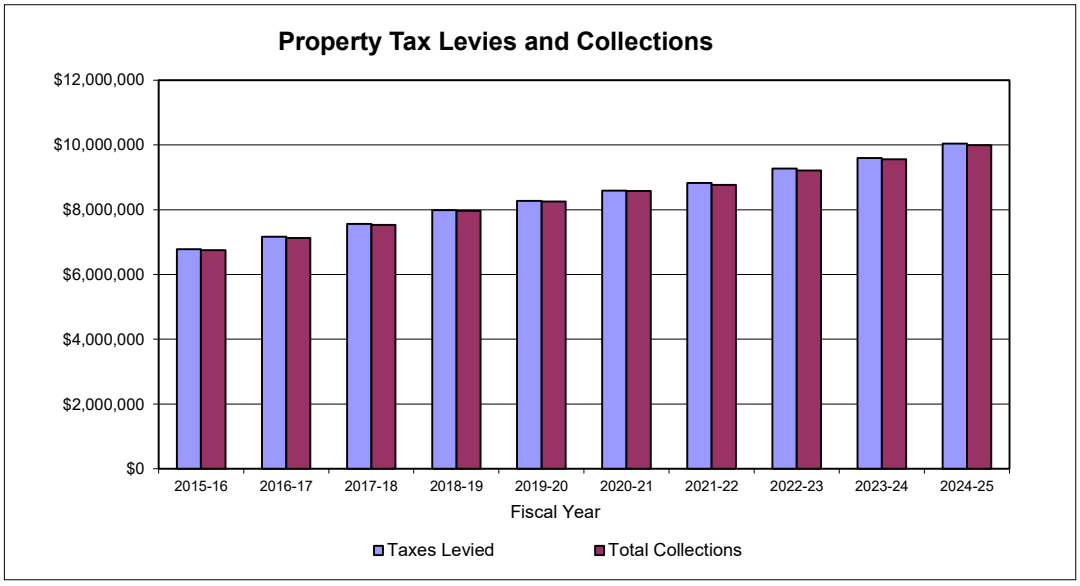
Business Name	Business Category
Barnes & Noble	Stationery/Book Stores
Chevron	Service Stations
Chevron	Service Stations
Chevron	Service Stations
Circle K/76	Service Stations
Circle K/Mobil	Service Stations
CVS Pharmacy	Drug Stores
Dell Software	Office Supplies/Furniture
Digital River	Business Services
Lowes	Building Materials
Metagenics	Drugs/Chemicals
Michaels Arts and Crafts	Art/Gift/Novelty Stores
Petsmart	Specialty Stores
Qlogic	Office Equipment
Ralphs	Grocery Stores
Renaissance Clubsport	Leisure/Entertainment
Restaurants on the Run	Casual Dining
Shell	Service Stations
Stadium Brewing Company	Casual Dining
Staples	Office Supplies/Furniture
Stater Bros	Grocery Stores
Target	Discount Dept Stores
TJ Maxx	Family Apparel
Trader Joe's	Grocery Stores
Vintners Shell Stations	Service Stations

Source: State Board of Equalization, CDTFA, State Controller's Office, The HDL Companies
Orange County Assessor

CITY OF ALISO VIEJO

PROPERTY TAX LEVIES AND COLLECTIONS
LAST TEN FISCAL YEARS

Fiscal Year	Taxes Levied for the Fiscal Year[1]	Collected within the Fiscal Year of Levy		Collections in Subsequent Years [2]	Total Levy Collections to Date [3]	
		Amount	Percent of Levy		Amount	Percent of Levy
2014-15	6,453,445	6,412,710	99.37%	23,671	6,436,381	99.74%
2015-16	6,778,670	6,724,355	99.20%	22,577	6,746,932	99.53%
2016-17	7,167,823	7,103,256	99.10%	21,428	7,124,684	99.40%
2017-18	7,559,194	7,499,294	99.21%	25,595	7,524,890	99.55%
2018-19	7,985,095	7,948,958	99.55%	19,426	7,968,384	99.79%
2019-20	8,269,551	8,233,770	99.57%	20,806	8,254,576	99.82%
2020-21	8,585,800	8,549,014	99.57%	28,004	8,577,018	99.90%
2021-22	8,820,915	8,733,020	99.00%	28,433	8,761,453	99.33%
2022-23	9,265,181	9,187,626	99.16%	25,491	9,213,118	99.44%
2023-24	9,596,445	9,524,147	99.25%	28,563	9,552,709	99.54%
2024-25	10,037,135	9,956,296	99.19%	32,509	9,988,806	99.52%



[1] *Includes amounts received for Property Tax-In Lieu of VLF*

[2] *The column includes the total amount of delinquent taxes collected in each fiscal year. The Orange County Auditor-Controller tax ledger does not provide detailed information regarding the levy year to which delinquent tax collections pertain.*

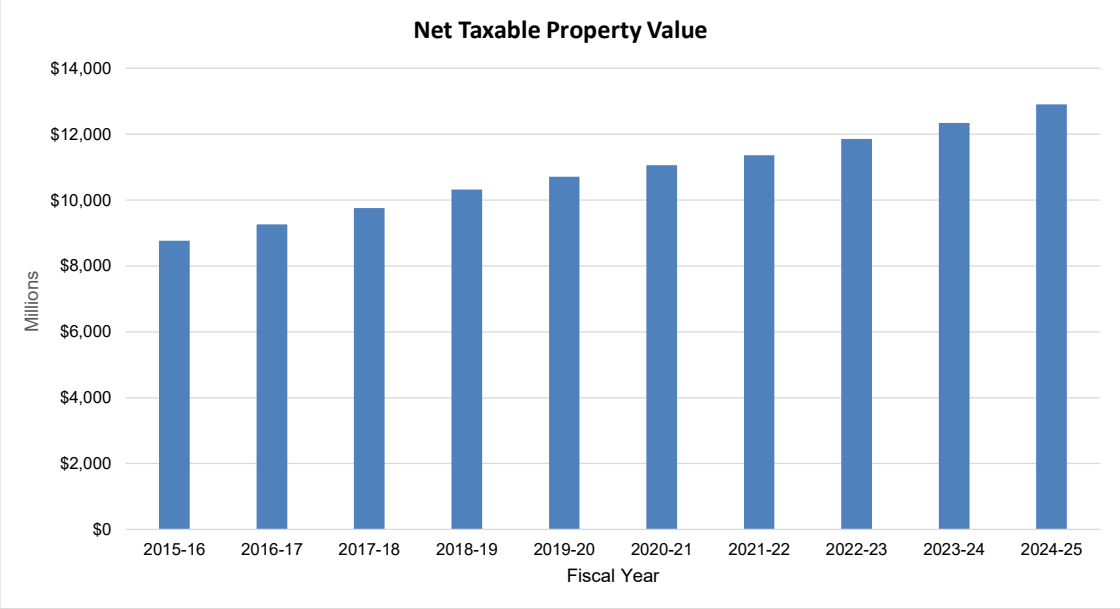
[3] *Total Levy Collections may exceed 100% due to prior years delinquent taxes and delinquent tax penalties collected.*

Source: Orange County Auditor/Controller.

