CHARLES TOWN UTILITY BOARD
AGENDA

WEDNESDAY, MARCH 24, 2021

Regular Meeting | **661 South George Street, Charles Town, WV 25414** | **4:00 PM**

CALL TO ORDER

1. **APPROVAL OF MINUTES**
   a. Approval of March 10, 2021 Regular Meeting Minutes
   UB Minutes March 10, 2021.pdf

2. **PUBLIC COMMENT**
   This portion of the agenda is designed for members of the general public to share thoughts on items of interest in the community. By law, Board members may ask clarifying questions or discuss procedural matters but are not permitted to discuss the policy merits of any issue unless it is scheduled for discussion.

   Until such time as Governor Justice revokes Executive Order 09-20 or any subsequent executive order that is primarily intended to address the public health emergency and spread of COVID-19 by restricting public gatherings and invoking physical distancing, public access to the meeting room will be restricted. Members of the public may still submit written comments to kstolipher@ctubwv.com that will be read aloud. Up to 20 minutes of time will be allotted for reading public comments.

   The public is invited to attend this meeting via webcast (www.ctubwv.com - Board Meetings - Meeting Agendas and Minutes 2021). The public may also attend the meeting by accessing the following zoom link: https://zoom.us/j/94097049423?pwd=MGtudjBTNE5NYmg4QnRLZDFjLytBZz09 or by calling 1-301-715-8592 and entering the Meeting ID 940 9704 9423 and Passcode 617184.

3. **UNFINISHED BUSINESS**
   a. Draft Safety Management Plan
   Draft Safety Management Plan 2021.pdf

4. **NEW BUSINESS**
   a. GDF
   i. Water Treatment Plant Line Survey
   WTP NPDES Line Survey Proposal.pdf

ii. Hydrogeological Report and Recommendations
Stage 1 Hydrological Study.pdf

b. Route 9 Sewer Project Resolution No. 14 - Contractor Pay Application No. 014, Hatch Invoices and CTUB Reimbursement
Resolution No 14 Pay Application.pdf

c. HACH Lead and Copper Sampling Contract
HACH Quote.pdf

d. Miller Station - Request from Owner
Miller Station Letter.pdf

5. **BOARD TRAINING**
   a. Steptoe & Johnson PLLC - Open Meetings Act
   Presentation on Sunshine Law.pdf

6. **MANAGER REPORTS**
   a. Utility Manager Report

7. **APPROVAL OF BILLS**
   a. March 24, 2021
   Board Report 3.24.21.pdf

8. **ADJOURNMENT**

INFORMATION ONLY - NEXT MEETING - APRIL 14, 2021 AT 4:00 P.M.

March 10, 2021

The Charles Town Utility Board held a virtual meeting on March 10, 2021 at 4:00 p.m. Members of the Board present were Daryl Hennessy, Pete Kubic, Duke Pierson, Jacquelyn Milliron and Tommy Stocks. Also present were Hoy Shingleton, Kristen Stolipher, and April Shultz. The Chairman called for changes or corrections to the February 24, 2021 regular meeting minutes. Jacquelyn suggested several changes. The Board approved the minutes as amended. One public comment was received from Mr. McGuire.

The Chairman next opened the floor for discussion on 71 Jefferson Crossing Way Water and Sewer Availability. Kristen provided that Mr. McGuire is in the process of opening a laundry mat in Charles Town and had come to the Board to discuss the capital improvement fees (CIF). Initially, staff provided Mr. McGuire an availability letter for water and sewer for 9.26 EDU's. Mr. McGuire has come to the Board to question the costs of the fees. After reviewing the equipment that will be installed in the facility and their water usage, as well as comparing the usage of other laundry facilities, staff calculated Mr. McGuire will owe water and sewer CIF's based on 8.26 EDU's. One EDU was paid for by the developer when the site was initially built. This calculation does deviate from the tariff, but is consistent with what the Board has done in the past to calculate EDU's. Motion made by Pete, second by Tommy, with discussion from Jacquelyn, to accept staff recommendations to charge the water and sewer fees at 8.26 EDU's. Jacquelyn had several questions on staff's calculation since it was much different than the tariff calculation. She was against not following the tariff. The Board approved the motion to accept staff's recommendation. Jacquelyn opposed.

Next discussed was the Draft Safety Management Plan. Kristen provided that staff has been working with a safety consultant and drafted an evolving safety plan. She requested the Board review and approve so she can distribute out to all staff. The Board will provide comments to Kristen for approval at the next meeting. Motion by Duke, second by Tommy, with discussion from Jacquelyn, the Board approved the provided document as a working draft subject to change with the Board's comments, and prepare for final approval at a later meeting.

The Board next discussed the Huntfield Pump Station Approval of Two (2) New Pumps. Kristen noted that up until recently, we have been transferring flows through the Huntfield pump station from Tuscawilla to the Charles Town wastewater plant. Staff would like to purchase two additional pumps for the second chamber to allow for needed maintenance of the existing two pumps. The two additional pumps will cost roughly $40,000.00 and will be paid for out of the CIF fund, specifically collected for the Huntfield pump station. Motion by Jacquelyn, second by Duke, with discussions from Jacquelyn, the Board approved the purchase of two new pump for the Huntfield pump station.

Next was the Presentation and Review of the Proposed FY21 Water and Sewer Budget Revisions. Kristen and April provided the revisions to the operating budget was to reflect line items from the 2020A bond closing, along with a few other minor revisions. Motion by Duke, second by Tommy, with discussion from Jacquelyn, the Board approved the proposed FY21 water and sewer budget revisions.

Next, motion by Duke, second by Pete, the Board approved convening into Executive Session pursuant to the following statutory exception to the Open Governmental Proceeds Act: WV State Code Section §6-9A-4(b)(12) – To discuss any matter which, by express provision of federal law, or state statute or rule of court is rendered confidential, or which is not considered a public record within the meaning of the Freedom of Information Act, specifically in this case, matters protected by Attorney-Client Privilege that relate to advanced construction project planning. Jacquelyn opposed. The Board declared executive session over at 5:06 PM. There were no action items. Jacquelyn expressed her

objection to the executive session based on the agenda language for the item not being sufficient nor did it provide any clarity for the public. The Chairman provided the item referenced a property on Patrick Henry Way.

The Chairman next opened the floor for discussion on RK&K Task 5 – Sewer Model Additional Engineering Efforts. Kristen explained concerns did not surface until the delivery of the final report that there were hours in excess of the contract amount. John Cole noted the budget was exceeded by $10,307.01 toward this effort. Motion by Pete, second by Duke, with discussion from Jacquelyn, the Board approved splitting the difference of the total exceedance to pay RK&K.