CITY OF ALISO VIEJO

ASSESSED AND ESTIMATED ACTUAL VALUE OF TAXABLE PROPERTY
LAST TEN FISCAL YEARS

Fiscal Year	Secured Gross Value	Unsecured Gross Value	Nonunitary Utilities	Exemptions	Total	Percentage Increase	Total Direct Rate Applied
2014-15	8,449,701,616	320,520,081	-	329,481,251	8,440,740,446	7.15%	0.02165
2015-16	8,821,939,196	306,239,139	-	362,214,100	8,765,964,235	3.85%	0.02165
2016-17	9,298,401,724	305,313,282	-	341,610,276	9,262,104,730	5.66%	0.02165
2017-18	9,788,791,533	339,021,986	-	370,210,705	9,757,602,814	5.35%	0.02170
2018-19	10,497,372,155	280,375,081	-	457,069,555	10,320,677,681	5.77%	0.02163
2019-20	10,902,480,454	290,597,292	-	486,424,453	10,706,653,293	3.74%	0.02165
2020-21	11,227,375,357	335,321,001	-	504,713,951	11,057,982,407	3.28%	0.02168
2021-22	11,546,139,848	349,456,510	-	537,926,777	11,357,669,581	2.71%	0.02167
2022-23	12,018,958,043	382,216,615		548,219,355	11,852,955,303	4.36%	0.02168
2023-24	12,515,584,998	401,890,511		576,563,521	12,340,911,988	4.12%	0.02173
2024-25	13,036,920,662	460,127,807		586,350,833	12,910,697,636	4.62%	0.02169



Source: The HDL Companies; County of Orange Auditor-Controller

CITY OF ALISO VIEJO

DIRECT AND OVERLAPPING PROPERTY TAX RATES
(RATE PER $100 OF ASSESSED VALUE)
LAST TEN FISCAL YEARS

	Fiscal Years									
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Basic Levy[1]	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Capistrano Union	0.00845	0.00843	0.00800	0.00786	0.00745	0.00756	0.00727	0.00691	0.00633	0.00446
Laguna Beach Unified	0.01396	0.01371	0.01287	0.01285	0.01266	0.01012	0.01018	0.00971	0.00883	0.00876
Saddleback Valley Unified	0.03008	0.02688	0.02365	0.02392	0.02295	0.02336	0.02200	0.02227	0.02037	0.02108
Moulton Niguel Water District	0.09041	0.00815	-	-	-	-	-	-	-	-
Metropolitan Water District	0.00350	0.00350	0.00350	0.00350	0.00350	0.00350	0.00350	0.00350	0.00350	0.00700
Total Direct & Overlapping Tax Rates[2]	1.14640	1.06067	1.04802	1.04813	1.04656	1.04454	1.04295	1.04239	1.03903	1.04130
City's Share of 1% Levy per Prop 13[3]	0.02134	0.02134	0.02134	0.02134	0.02134	0.02134	0.02134	0.02134	0.02134	0.02134
Total Direct Rate [4]	0.02165	0.02165	0.02170	0.02163	0.02165	0.02165	0.02167	0.02168	0.02173	0.02169

[1]In 1978, California voters passed Proposition 13 which set the property tax rate at a 1.00% fixed amount. This 1.00% is shared by all taxing agencies for which the subject property resides within. In addition to the 1.00% fixed amount, property owners are charged taxes as a percentage of assessed property values for the payment of any voter approved bonds.

[2]Overlapping rates are those of local and county governments that apply to property owners within the City. Not all overlapping rates apply to all property owners.

[3]City's Share of 1% Levy is based on the City's share of the general fund tax rate area with the largest net taxable value within the City. The ERAF portion of the City's Levy has been subtracted where known.

[4]Total Direct Rate is the weighted average of all individual direct rates applied by the City/Agency preparing the statistical section information and excludes revenues derived from aircraft. Beginning in 2013/14 the Total Direct Rate no longer includes revenue generated from the former redevelopment tax rate areas. Challenges to recognized enforceable obligations are assumed to have been resolved during 2012/13. For the purposes of this report, residual revenue is assumed to be distributed to the City/Agency in the same proportions as general fund revenue.

Source: The HDL Companies, Orange County Assessor

CITY OF ALISO VIEJO

PRINCIPAL PROPERTY TAXPAYERS
JUNE 30, 2024 AND 10 YEARS AGO

2024-25

Taxpayer	Primary Use	Assessed Valuation	Percentage of Total Assessed Valuation
St Moritz Property Owner LLC	Residential	$ 345,526,640	2.68%
Microvention Inc	Commercial	246,942,223	1.91%
Barcelona LLC	Residential	200,257,980	1.55%
Vantis Multifamily LLC	Residential	147,430,546	1.14%
City Lights-Aliso Viejo LLC	Residential	133,968,464	1.04%
Taghkanic Real Estate Holdings I LLC	Commercial	120,000,000	0.93%
TGA 26600-26700 Aliso Viejo Parkway LLC	Commerical	99,939,600	0.77%
Summit IV LLC	Commercial	97,639,536	0.76%
Sequoia Equities Alize	Residential	95,345,066	0.74%
PLC 3 LP	Residential	93,254,829	0.72%
Top Ten Totals		$ 1,580,304,884	12.24%

2015-16

Taxpayer	Primary Use	Assessed Valuation	Percentage of Total Assessed Valuation
Sequoia Equities	Residential	$ 159,919,686	1.83%
City Lights - Aliso Viejo LLC	Residential	113,564,290	1.30%
RREEF America Reit II Corporation	Commercial	113,116,096	1.29%
Moritz Associates LLC	Residential	112,200,478	1.28%
Barcelona, LLC	Residential	96,721,571	1.10%
Qlogic Corporation	Commerical	76,431,839	0.87%
Aliso Viejo RP-V1 LLC	Commercial	66,798,438	0.76%
Aliso Creek Apartment Partners LLC	Residential	64,462,507	0.74%
Pacific Life Insurance Company	Commercial	62,782,294	0.72%
Summit Office LLC	Commercial	60,368,441	0.69%
Top Ten Totals		$ 926,365,640	10.57%