Next discussed was the Utility Manager Report. Kristen briefed the Board on this month's efforts including updates on the property auctions for Tuscawilla and Patrick Henry on March 27, the March 24th Open Meetings Act Training by John Stump, sewer strategic plan comments due by March 12th, the initiation of the Phase 1 Hydrogeological Study for the water plant, a task order for a discharge line, the award of a $50,000 grant for the source water monitoring panel for the river and PSC training options. Kristen also provided an update on rate equalization. The Ordinance Committee did endorse the Board and staff's recommended option. Tim Stranko is now working on a draft ordinance to be presented at the March 18th Ordinance Committee and if approved, it will go back to City Council by April 5th. Kristen also provided that a sewer availability letter has been received from County Club Commons and a formal request from Sleepy Hollow Golf Course for their redevelopment. Jacquelyn had several questions on the report. The Chairman did not have any updates to report.

The Approval of Bills was next discussed. Motion by Tommy, second by Duke, with discussion from Jacquelyn, the Board approved the payment of bills.

The meeting was adjourned at 5:37 p.m. The March 24th regular meeting will be held virtually at 4:00 p.m.

_____ _____

Chairman Secretary



DRAFT SAFETY MANAGEMENT PLAN

2021

CHARLES TOWN UTILITY BOARD

661 South George Street, Suite 101
Charles Town, West Virginia 25414

Phone: (304) 725-2316

Table of Contents

BACKGROUND 5
ORGANIZATION AND RESPONSIBILITY 6
INCIDENT MANAGEMENT 7
WORKPLACE INJURY PROCEDURE 8
MANAGEMENT INVOLVEMENT 8
EMPLOYEE SAFETY ORIENTATIONS 9
WEEKLY TAILGATE SAFETY MEETINGS 10
SAFETY TRAINING AND DEVELOPMENT 12
JOB HAZARD ANALYSIS 12
ACCIDENT INVESTIGATION, REPORTING AND RECORDKEEPING PROCEDURES 15
RETURN TO WORK POLICY 16
FALL PREVENTION AND PROTECTION GUIDELINES 19
CONSTRUCTION EQUIPMENT AND TRUCKS 24
CRANE SAFETY 24
FLEET SAFETY POLICY 25
CELLULAR TELEPHONES 27
EXCAVATION AND TRENCHING 28
LOCATION OF UNDERGROUND UTILITIES 32
OVERHEAD POWERLINES 35
LOCK-OUT / TAG-OUT PROCEDURE 36
IMPALEMENT PREVENTION 39
HAZARD COMMUNICATION PROGRAM 40
ENCLOSED AND CONFINED SPACES 43
CONFINED SPACE OPERATING PROCEDURE 43
FIRE PREVENTION AND PROTECTION 50
HAND AND POWER TOOLS 51
HEAT STRESS PREVENTION PROGRAM 52
COLD STRESS PREVENTION PROGRAM 54
PERSONAL PROTECTIVE EQUIPMENT 56
TRAFFIC CONTROL 57
RESPIRATORY PROTECTION PROGRAM 58
SUBCONTRACTOR SAFETY 65

DRAFT

POLICY OF DRUGS AND ALCOHOL..... 66

APPENDIX A - FORMS.....67

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Charles Town Utility Board (CTUB)
Safety and Health Plan
2021

Adopted:

_____

The CTUB Safety and Health Plan has been reviewed and endorsed by the Board of Directors and Utility General Manager. Personnel responsible for the implementation and enforcement of this program have indicated their acceptance and commitment to the provisions within the plan by having signed below.

Approved by:

Kristen M. Stolipher, Utility General Manager _____

Travis Markley, Safety Coordinator _____

Ashley Stottlemyer, Human Resource Manager _____

Chief Operator, Water Operations, Chris Hutzler _____

Chief Operator, Sewer Operations, Joe Burris _____

Maintenance Operations Manager, Butch Goff _____

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BACKGROUND

SAFETY POLICY STATEMENT:

CTUB has the responsibility for maintaining a safe, healthful and productive work environment for our employees on our work sites. The protection of our employees, property, the public and the environment are essential to the efficient and successful completion of every project. The prevention of accidents is more than just good business it is our moral obligation. Accident prevention is important to us because safety is a **VALUE**.

We also understand that safety is about **PEOPLE** and is not an arbitrary set of rules and regulations. It is because our employees are our most valuable assets that we insist on their active participation and hold them accountable for conducting their work safely. There is no job or service so urgent that we cannot take the time or reasonable expense to follow all the provisions of this accident prevention program and conduct the work safely.

This manual establishes the minimum safety standard for managers, supervisory personnel and employees. It assigns responsibilities; establishes standard procedures for hazard evaluation, employee and supervisor training, program enforcement, accident investigation and record keeping; and lists the minimum accident prevention requirements for typical operations. The following principles are key to a successful safety program:

- All injuries and occupational illnesses can be prevented
- Safety is everyone's responsibility
- Management is directly accountable for preventing injuries and occupational illnesses
- Training is an essential element for safe workplaces
- Daily jobsite safety inspections must be conducted and documented
- Safe work practices must be reinforced and all unsafe acts and conditions must be corrected promptly
- The investigation of injuries and occupational illnesses, as well as potential injuries and illnesses, is essential
- Safety off the job is an important element of the overall safety effort
- Preventing injuries and occupational illnesses is good business
- People are the most critical element in the success of a safety and health program

RESPONSIBILITY AND AUTHORITY

If the Safety Coordinator, Supervisor or any other employee observe unsafe acts or conditions, all have the full support and authority to stop work and secure the work area.

SUBCONTRACTORS AND SUPPLIERS:

Provisions for control and coordination of subcontractors is described in both the Organization and Responsibilities section.

TRAINING:

Training is an ongoing process within the organization and is conducted both formally and informally.

IINSPECTIONS:

Safety inspections and the correction of deficiencies is described within the section of the same title. All levels of the organization have identified responsibilities within this section.

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ACCIDENT REPORTING:

CTUB General Policies and procedures for accident / incident reporting are outlined within the sections titled Incident Management, Accident Investigation and Reporting, and Appendix A. Employees are required to notify their supervisors who in turn will brief the Safety Coordinator. Subcontractors are required to report employee injuries and incidents to the Safety Coordinator.

MEDICAL SUPPORT:

The project will maintain an adequate number of first aid kits and personnel trained in first aid and CPR. In the event of an injury requiring medical attention, maps and contact information can be found in the Emergency Action. All supervisory personnel will be trained on and receive a copy of the Emergency Action Plan.