Source: The HDL Companies
Orange County Assessor

CITY OF ALISO VIEJO

RATIOS OF NET DIRECT GENERAL OBLIGATION DEBT TO ASSESSED VALUE AND NET GENERAL OBLIGATION DEBT PER CAPITA
LAST TEN FISCAL YEARS

Fiscal Year	Net Direct General Obligation Debt: Bonds Payable	Unamortized Premium	Lease Liability	Subscription Liability	Total	Assessed Value	Percentage of General Obligation Debt to Assessed Value	Population	Per Capita Personal Income	Percentage of Personal Income	Net General Obligation Debt per Capita
2014-15	-	-	-	-	-	8,440,740,446	0.000%	50,509		-	-
2015-16	-	-	-	-	-	8,765,964,235	0.000%	50,509		-	-
2016-17	-	-	-	-	-	9,262,104,730	0.000%	50,312		-	-
2017-18	-	-	-	-	-	9,757,602,814	0.000%	51,950		-	-
2018-19	-	-	-	-	-	10,320,677,681	0.000%	51,372		-	-
2019-20	-	-	-	-	12,250,000	10,706,653,293	0.114%	50,044	48,898	0.501%	244.78
2020-21	-	-	-	-	12,020,000	11,057,982,407	0.109%	49,813	51,379	0.470%	241.30
2021-22	-	-	-	-	11,785,000	11,357,669,581	0.104%	50,782	50,540	0.459%	232.07
2022-23	11,545,000	871,257	5,823	399,551	12,821,631	11,852,955,303	0.108%	50,766	54,865	0.460%	252.56
2023-24	11,295,000	838,988	38,375	298,428	12,470,792	12,340,911,988	0.101%	50,068	62,037	0.401%	249.08
2024-25	11,035,000	806,719	30,967	526,550	12,399,236	12,910,697,636	0.096%	50,213	66,115	0.373%	246.93

Ratios to Assessed Valuation:	
Total Overlapping Tax and Assessment Debt	0.17%
Total Overlapping General Fund Debt	0.16%
Total Direct Debt ($12,399,236)	0.10%
Combined Total Debt	0.43%

Source: California Municipal Statistics, Inc
HDL Coren & Cone

CITY OF ALISO VIEJO

COMPUTATION OF DIRECT AND OVERLAPPING BONDED DEBT
JUNE 30, 2025

2024-25 Assessed Valuation $ 12,910,697,636

OVERLAPPING TAX AND ASSESSMENT DEBT:	Total Debt 6/30/2025	% Applicable (1)	City's Share of Debt 6/30/25
Metropolitan Water District	$ 17,155,000	0.317%	$ 54,381
Capistrano USD School Facilities Improvement District No 1	3,327,455	0.730%	24,290
Laguna Beach Unified School District,	7,690,000	1.614%	124,117
Saddleback Valley Unified School District	64,475,000	0.463%	298,519
City of Aliso Viejo Community Facilities Disctrict No. 2005-01	22,035,000	100.000%	22,035,000
TOTAL OVERLAPPING TAX AND ASSESSMENT DEBT			$ 22,536,307
OVERLAPPING GENERAL FUND DEBT:			
Orange County General Fund Obligations	$ 429,065,000	1.593%	$ 6,835,005
Orange County Board of Education General Fund Obligations	9,120,000	1.593%	145,282
Capistrano Unified School District Certificates of Participation	19,365,000	9.738%	1,740,584
Moulton-Niguel Water District Certificates of Participation	48,605,000	26.261%	12,224,496
TOTAL NET DIRECT OVERLAPPING GENERAL FUND DEBT			$ 20,945,367
TOTAL NET OVERLAPPING DEBT			**$ 43,481,674**

DIRECT GENERAL FUND DEBT:	Total Debt 6/30/25		
City of Aliso Viejo Certificates of Participation[3]	$ 11,035,000	100.000%	$ 11,035,000
Unamortized premium	806,719	100.000%	806,719
Lease Liability	30,967	100.000%	30,967
Subscription Liability	526,550	100.000%	526,550
TOTAL DIRECT DEBT			**$ 12,399,236**
NET COMBINED TOTAL DEBT			**$ 55,880,910** (2)

(1) The percentage of overlapping debt applicable to the city is estimated using taxable assessed property value. Applicable percentages were estimated by determining the portion of the overlapping district's assessed value that is within the boundaries of the city divided by the district's total taxable assessed value.

(2) Excludes tax and revenue anticipation notes, enterprise revenue, mortage revenue and non-bonded capital lease obligations.

(3) On August 13, 2019 the City issued $12,250,000 of tax-exempt Certificates of Participation to provide financing for the construction of the Aliso Viejo Ranch.

Ratios to 2024-25 Assessed Valuation:	
Total Overlapping Tax and Assessment Debt	0.17%
Total Overlapping General Fund Debt	0.16%
Total Direct Debt ($12,399,236)	0.10%
Combined Total Debt	0.43%

Source: HDL, California Municipal Statistics, Inc, City Finance Department

CITY OF ALISO VIEJO

LEGAL DEBT MARGIN
LAST TEN FISCAL YEARS

	Fiscal Year				
	2015-16	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Assessed Valuation	$ 8,765,964,235	$ 9,262,104,730	$ 9,757,602,814	$ 10,320,677,681	$ 10,706,653,293
Conversion Percentage	25%	25%	25%	25%	25%
Adjusted Assessed Valuation	2,191,491,059	2,315,526,183	2,439,400,704	2,580,169,420	2,676,663,323
Debt Limit Percentage	15%	15%	15%	15%	15%
Debt Limit	328,723,659	347,328,927	365,910,106	387,025,413	401,499,498
Total Debt Applicable to Limit	-	-	-	-	12,250,000
Legal Debt Margin	$ 328,723,659	$ 347,328,927	$ 365,910,106	$ 387,025,413	$ 389,249,498
Total Net Debt Applicable to Limit as Percentage of Debt Limit	-	-	-	-	0.03

	Fiscal Year				
	2020-21	**2021-22**	**2022-23**	**2023-24**	**2024-25**
Assessed Valuation	$ 11,057,982,407	$ 11,357,669,581	$ 11,852,955,303	$ 12,340,911,988	$ 12,910,697,636
Conversion Percentage	25%	25%	25%	25%	25%
Adjusted Assessed Valuation	2,764,495,602	2,839,417,395	2,963,238,826	3,085,227,997	3,227,674,409
Debt Limit Percentage	15%	15%	15%	15%	15%
Debt Limit	414,674,340	425,912,609	444,485,824	462,784,200	484,151,161
Total Debt Applicable to Limit	12,020,000	11,785,000	11,545,000	11,295,000	11,035,000
Legal Debt Margin	$ 402,654,340	$ 414,127,609	$ 432,940,824	$ 451,489,200	$ 473,116,161
Total Net Debt Applicable to Limit as Percentage of Debt Limit	2.9%	2.8%	2.6%	2.4%	2.3%

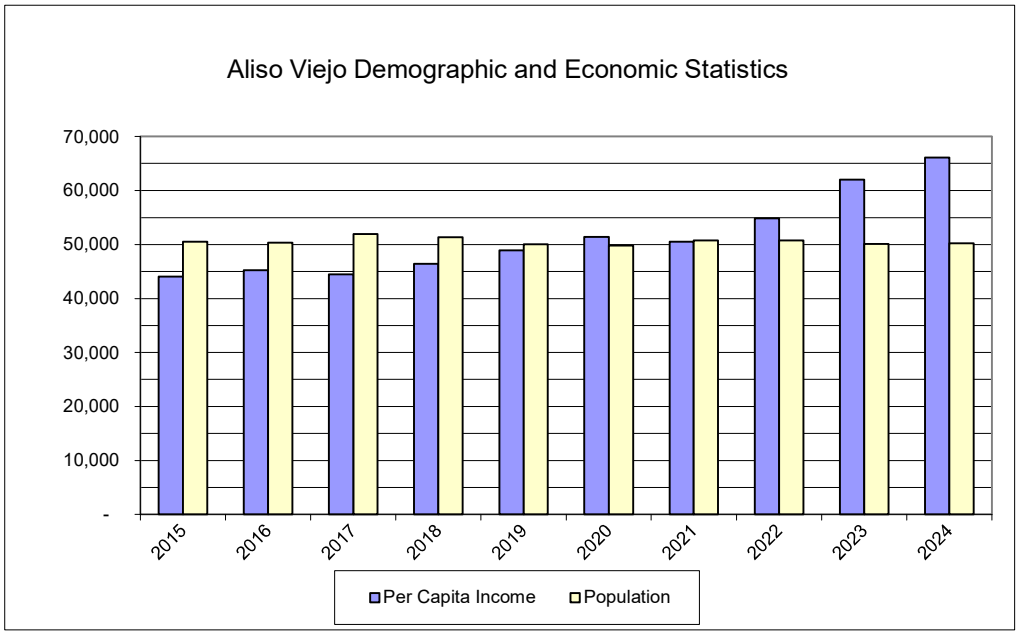
Note: The general laws of the State of California for muncipalities provide for a legal debt limit of 15% of gross assessed valuation. However, this provision was enacted when assessed valuation was established based on 25% of market value. Effective with fiscal year 1981-82, taxable property is assessed at 100% of market value. Although the debt limit provision has not been since this change, the percentage has been proportionately modified to 3.75% for the purpose of this amended by the State calculation for consistency with the original intent of the State's debt limit.

Source: City Finance Department
Orange County Auditor-Controller

CITY OF ALISO VIEJO

DEMOGRAPHIC AND ECONOMIC STATISTICS
LAST TEN FISCAL YEARS

Calendar Year	Population	Total Income	Per Capita Income	Unemployment Rate*	Median Age	% of Pop 25+ High School Degree	% of Pop 25+ Bachelor's Degree
2015	50,509	2,223,991,000	44,031	3.5%	36.1	95.4%	56.9%
2016	50,312	2,274,460,000	45,207	3.1%	36.6	96.4%	56.9%
2017	51,950	2,311,366,000	44,492	3.0%	36.5	96.8%	57.5%
2018	51,372	2,385,153,000	46,429	2.6%	36.6	96.1%	55.6%
2019	50,044	2,447,088,000	48,898	2.5%	36.8	95.9%	55.5%
2020	49,813	2,559,352,000	51,379	7.5%	37.8	96.4%	56.2%
2021	50,782	2,566,572,000	50,540	5.1%	37.4	96.2%	56.3%
2022	50,766	2,785,309,000	54,865	3.0%	37.4	96.2%	56.2%
2023	50,068	3,106,090,000	62,037	3.3%	37.9	96.4%	56.5%
2024	50,213	3,319,857,000	66,115	3.8%	38.6	96.4%	57.1%



Source: California Department of Finance, California Employment Development Department, The HDL Companies, US Census Bureau

CITY OF ALISO VIEJO

PRINCIPAL EMPLOYERS
LAST TEN YEARS

2025

Employer	Number of Employees	Percent of Total Employment
MicroVention, Inc	1700	6.05%
United Parcel Service	1200	4.27%
Glaukos Corporation	995	3.54%
RxSight, Inc	943	3.36%
Ambry Genetics Corporation	706	2.51%
Capistrano Unified School District	540	1.92%
Orange County Sheriff's Department	450	1.60%
UST Global, Inc	349	1.24%
Metagenics	280	1.00%
Avanir Pharmaceuticals, Inc	195	0.69%
Total Top Employers	**7,358**	**26.19%**
Total Employees in City	**28,100**	

2016

Employer	Number of Employees	Percent of Total Employment
United Parcel Service	1,000	4.08%
Pacific Life Insurance	811	3.31%
Capistrano Unified School District	679	2.77%
Flour	630	2.57%
Quest Software	600	2.45%
Qlogic	490	2.00%
Renaissance ClubSport	259	1.06%
Pepsi Beverages Company	215	0.88%
Smith Micro Software	200	0.82%
Merit Property Management	199	0.81%
Total Top Employers	**5,083**	**20.72%**
Total Employees in City	**24,531**	

Source: City Finance Department; Employment Development Department, Kosmont Companies, CoStar, Data Axle, ESRI, company websites and filings