ADMINISTRATION:

All CTUB staff are responsible for the administration of this policy.

ORGANIZATION AND RESPONSIBILITY

A. SAFETY COORDINATOR

The Safety Coordinator will work with all supervisors and staff to assist in the daily administration of the accident prevention program. The Safety Coordinator's responsibilities should include, but not be limited to, the following:

- Conducting or supervising the safety orientation of supervisors and employees.
- Organizing and coordinating of medical facilities and other emergency plans.
- Organizing, monitoring and helping with safety meetings and conducting training programs to provide information regarding specific safety issues.
- Inspecting work areas and operations to identify, and if necessary, initiating actions to correct, unsafe work practices or unsafe conditions.
- Assisting in the procurement of necessary safety equipment and materials.
- Coordinating safety responsibilities with other project personnel.
- Communicating with customers, clients and authorities on safety related matters.
- Assisting supervisors in the investigation of accidents to determine cause and corrective measures.
- Assisting supervisors during regulatory agency inspections and investigations.
- Preparing and maintaining safety records and reports.
- Assisting supervisors in the development or review of a job hazard analysis for each major phase of work and for types of operations that have not been analyzed.
- Planning and developing any additional jobsite accident prevention requirements recognized during construction.
- Maintaining a cooperative relationship with the Company and Joint Venture Partner's Safety Departments.
- Coaching and counseling supervisors on safe operations.
- Involvement in and enforcing the provisions of this accident prevention program and any other rules established for their particular operation.
- Considering the experience and qualifications of personnel before their assignment.

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- Ensuring that newly hired or promoted supervisors receive a safety orientation before their assignment.
- Verifying that the supervisors under their authority are regularly performing safety meetings, jobsite inspections.
- Assisting in the investigation of violations of this Accident Prevention Program.
- Administering discipline, as necessary, to the supervisors and employees under their authority.

B. SUPERVISOR & FOREMEN

Each Supervisor is responsible for safe work procedures and the safety of everyone within their scope of authority. The Supervisor's responsibilities include the following:

- Coaching and counseling personnel on safe operations.
- Involvement in and enforcing the provisions of this accident prevention program and any other work practices or rules established for their particular operation.
- Considering the experience and qualifications of personnel before their assignment.
- Ensuring that newly hired or promoted personnel receive a safety orientation before their assignment.
- Instructing new employees in the recognition and avoidance of hazards.
- Encouraging employees to report any unsafe conditions or unsafe practices.
- Verifying that foremen are conducting safety meetings, inspections of work areas and operations and initiating actions to correct, unsafe work practices or unsafe conditions.
- Assisting in the development and review of the job hazard analysis for each major phase of work and for types of operations that have not been analyzed.
- Participating in weekly toolbox safety meetings conducted by the safety coordinator.
- Attending and participating in monthly supervisor safety meetings.

C. EMPLOYEES

Employees are responsible for following the safe work procedures established to protect them. Employees' responsibilities include the following:

- Following safety instructions, rules and regulations.
- Using personal protective equipment and safety devices provided or required.
- Reporting any unsafe conditions or unsafe work practices to their supervisor or foreman.
- Reporting any injury to their supervisor or foreman immediately (the day the injury occurs).
- Actively participating in "toolbox" or "tailgate" safety meetings.
- Offering suggestions for improvement of our program.

INCIDENT MANAGEMENT

CTUB will maintain a written Emergency Action Plan as part of its field operations. This plan will detail the responsibilities of project personnel in the event of a serious incident.

This plan will address the following:

AUTHORITY: To identify the names of individuals and alternates and to identify what each position is responsible for in the event of an accident.

INJURIES: In addition to the emergency phone numbers posted in the offices, this plan will outline specific personnel assignments in the event of an accident involving serious injury. A list of emergency phone numbers and emergency response procedures shall be distributed to each supervisor.

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HAZARDOUS MATERIALS: The plan will list, by name and phone number, contacts in local government agencies that must be notified in the event of an incident involving hazardous materials.

WORKPLACE INJURY PROCEDURE

In the situation that a workplace injury or accident occurs. The following steps shall be taken immediately:

1. Notify your immediate supervisor of the injury. Either the employee or Supervisor must also notify the Utility Manager, HR Manager, and Safety Coordinator.
   ***If it is an emergency, call 911 or go to the nearest emergency room.
2. Employees should use (if possible) the Valley Health Urgent Care at 100 Oak Lee Drive, Ranson for all workplace injuries. The Supervisor or Safety Coordinator may accompany the employee to the facility.
3. Valley Health will contact the HR Manager for authorization to provide care and fill out the appropriate Workers Compensation forms on file. They will forward this form to the HR Manager.
4. If the employee chooses to use a different healthcare facility, employee must ensure the appropriate Workers Compensation form is completed by the treating physician. Please contact the HR Manager if the healthcare facility does not have the appropriate forms. Return the form to the HR Manager after your visit for your claim to be covered.
5. The HR Manager will forward all injury forms to Encova (Workers Compensation provider).
   ***All workplace injuries must be reported within 48 hours of the injury to be covered by Workers Compensation.
6. For vehicle accidents, HR Manager will contact the Motor Vehicle Insurance Company (Assured Partners) to begin a vehicle claim.
7. Employees will be subject to a drug test at a healthcare facility for any motor vehicle accident.
8. Safety Coordinator will complete an Incident Review Form to investigate the injury or accident.
9. Hospital admissions or overnight hospital stays will be reported to OSHA by the Safety Coordinator.
10. The employee may return to work when advised by the treating physician. With the coordination of the treating physician, Utility Manager and immediate Supervisor, a Return-to-Work plan will be evaluated if needed.

MANAGEMENT INVOLVEMENT

It has become increasingly more evident that those departments in an organization where management is actively involved in the process of identifying and eliminating unsafe behaviors, are more effective in creating and maintaining safer work areas for employees and the general public. Understanding that this direct involvement establishes the foundation for the rest of our accident prevention processes, it becomes increasingly more important that we clearly define what Management Involvement actually means.

MANAGEMENT should be broadly understood as anyone that supervises other employees at any level on the Project. Specifically, this group begins with the local foreman and extends upward in the organization to the Supervisors, then to the Utility Manager.

INVOLVEMENT should be understood as the participation level of management in specific actions that lead to the creation and maintenance of safer work places. Simply put, it is not enough to just instruct our employees to “be safe”. Instead, managers must make time to go out into the work environment and interact with employees, while identifying areas of potential risk. Where risk is identified the manager is required to take direct action to reinforce that productivity, quality, safety and morale are all values that they personally hold and expect of each individual employee that works for CTUB.