CITY OF ALISO VIEJO

OPERATING INDICATORS BY FUNCTION
LAST TEN FISCAL YEARS

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Public Safety:										
Part I Crimes	395	440	438	488	460	415	424	479	563	292
Public Works:										
Streets Resurfaced	38	29	1	57	1	103	47	30	1	1
Lane Miles*										1.5
Community Development										
Building Permits Issued	2,455	2,129	2,225	1,711	1,754	1,755	2,105	2,525	1,747	2,725
Plan Checks Performed	275	205	184	197	234	309	686	783	829	757
Community Services***:										
Recreation										
Contract Classes	-	-	145	452	999	283	934	976	639	996
Contract Class Participants	-	-	443	1,559	2,239	1,599	4,352	5,137	4,613	3,727
Events										
City Events	7	7	16	26	8	9	17	9	12	9
City Sponsored Events	6	7	26	27	5	2	8	16	21	23
Senior Programs										
Senior Mobility Program Rides	1,796	2,141	2,419	2,102	2,340	-	345	1,626	1,803	2,130
Finance										
Accounts Payable										
AP Line Items Entered	4,041	4,368	4,454	4,791	4,964	4,855	5,947	5,581	5,113	4,934
Invoices Processed	2,852	3,012	3,069	3,271	3,216	3,166	3,698	3,787	3,309	3,018
Payments Processed	2,220	2,257	2,284	2,474	2,330	2,338	2,699	2,611	2,207	2,076
Payroll										
Payroll Checks Issued	622	627	635	748	834	912	1,069	1,134	1,208	1,156

* Lane Miles provided beginning in FY 2024-25

***The Community Services department was restructured in FY 2017-18

Source: City Public Works Department,

CITY OF ALISO VIEJO

FULL-TIME AND PART-TIME CITY EMPLOYEES BY FUNCTION
LAST TEN FISCAL YEARS

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
General Government [1]	10.0	10.0	10.0	10.0	11.3	13.5	14.0	13.5	13.5	13.5
Public Safety [2]	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.2	0.2	0.0
Public Works	1.0	1.0	1.0	2.0	3.0	3.0	3.0	4.0	4.0	4.0
Community Services [3]	0.0	0.0	2.6	5.5	7.3	8.0	9.8	12.0	12.0	12.5
Community Development	7.4	7.4	5.0	5.0	6.0	5.5	5.5	5.3	5.0	5.0
Total	18.4	18.4	18.6	22.5	27.7	30.2	32.3	35.0	34.7	35.0

[1] *Attorney Services are contracted through Best, Best, & Krieger LLP and are not included.*
[2] Public Safety is provided under contract with the Orange County Sheriff's Department
[3] Community Services Department was restructured in FY 17-18

Source: City Finance Department

CITY OF ALISO VIEJO

CAPITAL ASSETS STATISTICS BY FUNCTION
LAST TEN FISCAL YEARS

	Fiscal Year									
	2015-16	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
General Government										
City Hall	1	1	1	1	1	1	1	1	1	1
Public Works:										
Streets (Miles)	73	73	73	73	73	73	73	73	73	73
Street Lights **	1,410	1,410	1,410	1,411	1,407	1,407	1,407	1,407	1,407	1,429
Traffic Signals **	47	47	47	47	48	48	48	48	48	48
Parks & Recreation:										
Parks ***	2	2	2	2	2	2	2	2	2	2
Community Facilities	4	4	4	4	4	4	4	4	4	4
Community Development										
Housing	-	-	-	-	-	-	1	2	3	3

*** The City leases 1,230 of the streetlights and shares 3 of the traffic signals with neighboring cities.*
**** Aliso Viejo Community Association independently owns and manages 21 parks in Aliso Viejo.*

Source: City Public Works Department

CITY OF ALISO VIEJO

SCHEDULE OF INSURANCE
JUNE 30, 2025

Type of Coverage	Limits/Deductibles	Insurer	Policy period
General and Automobile Liability:			
General Liability, Automobile Liability, Bodily Injury, Property Damage, Personal Injury.	$50,000,000 combined single limit per occurrence	California Joint Powers Insurance Authority.	07/01/24 - 07/01/25
Pollution & Remediation Legal Liability:			
Scheduled property, streets, storm drains, approved underground tanks & non-owned disposal sites.	$5,000,000 per member $250,000 per occurrence deductible.	Self Insured Program/ California Joint Powers Insurance Authority.	07/01/24 - 07/01/25
Property:			
All-Risk, including buildings, contents, garaged vehicles, contractor's equipment, fine arts, rental income and other miscellaneous extensions of coverage.	$25,000,000 per occurrence $10,000 deductible per occurrence $5,000 deductible for mechanical breakdown; $2,500 deductible for vehicles	Self Insured Program/ California Joint Powers Insurance Authority	07/01/24 - 07/01/25
Crime:			
Crime Insurance Program (Blanket Fidelity Bond)			
Faithful Performance	$1,000,000 limit per member, deductible of $2,500 per occurrence	Alliant Insurance Services, Inc.	07/01/24 - 07/01/25
Depositor's Forgery	$1,000,000 limit per member, deductible of $2,500 per occurrence	Alliant Insurance Services, Inc.	07/01/24 - 07/01/25
Crime- Money & Securities	$1,000,000 limit per member, deductible of $2,500 per occurrence	Alliant Insurance Services, Inc.	07/01/24 - 07/01/25
Computer Fraud	$1,000,000 limit per member, deductible of $2,500 per occurrence	Alliant Insurance Services, Inc.	07/01/24 - 07/01/25
Worker's Compensation:			
Work related injury/illness claims for temporary and permanent disability, and Employer's Liability	California Statutory Benefits for workers' compensation $10,000,000 per occurrence for Employer's Liability	Self Insured Program/ California Joint Powers Insurance Authority	07/01/24 - 07/01/25
Special Events:			
Tenants/Users for Property damage/bodily injury	$1,000,000 per occurrence, $1,000,000 aggregate per event. $5,000 medical expense limit.	Alliant Insurance Services, Inc.	07/01/24 - 07/01/25

Source: City Finance Department

CITY OF ALISO VIEJO

MISCELLANEOUS STATISTICAL INFORMATION
JUNE 30, 2025

Date of Incorporation	July 01, 2001
Form of Government	Council-Manager
Area	7 Square miles
Miles of Streets	72.1 miles
Miles of Sidewalks	147 miles
Employees	
Full -Time (Budgeted Positions)	29
Part-Time (FTEs)	6.0
Elected Officials	5
Public Safety	
Police Department	Contracted with the Orange County Sheriff's Department
Fire Department	Contracted with the Orange County Fire Authority
Recreation & Culture:	
Parks - Community & Neighborhood	23
Park Acreage (developed)	260 Acres
Education:	
Elementary Schools (K-6)	4
Middle Schools (6-8)	2
High Schools (9-12)	1
Charter Schools	1
Private Schools	3
Universities	1

*Source: State of California, Department of Finance

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The Honorable Mayor and City Council
City of Aliso Viejo, California

We have audited the financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of the City of Aliso Viejo ("City") as of and for the year ended June 30, 2025, and have issued our report thereon dated November 13, 2025. Professional standards require that we advise you of the following matters relating to our audit.

Our Responsibility in Relation to the Financial Statement Audit

As communicated in our engagement letter dated May 23, 2025, our responsibility, as described by professional standards, is to form and express opinions about whether the financial statements that have been prepared by management with your oversight are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of your respective responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of the City solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We conducted our audit consistent with the planned scope and timing we previously communicated to you in our engagement letter.

Compliance with All Ethics Requirements Regarding Independence

The engagement team, others in our firm, as appropriate, and our firm have complied with all relevant ethical requirements regarding independence.

We identified self-review threats to independence as a result of non-attest services provided. Those non-attest services included recording journal entries detected during the audit process and preparing the financial statements. To mitigate the risk, management has compared the draft financial statements and footnotes to the underlying accounting records to verify accuracy and has reviewed a disclosure checklist to ensure footnotes are complete and accurate.

Significant Risks Identified

We have identified the following significant risks:

Implementation of Governmental Accounting Standards Board (GASB) No. 101 – Compensated Absences due to the complexity of the standard and being the first year of implementation.

Qualitative Aspects of the Entity's Significant Accounting Practices

Significant Accounting Policies

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the City is included in Note 1 to the financial statements. There have been no initial selection of accounting policies and the City changed the accounting policies related to compensated absences by adopting Statement of Governmental Accounting Standards (GASB Statement) No. 101, Compensated Absences, and risk disclosures related to government vulnerabilities due to concentrations and constraints by adopting Statement of Governmental Accounting Standards (GASB Statement) No. 102, Certain Risk Disclosures, in the fiscal year ended June 30, 2025. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Significant Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

The most sensitive accounting estimates affecting the financial statements include:

- Management's estimate of transactions related to net pension and OPEB liabilities based on actuarial information.

We evaluated the key factors and assumptions used to develop the estimates and determined that it is reasonable in relation to the basic financial statements taken as a whole and in relation to the applicable opinion units.

Financial Statement Disclosures

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the financial statements were:

- The disclosure of investment fair value in note 2 to the financial statements
- The disclosure of pensions in note 9 to the financial statements
- The disclosure of OPEB in note 10 to the financial statements.

The financial statement disclosures are neutral, consistent, and clear.

Significant Difficulties Encountered during the Audit

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

Uncorrected and Corrected Misstatements

For purposes of this communication, professional standards also require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole and each applicable opinion unit. Uncorrected misstatements or matters underlying those uncorrected misstatements could potentially cause future-period financial statements to be materially misstated, even though the uncorrected misstatements are immaterial to the financial statements currently under audit. There was one adjustment not recorded by management because it was not material to the financial statements. This was a passed adjustment to record the disposal of a median, as the asset did not exist at year-end.

In addition, professional standards require us to communicate to you all material, corrected misstatements that were brought to the attention of management as a result of our audit procedures. There were no material misstatements noted as a result of our audit procedures.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the City's financial statements or the auditor's report. No such disagreements arose during the course of the audit.

Representations Requested from Management

We have requested certain written representations from management in a letter dated November 13, 2025.

Management's Consultations with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

Other Significant Matters, Findings, or Issues

In the normal course of our professional association with the City, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, significant events or transactions that occurred during the year, operating and regulatory conditions affecting the entity, and operational plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as the City's auditors.

Other Information Included in the Annual Comprehensive Financial Report

Pursuant to professional standards, our responsibility as auditors for other information, whether financial or nonfinancial, included in the City's annual report, does not extend beyond the information identified in the audit report, and we are not required to perform any procedures to corroborate such other information. However, in accordance with such standards, we have read the information and

considered whether such information, or the manner of its presentation, was materially inconsistent with its presentation in the financial statements.

Our responsibility also includes communicating to you any information which we believe is a material misstatement of fact. Nothing came to our attention that caused us to believe that such information, or its manner of presentation, is materially inconsistent with the information, or manner of its presentation, appearing in the financial statements.

This report is intended solely for the information and use of the City Council and management of the City and is not intended to be and should not be used by anyone other than these specified parties.

Davis Farr LLP

Irvine, California
November 13, 2025

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REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Independent Auditor's Report

The Honorable Mayor and City Council
City of Aliso Viejo, California

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of City of Aliso Viejo (the 'City'), as of and for the year ended June 30, 2025, and the related notes to the financial statements, which collectively comprise the City's basic financial statements, and have issued our report thereon dated November 13, 2025.

Report on Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered The City's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, we do not express an opinion on the effectiveness of the City's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of the internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that have not been identified.

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether The City's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards.*

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Davis Farr LLP

Irvine, California
November 13, 2025

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INDEPENDENT ACCOUNTANT'S REPORT

The Honorable Mayor and City Council
City of Aliso Viejo, California

We have performed the procedures enumerated below on the City of Aliso Viejo, California (City) appropriations limit worksheets for compliance with the requirements of Section 1.5 of Article XIIIB of the California Constitution for the year ended June 30, 2025. The City is responsible for compliance with Section 1.5 of Article XIIIB of the California Constitution.

The City has agreed to and acknowledged that these procedures are appropriate to meet the intended purpose of evaluating compliance with the requirements of Section 1.5 of Article XIIIB of the California Constitution and the League of California Cities publication entitled *Article XIIIB Appropriations Limitation Uniform Guidelines* for the year ended June 30, 2025. This report may not be suitable for any other purpose. The procedures performed may not address all the items of interest to a user of this report and may not meet the needs of all users of this report and, as such, users are responsible for determining whether the procedures performed are appropriate for their purposes.

The procedures and the associated findings are as follows:

1. We obtained the worksheets referred to above and compared the limit and annual adjustment factors included in those worksheets to the limit and annual adjustment factors that were adopted by resolution of the City Council. We also compared the population and inflation options included in the aforementioned worksheets to those that were selected by a recorded vote.

   Results: No exceptions were noted as a result of our procedures.

2. We recalculated the mathematical computations reflected in the City's worksheets.

   Results: No exceptions were noted as a result of our procedures.

3. We compared the current year information used to determine the current year limit and agreed it to worksheets prepared by the City and to information provided by the State Department of Finance.

   Results: No exceptions were noted as a result of our procedures.

4. We compared the amount of the prior year appropriations limit presented in the worksheets to the amount adopted by the City Council for the prior year.

   Results: No exceptions were noted as a result of our procedures.