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EMPLOYEE SAFETY ORIENTATIONS

INTRODUCTION

A proper, effective, safety behavior begins with the hiring and orientation process. In order to achieve successful safety performance, responsible, capable employees are to be hired and oriented to company safety policies. A thorough orientation by the safety staff and foreman, with a follow-up with the new employee's supervisor, is our best tool for getting the new employee started off on the right foot.

PROCEDURE

The Supervisor and/or Foreman in combination with the Safety Coordinator are responsible for providing a safety orientation for each prospective employee within their respective area of responsibility. The Employee Safety Orientation includes the introduction to CTUB Safety Plan and a review of the expected work duties and workplace hazards.

Supervisor/Foreman: The Supervisor and/or Foreman is the CTUB authority nearest to the worker. They are immediately responsible and will be held accountable for the performance of the worker. They must train and lead the worker so that performance is acceptable to CTUB standards. The Supervisor and/or Foreman will:

1. Describe the work he/she will perform and how it relates to the entire project.
2. Review the New Employee Safety Orientation checklist with the employee.
3. Introduce the new employee to all other crewmembers.
4. Describe the procedure to be followed in case of injury to the new employee or to others.
5. Physically show the location of first-aid equipment, fire extinguishers, sanitary facilities, drinking water, telephones, radios, dry shacks, tool shacks, parking areas, and offices.
6. Describe the procedure to be followed in case of fire and major incident.
7. Continually monitor the new employee's work to be sure the employee's skills are adequate for the work assignment. Under no circumstances is a new employee to work away from immediate supervision until the foreman knows their capabilities.

DOCUMENTATION: The Human Resource Manager has ultimate responsibility to assure all paperwork and credentials are filed with each employee profile.

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WEEKLY TAILGATE SAFETY MEETINGS

The Tailgate Safety Meeting is an effective way for CTUB to provide employees an opportunity to learn about and address job specific safety concerns. When performed, this meeting reinforces the part that each individual plays in accident identification and elimination. As a part of their commitment to involvement supervisors at every level of our business are required to attend and actively participate in these meeting as well.

Because these meetings represent the most significant part of the ongoing safety training of our employees, it is extremely important that they be conducted in a manner consistent with their value. To that end we have established the following guidelines for conducting a Tailgate Safety Meeting of Value:

PREPARING FOR THE MEETING

1. Prior to conducting the meeting familiarize yourself with the material to be discussed.
2. Once you have familiarized yourself with the material of the meeting, apply it to the work that you will be performing during the week. Think about how your employees can apply this knowledge to their work.
3. Whenever possible find project specific equipment/materials to use during your presentation to demonstrate your key points. Being able to see/feel/touch/smell an actual example will go a long way towards reinforcing what they are hearing.
4. Be prepared to share with your employees your personal experiences that relate to the subject matter.

CONDUCTING THE MEETING

1. Gather your audience in a manner that will allow their participation. Typically, having employees form a circle will allow the best opportunity for hearing and involvement. This will also provide a forum where no one individual stands-out and lends to improved participation.
2. Give the presentation in your own words. You can have the outline and your notes in front of you for reference, but try not to just read what's on the paper. The primary reason for saying it in your own words, as opposed to reading it, is that when you say it in your own words your employees are more apt to believe that it is your personal standard and not just the Company line.
3. Conduct the meeting in a manner that encourages and allows the participation of the audience. One way this can be accomplished is by making the talk a discussion. Allow time for them to ask questions, offer suggestions for improvement and share their own personal experiences.
4. When possible review the safe and unsafe behaviors that you identified during your jobsite safety inspections from the week before. Remember, the most critical part of an effective jobsite safety inspection is to communicate with employees the results of the inspection process.
5. Ask for comments from any other supervisors that are attending the meeting.
6. Thank your employees for their participation in the meeting, letting them know that their input and participation is valuable.

THINGS TO REMEMBER

1. This is your meeting. It is your opportunity to set the standard of care that you will be providing for the employees that work under you.
2. The highest level of performance you can expect from your employees is determined by the minimum standards that you establish.

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MONTHLY JOB WIDE MEETINGS

INTRODUCTION

A Job Wide Safety Meeting shall be held every month.

Every attempt will be made to make these meetings as effective as possible. Crews may be broken up for different meeting dates if deemed necessary. i.e. Maintenance crews on Monday, Sewer Department crews on Tuesday, etc. Mass meetings should be presented in dominant languages of the employees attending to ensure understanding.

Additional Job Wide Safety Meetings are to be held as directed by the Supervisor.

All Job Wide Meetings should at a minimum include a review of:

- Any injuries, incidents or near miss occurrences.
- Overall project performance versus goals.
- Targeted policies and procedures relating to the greatest perceived hazards.
- Training topics related to upcoming week.
- Any special emphasis or incentive programs.
- Recognition of personnel achieving major milestones in safety, such as completion of first 90 days or no injuries, etc.

A copy of the meeting minutes and attendance roster shall be kept on file with the Safety Coordinator.

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SAFETY TRAINING AND DEVELOPMENT

INTRODUCTION

The training and development of workers starts the day an individual begins work. Training starts with the new hire safety orientation and continues throughout the duration of employment.

CTUB will conduct supervisory safety training quarterly or more frequently. The Safety Coordinator will determine training topics and assign to personnel with the appropriate experience for preparation and delivery. Other sources of training may include regulatory agencies, safety associations and vendors.

CTUB will maintain a matrix of supervisory training completed.

JOB HAZARD ANALYSIS

INTRODUCTION

A Job Hazard Analysis is required for each type of work operation that will be performed. The superintendent will assist foremen in preparing a Job Hazard Analysis. Other supervisors and craft personnel will be asked and encouraged to contribute ideas based on their work experience and knowledge.

It shall be policy to complete a job hazard analysis for all work operations. Each hazard analysis will have minimum review by the Safety Coordinator. The crew foreman and superintendent shall review all Hazard Analyses before starting work, regardless of severity potential.

Each work operation will be classified based on its relative risk. The Project Manager will assign a classification from an "A" (most risk) to a "C" (minimal risk). Following is a description of "categories of risk":

PURPOSE

The purpose of the Job Hazard Analysis Program is to heighten awareness to hazards inherent with construction and foster proactive employee involvement in planning work procedures.