We were engaged by the City to perform this agreed-upon procedures engagement and conducted our engagement in accordance with standards established by the American Institute of Certified Public Accountants. We were not engaged to and did not conduct an examination or review, the objective of which would be the expression of an opinion or conclusion, respectively on the worksheets referred to above. Accordingly, we do not express such an opinion or conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you. No procedures have been performed with respect to the determination of the appropriation limit for the base year, as defined by the League publication entitled *Article XIIIB Appropriations Limitation Uniform Guidelines*.

We are required to be independent of the City and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements related to our agreed-upon procedures engagement.

This report is intended solely for the information and use of the Management of the City of Aliso Viejo, California and is not intended to be, and should not be, used by anyone other than the specified party.

Davis Farr LLP

Irvine, California
November 13, 2025

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INDEPENDENT ACCOUNTANT'S REPORT

The Honorable Mayor and City Council
City of Aliso Viejo, California

We have performed the procedures enumerated below on the City of Aliso Viejo, California (City) Treasurer's Monthly Cash Statement for the month ended June 30, 2025, for compliance with the provisions of the California Government Code and with the City's investment policy dated July 17, 2024. The City's management is responsible for the Treasurer's Monthly Cash Statement for the month ended June 30, 2025.

The City has agreed to and acknowledged that these procedures are appropriate to meet the intended purpose of evaluating compliance with the requirements of the California Government Code and with the City's investment policy dated July 17, 2024. This report may not be suitable for any other purpose. The procedures performed may not address all the items of interest to a user of this report and may not meet the needs of all users of this report and, as such, users are responsible for determining whether the procedures performed are appropriate for their purposes.

The procedures and the associated findings are as follows:

1. We obtained a copy of the City's Treasurer's Report for the month ended June 30, 2025, and reconciled individual investments/deposits to supporting documentation obtained from City staff. We also traced total funds reported on the Treasurer's Report to the City's General Ledger at June 30, 2025.

   Results: No exceptions were noted as a result of our procedures.

2. We compared the investments listed on the City's Treasurer's Report for the month ended June 30, 2025, to the type of investments authorized by the City's Investment Policy and Government Code Section 53601.

   Results: No exceptions were noted as a result of our procedures.

3. We compared the market value of the investments listed on the Treasurer's Report for the month ended June 30, 2025, to the City's copies of investment statements.

   Results: No exceptions were noted as a result of our procedures.

4. We read the City Treasurer's Report for the month ended June 30, 2025, to ascertain that it contains all the information/data required by Government Code Section 53646 and meets the timing requirements of Government Code Section 53646 as follows:

   a. Was submitted within 45 days following the end of the quarter

b. Included the type of investment, issuer, date of maturity, par and dollar amount invested on all securities, investments, and monies held by the City

c. Included those funds under management of contracted parties (fiscal agents, trustee, deferred compensation, plan administrators, etc.)

d. Included market value (and source) as of the date of the report for all securities held by the City or under management of any outside party that is not also a local agency or the State of California Local Agency Investment Fund

e. Stated compliance of the portfolio to the investment policy of the City

f. Included a statement addressing the ability of the City to meet the pool's expenditure requirements for the next six months

g. Included the most recent statements from the Local Agency Investment Fund in lieu of the information required by (b) and (d) above, for City investments that have been placed in those pools

Results: No exceptions were noted as a result of our procedures, except for step 4a, the Treasurer’s report was approved by the Council on August 20, 2025 as per minutes of the meeting.

5. We compared the investments listed in the City Treasurer's Report for the month ended June 30, 2025, to the prohibited investments listed in the City's Investment Policy and Government Code Section 53601.6.

   Results: No exceptions were noted as a result of our procedures.

6. We calculated the totals (cost basis) for the investments listed in the City Treasurer's Report for the month ended June 30, 2025, and compared those totals to the limitations imposed by the City's Investment Policy and Government Code Section 53601 for specified investment types

   Results: No exceptions were noted as a result of our procedures.

7. We agreed individual investment maturity dates listed on the City Treasurer's Report for the month ended June 30, 2025, to the City's copies of the investment statements, to determine if they conformed to the maturity requirements of the City's Investment Policy and Government Code Section 53601.

   Results: No exceptions were noted as a result of our procedures.

The Honorable Mayor and City Council
City of Aliso Viejo, California

We were engaged by the City to perform this agreed-upon procedures engagement and conducted our engagement in accordance with standards established by the American Institute of Certified Public Accountants. We were not engaged to and did not conduct an examination or review, the objective of which would be the expression of an opinion or conclusion, respectively on the Treasurer's Monthly Cash Statement dated June 30, 2024. Accordingly, we do not express such an opinion or conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

We are required to be independent of the City and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements related to our agreed-upon procedures engagement.

This report is intended solely for the information and use of the Management of the City of Aliso Viejo, California and is not intended to be, and should not be, used by anyone other than the specified party.

Davis Farr LLP

Irvine, California
November 13, 2025

ALISO VIEJO

FY 2024-25
Annual Comprehensive Financial Report

City Council Meeting

December 3, 2025

General Fund Resources

- Sales Tax
  - EFuel, LLC Growth
  - The Commons
  - Growth in County Pool
- TOT
  - Occupancy Rates
- Recreation
  - Lower than expected rentals and classes
- Building and Planning
  - Kaiser Expansion

General Fund Resources	FY 2023-24 Actuals	FY 2024-25 Adopted Budget	FY 2024-25 Actuals	FY 2024-25 Budget Variance Over/(Under)
Property Tax	$ 9,911,102	$ 10,179,100	$ 10,287,203	$ 108,103
Sales Tax	8,359,623	8,900,000	11,154,921	2,254,921
TOT	1,570,575	1,600,000	1,699,738	99,738
Franchise Fees	1,793,611	1,661,670	1,738,860	77,190
Recreation	1,593,376	1,685,500	1,525,242	(160,258)
Building & Planning	1,240,630	1,100,000	1,353,812	253,812
Fines & Forfeitures	296,430	185,000	293,289	108,289
Investment Earnings[1]	708,216	495,000	2,138,091	1,643,091
Other[2]	2,700,363	944,049	1,870,143	926,094
Total Resources	**$ 28,173,926**	**$ 26,750,319**	**$ 32,061,299**	**$ 5,310,980**

[1] FY 24-25 Investment Earnings include $836,004 in accrued interest and market adjustments

[2] FY 24-25 Actuals include other financing sources for lease and SBITA acquisition per GASB 87 and 96 in the amount of $365,786

General Fund Resources (cont.)

- Investment Earnings
  - Market Adjustments
  - Accrued Interest
- Other
  - AV Center Operating Results
  - Misc Reimbursements
  - Accounting Adjustments

General Fund Resources	FY 2023-24 Actuals	FY 2024-25 Adopted Budget	FY 2024-25 Actuals	FY 2024-25 Budget Variance Over/(Under)
Property Tax	$ 9,911,102	$ 10,179,100	$ 10,287,203	$ 108,103
Sales Tax	8,359,623	8,900,000	11,154,921	2,254,921
TOT	1,570,575	1,600,000	1,699,738	99,738
Franchise Fees	1,793,611	1,661,670	1,738,860	77,190
Recreation	1,593,376	1,685,500	1,525,242	(160,258)
Building & Planning	1,240,630	1,100,000	1,353,812	253,812
Fines & Forfeitures	296,430	185,000	293,289	108,289
Investment Earnings[1]	708,216	495,000	2,138,091	1,643,091
Other[2]	2,700,363	944,049	1,870,143	926,094
Total Resources	**$ 28,173,926**	**$ 26,750,319**	**$ 32,061,299**	**$ 5,310,980**

[1] FY 24-25 Investment Earnings include $836,004 in accrued interest and market adjustments

[2] FY 24-25 Actuals include other financing sources for lease and SBITA acquisition per GASB 87 and 96 in the amount of $365,786

General Fund Expenditures

- Admin & Support
  - Labor Savings
- Community Services
  - Full-time vacancy
  - Operating Expenses
- Comm & Econ Dev
  - Sales Tax Subsidies

General Fund Appropriations	FY 2023-2024 Actuals	FY 2024-25 Amended Budget	FY 2024-25 Actuals	FY 2024-25 Budget Variance (Over)/Under
Admin & Support	$ 4,978,006	$ 4,976,449	$ 4,235,385	$ 741,064
Community Services	2,743,811	3,165,132	2,744,808	420,324
Comm & Econ Dev	3,982,795	4,136,826	4,785,189	(648,363)
Public Works	1,724,588	1,914,500	1,668,271	246,229
Public Safety	10,005,398	11,332,287	10,462,135	870,152
City Hall	201,147	251,290	195,732	55,558
Debt Service	655,795	658,050	655,369	2,681
Transfers/Other	159,252	201,402	529,411	(328,009)
Total Operating	**$ 24,450,792**	**$ 26,635,936**	**$ 25,276,300**	**$ 1,359,636**
Capital Improvement	267,472	526,000	224,521	301,479
Total General Fund	**$ 24,718,264**	**$ 27,161,936**	**$ 25,500,821**	**$ 1,661,115**

General Fund Expenditures (cont.)

- Public Works
  - NPDES Permits
  - Environmental Compliance
- Public Safety
  - OCSD Vacancies
- Other
  - Accounting Adjustments
- CIP
  - Deferred Pool Deck Project

General Fund Appropriations	FY 2023-2024 Actuals	FY 2024-25 Amended Budget	FY 2024-25 Actuals	FY 2024-25 Budget Variance (Over)/Under
Admin & Support	$ 4,978,006	$ 4,976,449	$ 4,235,385	$ 741,064
Community Services	2,743,811	3,165,132	2,744,808	420,324
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General Fund Balance

FY 2024-25 General Fund
Year Ending June 30, 2025

Resources	$	32,061,299
Expenditures		(25,500,821)
Net Change in Fund Balance	$	6,560,478
Beginning Fund Balance	$	37,881,758
Year-End Fund Balance	$	44,442,236
% Change in Fund Balance		17.3%

General Fund Balance

Council Policy

- Reserves
  - Contingencies – Unexpected Shortfalls or Expenses
  - Self Insurance/Benefit Obligations
  - Asset Replacement - 50% of Accumulated Depreciation
  - 15% for Emergencies/Catastrophic Impacts
- Unassigned Fund Balance
  - 25-35% Operating Budget

Fund Balance

General Fund Balances		FY 2024-25 Actuals
Non-Spendable: Prepaid	$	-
Restricted		-
Assigned to:		
Contingencies		4,019,350
Self-Insurance/Benefit Obligations		1,000,000
Asset Replacement		14,318,164
Emergencies		15,726,222
Unassigned		9,378,500
Total Fund Balance	**$**	**44,442,236**

Special Revenue Funds

FY 2024-25 Year-End Balances

Fund	Beginning Balance	Total Revenues	Total Expenses	Ending Balance
202 - Traffic Congestion Relief Fund	$ 76,068	$ 3,362	$ -	$ 79,430
203 - Gas Tax	959,679	1,515,830	1,125,975	1,349,535
204 - Measure M	1,903,028	1,089,672	757,795	2,234,906
205 - SB1-RMRA	1,155,282	1,504,342	84,914	2,574,710
215 - Public Safety Grants	288,518	211,170	125,409	374,279
221 - AQMD (AB2766)	1,480,498	134,120	-	1,614,618
225 - Integrated Waste Management	70,924	66,225	62,347	74,802
231 - Other Grants	44,085	297,672	295,320	46,438
241 - Technology Fund	397,435	91,408	65,853	422,990
245 - Development Impact	1,377,777	-	-	1,377,777
251 - Federal Grants	(14,062)	126,549	199,515	(87,027)
260 - AV Center	-	3,193,144	3,193,144	-
261 - Aquatic Center	-	1,003,374	1,003,374	-
411 - Debt Service	546	655,673	655,921	298
511 - AV Ranch Foundation	100	-	-	100
TOTAL	**$ 7,739,880**	**$ 9,892,542**	**$ 7,569,565**	**$ 10,062,857**

ALISO VIEJO

Questions?

City of Aliso Viejo
AGENDA ITEM

DATE: December 3, 2025

TO: Mayor and City Council

FROM: Mitzi Ortiz, City Manager

SUBJECT: CITY COUNCIL REORGANIZATION

Recommended Action:

Select a Mayor and Mayor Pro Tem in accordance with Ordinance No. 2001-022, for the 2026 calendar year.

Fiscal Impact:

There is no fiscal impact to this action.

Background:

Ordinance No. 2001-022 provides for the selection of the Mayor and Mayor Pro Tem on an annual basis at the first meeting of the City Council in December of each year with their terms commencing on January 1st the following year.

Discussion:

To conduct the selection of the next Mayor and Mayor Pro Tem, the following steps are recommended:

- The City Clerk calls for a motion to nominate a member of the City Council to serve as Mayor for 2026.
- The City Clerk requests any additional nominations.
- Nominations are closed.
- A roll call vote is taken by the City Clerk for each nominee until a successful nominee receives a majority vote and is declared Mayor.

The process is then repeated for the position of Mayor Pro Tem.

Additionally, Council Policy 400-2 states that the Council seating order shall be at the discretion of the Mayor.