PROGRAM

A Job Hazard Analysis is one of the most important tools in any Safety Management Plan. As a rule, the following factors should be incorporated (not all-inclusive):

- Access
- Pinch Points
- Working (environmental) Conditions
- Housekeeping
- PPE
- Fall Hazards and their Preventive/Protective Systems
- Traffic Control
- Work Actions; including, lifting, carrying, posture, tool usage, etc.
- Hazardous Materials/SDS
- Overhead Power lines and Other Utilities
- Subcontractor Operations
- Protection of the Public
- Night Operations

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The Job Hazard Analysis shall be updated after a review with the crew and anytime a hazard not previously identified is encountered while performing an operation. The Job Hazard Analysis shall also be updated as required after an incident or "near miss" on an operation. Following a revision, the Job Hazard Analysis shall be reviewed with the crew. Revisions must be provided to the Safety Manager for replacement of the original Job Hazard Analysis. Please see Appendix A for Job Hazard Analysis Form.

Please see Appendix A for Job Hazard Analysis Form.

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INCIDENT REVIEW FORM

INTRODUCTION

An Incident Review will be conducted and documented for near misses where no damage or injuries occur but a serious loss/risk exposure is identified and all incidents resulting in personal injury, damage to equipment or property, and liability incidents such as 3rd party and rental damage.

Superintendents of the operation should assist the Safety Coordinator with the review promptly after the incident with all involved employees, including Foreman.

The review form, when completed shall be retained by the office and a copy provided to the Utility Manager.

Please see Appendix A for Incident Review Form.

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ACCIDENT INVESTIGATION, REPORTING AND RECORDKEEPING PROCEDURES

INTRODUCTION

Accidents are unintentional incidents that may or may not result in an injury or property damage. Effective accident prevention depends on the complete investigation of all accidents, even if there is no injury or damage to property (near misses), in order to identify potentially serious losses. **ALL** accidents will be investigated by the immediate supervisor of the operation involved. Whenever possible photographs of the accident scene should be taken as part of the investigation.

INJURY TO EMPLOYEE

1. All employees will be instructed and required to report all work-related injury or illness to their supervisor immediately (the same day).
2. The supervisor of an injured employee will investigate the causes, determine corrective measures. A final report (Appendix C Supplement) will be completed within 5 days of the incident and retained in the incident file on site.
3. The supervisor of an injured employee should notify the Safety Coordinator to determine if medical treatment of an injured employee is necessary.

SERIOUS INJURY, ILLNESS OR FATALITY

1. Any case involving serious injury, illness or death must be immediately reported by telephone to the Safety Coordinator and office.
2. Serious injury or illness, for reporting purposes, includes any injury or illness which requires hospitalization in excess of 24 hours for other than observation, or which results in the loss of any member of the body, or causes any serious degree of permanent disfigurement.
3. The scene of any such serious accident should not be disturbed, except for rescue or emergency purposes, until released by a management official.

OSHA LOG OF OCCUPATIONAL INJURIES AND ILLNESS

The Log of Occupational Injuries and Illness, OSHA Form No. 300 will be maintained at the Office. A copy of the current log will be distributed to the Project in accordance with the applicable regulations. These records will be preserved for five years.

See Appendix A and/or Page 8 for Workplace Injury and Accident Procedure

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RETURN TO WORK POLICY

INTRODUCTION

This policy is in place to ensure CTUB provides meaningful work activity for employees who are temporarily unable to perform all, or portions, of their regular work assignments or duties. This policy applies to employees suffering from either work or non-work-related injury or illness. The goal is to allow valued company employees to return to productive, regular work as quickly as possible. By providing temporary transitional or modified work activity, injured employees remain an active and vital part of the company. Studies show that a well-constructed Return to Work Policy reduces lost time days, allows workers to recover more quickly and makes for a more positive work environment.

SCOPE

All active employees who become temporarily unable to perform their regular job due to a compensable work related or non-work-related injury or illness may be eligible for transitory work duties within the provisions of this program. Return to Work tasks may be in the form of:

- Changed duties within the scope of the employee's current position
- Other available jobs for which the employee qualifies outside the scope of his or her current position
- An altered schedule of work hours

DEFINITIONS

- **Transitional duty** is a therapeutic tool used to accelerate injured employees' Return to Work by addressing the physical, emotional, attitudinal and environmental factors that otherwise inhibits a prompt Return to Work. These assignments are meant to be temporary and may not last longer than 90 days, though CTUB permits multiple 90-day assignments back-to-back if it is medically warranted.
- **Alternate duty** is a part of CTUB Return to Work Policy that is designed as a placement service for individuals who have reached maximum medical improvement and are still unable to perform the essential functions of their pre-injury job.

APPLICABILITY

Length of Duty

If work is available that meets the limitations or restrictions set forth by the employee's attending practitioner, that employee may be assigned transitional or modified work for a period not to exceed 90 days. Transitional or light duty is a *temporary program*, and an employee's eligibility in these reduced assignments will be based strictly on medical documentation and recovery progress.

Daily Application

An employee's limitations and restrictions are effective 24 hours a day. Any employee who fails to follow his or her restrictions may cause a delay in healing or may further aggravate the condition. Employees who disregard their established restrictions, whether they are at work or not, may be subject to disciplinary action up to and including termination.

Qualification

Transitional or modified duty will be available to all employees on a fair and equitable basis with temporary assignments based on skill and abilities. Eligibility will be based upon completion of the Return to Work Evaluation Form by the employee's attending medical professional. An employee on modified duty will be considered part of the regular shift staffing, with recognition of the employee's limitations within the department.

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RESPONSIBILITIES

The following responsibilities apply to various levels within the company.

- **Senior management** will ensure the policy's enforcement among all levels at CTUB and will actively promote and support this policy and the Return to Work Program as a whole.
- **Supervisors** will support the employee's Return to Work by identifying appropriate modified assignments and ensuring the employee does not exceed the physician's set restrictions. Supervisors will also stay in regular contact with absent employees and communicate CTUB attendance expectations clearly. They are also responsible for reporting any problems with employees and this policy to the Return to Work manager or program supervisor.
- **Injured workers** will notify their supervisors in a timely manner when their condition requires an absence. They will closely follow their physician's medical treatment plan and actively participate in CTUB's Return to Work Program, which includes following all the guidelines of this policy. Injured employees will also help supervisors identify potential options for transitional duties that they discover. While supervisors are responsible for maintaining constant communication with the injured employee, the worker also has the obligation to maintain contact with CTUB about their condition and status. The injured worker will complete all the required paperwork in a timely manner.

PROCEDURE

Work Schedule

CTUB will do everything in its power to tailor the restricted work schedule to the injured employee's normal, pre-condition work schedule. However, depending on the job limitations, it may be necessary for the employee to take on a specifically designed, temporary schedule to accommodate these restrictions.

Communication Expectations

If an employee is unable to work in any capacity and the company approves of the absences, the employee must stay in constant communication with the Return to Work Program Manager and the direct supervisor. Each must receive an update of the employee's medical status on at least a weekly basis. Failure to do so may result in a reduction in available benefits and discipline up to and including termination.

Medical Appointments

CTUB does allow employees to schedule medical appointments during working hours.

The employee's physician must complete the Return to Work Evaluation Form for each visit to evaluate the impairment. It is the employee's responsibility to inform CTUB of his or her medical status after each doctor visit. This applies to both work-related and non-work-related injuries and illnesses that interfere with assigned.

Employee Procedures

See Appendix A and/or Page 8 for Workplace Injury and Accident Procedure

REFUSAL TO PARTICIPATE

If you are unable to return to your regular job but are capable of performing transitional duty, you must return to transitional duty. Employees who choose not to participate in the CTUB Return to Work Program or follow all regulations in this Return to Work Policy may become ineligible for state workers' compensation benefits and, in some cases; refusal to participate may be a basis for termination. Unpaid Family Medical Leave will apply upon refusal and disability benefits will cease.

DRAFT

FALL PREVENTION AND PROTECTION GUIDELINES

I. INTRODUCTION

A. These guidelines establish the minimum fall prevention and protection requirements for all employees working at or over 6 feet above the ground or the next lower level. They contain requirements for fall protection from structures, ladders, and aerial lifts. Fall protection may be required at lower levels if employees are exposed to falls.

B. The intent of these guidelines is to prevent employees from falling off, onto or through working levels and to provide protection from falling objects.

C. The methods found in this guideline are not the only methods by which protection can be achieved, and these guidelines and systems do not provide protection for every situation encountered in the workplace.

D. When different or unique applications arise, these guidelines can be used for basic information. If you are not sure how to use these guidelines or you think you have a better alternative please, contact the immediate supervisor and the Safety Coordinator.

II. FALL PROTECTION SYSTEMS and PRACTICES

A. When used for fall protection Personal Fall Arrest and Positioning Device Systems must be used according to the following requirements:

1. Body harnesses and all associated attachments must be labeled and meet the requirements in ANSI Z 359.1 - 1992. A body belt must not be used as part of a fall arrest system.
2. Connectors must be drop forged, pressed or formed steel or made of materials of equivalent strength. They must have a corrosion resistant finish and their surfaces and edges must be smooth to prevent damage to other system components.
3. Dee-rings and snap hooks must have a minimum tensile strength of 5,000 pounds. They must have been proof tested by the manufacturer to a minimum tensile load of 3,600 pounds without cracking, breaking or permanent deformation.
4. Snap hooks must be of the locking type, sized to fit with the member to which they connect and designed and used to prevent disengagement.
5. Horizontal lifelines must be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two. On work platforms where, because of an accident, a horizontal lifeline may become vertical, the device (such as a rope grab) used to connect to the lifeline can lock in both directions.
6. Ropes and straps used in lanyards, lifelines and components of body harnesses must be made from synthetic fibers. Lanyards and vertical lifelines must be protected against cuts or abrasion and have a minimum breaking strength of 5,000 pounds. When using vertical lifelines each employee must use a separate lifeline.
7. Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet or less must be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
8. Self-retracting lifelines and lanyards that do not limit free fall distance to 2 feet or less, rip stich lanyards, and tearing and deforming lanyards must be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

DRAFT

9. Anchorages used for attachment of personal fall arrest equipment must be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached.
10. Personal fall arrest systems, when stopping a fall, must do all of the following:
    a. Limit maximum arresting force on an employee to 1,800 pounds.
    b. Be rigged so that an employee cannot free fall more than 6 feet or contact any lower level.
    c. Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3½ feet.
    d. Have enough strength to withstand twice the potential impact energy of an employee free falling 6 feet or the free fall distance allowed by the system, whichever is less.
11. The attachment point of a body harness used for fall protection must be in the center of the back near shoulder level or above the head.
12. Harnesses and other fall arrest equipment may never be used for hoisting materials.
13. Fall arrest systems and components subjected to impact loading must be immediately removed from service and not used until inspected and determined by a competent person to be undamaged and suitable for service.
14. Rescue plans must be made for a prompt rescue of employees in case of a fall, unless it has been determined that employees can rescue themselves.
15. Personal fall arrest systems must be inspected before each use, for wear, damage or other deterioration. Defective components must be removed from service.
16. Personal fall arrest systems must not be attached to guardrail systems.
17. When personal fall arrest systems are used at hoist areas they must be rigged to allow the movement of the employee only to the edge of the working surface.
18. Positioning devices must be rigged such that an employee cannot free fall more than 2 feet and secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

III. HOLES/COVERS

1. Covers for holes in floors, roofs, and other walking/working surfaces must meet the following requirements:
2. Covers located in roadways and vehicular aisles must be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
3. All other covers must be capable of supporting without failure, at least twice the weight of employees, equipment, and materials that may be set on the cover.
4. All covers must be secured when installed to prevent accidental displacement by the wind, equipment, or employees.
5. All covers must be color-coded or they must be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

IV. TRAINING REQUIREMENTS

1. Each employee who might be exposed to fall hazards must be trained by a competent person qualified in the following areas:
    a. The nature of fall hazards in the work area.

DRAFT

b. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.

c. The use and operation of guardrails, personal fall arrest, safety net warning line, safety monitoring systems, other protection used.

d. The role of employees when using a safety monitoring system.

e. The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.

f. The correct procedures for handling and storage of equipment and materials and the erection of overhead protection.

g. The role of employees in fall protection plans.

h. The federal and state regulations relating to this program.

2. A written certification record, containing the name of the employee trained, the name and signature of the person who conducted the training and the date training was completed must be maintained.

3. Retraining must be conducted when we think that any affected employee who has already been trained does not have the understanding and skill required in the training section listed above, and when changes in the fall protection systems, equipment or workplace render previous training obsolete.

III. LADDERS

A. Ladders must be of proper size, design and condition for the intended use and must not be used as work platforms. Ladders with bent, broken or damaged rungs or side rails must be removed from service.

B. Side rails of job-made ladders must be constructed of dressed "selected grade lumber," or the equivalent, and must not have knots, except an occasional one less than ½ inch in diameter that appears only on the wide face and is at least ½ inch back from either edge. If splicing of side rails is necessary to attain the required length, the splice must develop the full strength of a continuous side rail of the same length.

C. Side rails of single cleat ladders up to 16 feet long must be 2 inch by 4-inch lumber. Side rails of single cleat ladders from 16 to 30 feet in length must be 3 inch by 6-inch lumber.

D. Side rails and middle rails of double cleat ladders up to 12 feet long must be 2 inch by 4-inch lumber. Side rails and middle rails of double cleat ladders from 12 to 24 feet in length must be 2 inch by 6-inch lumber.

E. Cleats of job-made ladders must be clear, straight-grained and absolutely free from knots of any size that appear in the narrow face. Knots appearing in the wide faces of cleats must not exceed a diameter of ¼ inch. Cleats must be uniformly spaced within ¼ inch tolerance, and not farther apart than 12 inches measured from tops of cleats.

F. Cleats of job-made ladders must be inset into the edge of the side rails one-half inch, or fill blocks must be used on the rails between the cleats. The cleats must be secured to each rail with three 10d common wire nails or other fasteners of equivalent strength. Double-head nails must not be used for ladder construction.

G. Single cleat ladders must not exceed 30 feet in length between the base and top landing. If the length required exceeds these maximum lengths, two or more separate ladders must be used, offset

DRAFT

with a landing or platform between each ladder. Guardrails and toe boards must be erected on the exposed sides of the platforms.

H. If a job-made ladder provides the only means of access to a work area for 25 or more employees, or if simultaneous two-way traffic is expected, a double cleat ladder must be installed. Double cleat ladders must not exceed 24 feet in length.

I. Single cleat ladders must be at least 15 inches, but not more than 20 inches, between rails. Double cleat ladders must be at least 18 inches, but not more than 22 inches, between rails.

J. Portable ladders must extend at least 36 inches above the top landing or be secured at the top and equipped with a grabrail. Fixed ladders must extend at least 42 inches above the top of access.

K. All portable ladders must be placed on substantial footing and be tied, blocked, or otherwise secured to prevent their being displaced.

L. Metal ladders may not be used if there is exposure to electrical or explosive hazards.

M. Extension ladders must not exceed 44 feet in length when extended. When extended the ladder sections must have the following minimum overlaps:

1. Two-Section Ladders.

   3 feet for working lengths up to 33 feet.

   4 feet for working lengths 33 to 44 feet.

2. Three-Section Ladders.

   4 feet for each section.

N. Each employee using ladders must be trained, by a competent person, to recognize hazards related to ladders and must know the procedures to be followed to reduce these hazards. The training must include, if applicable, the following areas:

1. The nature of fall hazards in the work area.
2. The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
3. The proper construction, use, placement, and care in handling of ladders.
4. The maximum intended load-carrying capacities of ladders.
5. The federal and state regulations relating to this program.

O. Retraining must be conducted when we think that any affected employee who has already been trained does not have the understanding and skill required in the training section listed above, and when changes in the workplace render previous training obsolete.

IV. AERIAL LIFTS

A. All aerial lifts including extendable boom platforms, articulating boom platforms, vehicle mounted aerial ladders and vehicle mounted vertical towers must be used according to the manufacturer's recommendations. The boom and basket load limits specified by the manufacturer must not be exceeded.

B. Only authorized employees may operate an aerial lift.

C. When working from an aerial lift, employees must wear a body harness and a lanyard attached to the boom or basket. The lanyard must never be attached to any other structure or equipment while the employee is in the aerial lift.

DRAFT

D. Employees must always stand on the floor of the basket and may not sit or climb on the edge of the basket. Planks, ladders or other devices may not be used as a work platform inside an aerial lift basket.

E. When outriggers are used, they must be positioned on pads or a solid surface. Wheel chocks must be used when operating an aerial lift on an inclined surface.

F. Aerial lifts must not be moved with employees in an elevated basket, unless the aerial lift was specifically designed for that type of operation.

G. Each employee who works while on an aerial lift must be trained, by a qualified person, to recognize and control or reduce the hazards associated with the use of the type of aerial lift being used.

DRAFT

CONSTRUCTION EQUIPMENT AND TRUCKS

1. All construction equipment will be maintained in safe working condition and will be appropriate and adequate for the intended use.
2. Equipment will be operated only by authorized personnel. Operators of equipment, machinery or vehicles must be qualified and properly licensed, if required, for the operation involved.
3. Equipment maintenance is to be performed only by qualified mechanics.
4. Equipment operators and truck drivers will make a pre-shift walk around safety inspection of their equipment, and any conditions that effect safe operation will be corrected before further use.
5. Equipment will not be operated unless all required safety devices are in place and functioning properly.
6. Careless, reckless or otherwise unsafe operation or use of equipment will result in discipline and may constitute grounds for dismissal.
7. Seat safety belts will be used by the operators of equipment provided with ROPS.
8. Mobile equipment will not be left unattended unless parked securely to prevent movement, with all ground engaging tools lowered to the ground, brakes set and the engine off.
9. Equipment parked at night will be lighted, barricaded or otherwise clearly marked where exposed to traffic.
10. Personnel will not be transported in vehicles or ride on equipment that are not equipped with seats for passengers.
11. When fueling equipment or vehicles with gasoline or liquefied petroleum gas (LPG) the engine will be shut down.
12. Equipment, tools and materials hauled on pickups and flatbed trucks will be secured to prevent them from falling onto the road.
13. Equipment, pickups and passenger vehicles not necessary for performing the work should be parked well away from the work area to reduce congestion and avoid collisions. Parked vehicles will be at a minimum of 8 feet from the outer edge of active travel lanes.

CRANE SAFETY

INTRODUCTION

CTUB strives at all times to perform its work in the safest manner reasonably possible. The use of cranes and similar types of lifting equipment can pose special hazards for the Corporation and its employees.

DESIGNATED OPERATOR

STATEMENT

Only operators designated through the CTUB Designated Operator Program and/or certified by an accredited crane operator testing organization such as CCO or CIA, and trainees under direct supervision of theses designated operators are allowed to operate cranes, hoists and other types of lifting equipment.

*A **Qualified** person as defined by ASME/ANSI B30.5 5-0.2.2 is a person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter and work.*

Qualified maintenance and vendor personnel are allowed to operate the above stated equipment only when troubleshooting, Requirements for an assembly/disassembly director per OSHA will be met prior to assembly/disassembly and testing when required.

DRAFT

FLEET SAFETY POLICY

ORGANIZATION AND RESPONSIBILITY

DEPARTMENT SUPERVISOR

The Supervisor of each department will manage the daily administration of the fleet for that specific department. The responsibilities include, but are not limited to, the following:

- Keeping all vehicle inspections and maintenance up to date
- Ensuring daily walk-arounds are completed by employees.
- Scheduling maintenance and vehicle repairs as needed
- Assigning and/or rotating vehicles and employees.
- Helping supervisors investigating motor vehicle accidents, regardless of severity.

DRIVERS

Drivers are responsible for following the safe work procedures established to protect them. Drivers' responsibilities include at least the following:

- Maintaining a current valid drivers license with the proper endorsements
- Authorizing CTUB to review driving records annually by signing Release Authorization Form (DMV-101-PS2)
- Knowing and obeying the applicable laws, regulations, rules and safety instructions.
- Complying with the controlled substance and alcohol testing requirements.
- Conducting a pre-operation inspection of the vehicle they will be operating.
- Reporting any unsafe conditions or unsafe work practices to their supervisors.
- Conducting a post-operation inspection of the vehicle they operated.
- Reporting all their traffic violations the Project Fleet Supervisor.
- Actively participating in "toolbox" or "tailgate" safety meetings.
- Offering suggestions for improvement of our program.

Administration

The Safety Coordinator and Utility Manager will provide assistance to the Department Supervisors in an advisory capacity.

DRAFT

CTUB CONTROLLED SUBSTANCE AND ALCOHOL TESTING PROGRAM POLICY

We have the responsibility for maintaining a safe, healthful and productive work environment for our employees, for employees of third parties on our work sites and for the protection of property and the general public. Drivers who work under the influence of controlled substances or alcohol pose serious safety and health risks to themselves, their fellow workers and the general public. The possession, use, sale or being under the influence of controlled substances or alcohol in the work place presents an unacceptable risk to our employees and us.

All CTUB Employees must adhere to the driver safety requirements in the City of Charles Town Employee Handbook.

REQUIRED CONTROLLED SUBSTANCE TESTING

Drivers involved in an any accident during working hours that involves a CTUB vehicle may be required to participate in alcohol or controlled substance testing according to the City of Charles Town Employee Handbook or DOT regulations. A management official should determine if testing is necessary or appropriate as soon as possible after the accident.

DRAFT

CELLULAR TELEPHONES

INTRODUCTION

This policy outlines the use of personal cellphones at work and the safe use of CTUB cellphones by employees while driving.

PROCEDURES

Personal cellphones

Excessive personal calls during the workday, regardless of the phone used, can interfere with employee productivity and be distracting to others. All employees are to make any personal calls during breaks and meal periods and to ensure that friends and family members are aware of this policy.

CTUB will not be liable for the loss of personal cellphones brought into the workplace.

Personal use of company-provided cellphones

When job or business needs demand immediate access to an employee, the company may issue a business cellphone to an employee for work-related communications.

Employees in possession of company equipment such as cellphones are expected to protect the equipment from loss, damage or theft. Upon resignation or termination of employment, or at any time on request, the employee may be asked to produce the phone for return or inspection.

Safety issues for cellphone use

All employees are expected to follow applicable local, state and federal laws and regulations regarding the use of cellphones at all times.

Employees whose job responsibilities include regular or occasional driving and who are issued a cellphone for business use are require to refrain from using their phone while driving; use of a cellphone while driving is not required by the company. Safety must come before all other concerns. Regardless of the circumstances, including slow or stopped traffic, employees are required to pull off to the side of the road and safely stop the vehicle before placing or accepting a call; employees may use hands-free operations. Employees are required to refrain from discussion of complicated or emotional matters and to keep their eyes on the road while driving at all times. Special care should be taken in situations where there is traffic or inclement weather, or the employee is driving in an unfamiliar area.

Hands-free equipment will be provided with company-issued phones to facilitate the provisions of this policy.

Employees who are charged with traffic violations resulting from the use of their phone while driving will be solely responsible for all liabilities that result from such actions.

VIDEO OR AUDIO RECORDING DEVICES

The use of camera phones, PDAs, or other audio or video recording-capable devices within the company may constitute an invasion of employees' personal privacy and may breach the confidentiality of CTUB trade secrets or other protected information. This prohibition is specifically applicable to restrooms and locker rooms.

SPECIAL RESPONSBILITIES FOR MANAGERIAL STAFF

As with any policy, management staff members are expected to serve as role models for proper compliance with the provisions above and are encouraged to regularly remind employees of their responsibilities in complying with this policy.

CONSEQUENCES FOR VIOLATION

Employees violating this policy will be subject to discipline, up to and including termination of employment.

DRAFT

EXCAVATION AND TRENCHING PROGRAM

INTRODUCTION

- This program establishes the minimum requirements for all work in excavations and trenches, which may expose employees to the hazards of moving ground.
- This program incorporates the pertinent requirements of the applicable State and Federal safety regulations or excavations and trenching.
- Deviations from the requirements of this program or the applicable regulations and all excavations and trenches deeper than 20 feet will be constructed and maintained in accordance with the design prepared by a registered professional engineer.

GENERAL REQUIREMENTS

- All surface encumbrances adjacent to an excavation that may create a hazard to employees will be removed, secured or supported, as necessary, to protect employees.
- The estimated location of underground installations, such as sewer, telephone, electric, water or other underground utilities will be identified prior to opening an excavation. The regional CALL BEFORE YOU DIG notification center in the area and the owners of underground facilities who may not participate in the regional CALL BEFORE YOU DIG program will be notified of proposed excavation at least 2 working days prior to the start of excavation operations. When excavations approach the estimated location of underground installations the exact location will be determined by probing or hand digging, as necessary, to prevent accidental contact with the underground installations. While the excavation is open, underground installations that create a hazard to employees will be supported, protected or removed, as necessary to protect employees.
- Appropriate access and egress in the form of a stairway, ladder or ramp will be provided in all excavation deeper than 4 feet. In trenches the stairway, ladder or ramp must be within 25 feet of employees.
- Employees exposed to vehicular traffic will wear proper high visibility apparel.
- Employees will be protected from exposure to falling loads that may be dropped by lifting or excavating equipment.
- A warning system for mobile equipment, such as barricades, signals or stop logs, will be provided when equipment is operated adjacent to an excavation and the operator does not have a clear and direct view of the edge of the excavation.
- Excavations deeper than 4 feet will be tested, as necessary, to identify and prevent exposure to hazardous atmospheres. Emergency rescue equipment such as rescue breathing apparatus, a safety harness and line or a basket stretcher, will be available where a hazardous atmosphere exists or could be expected to develop in an excavation.
- Employees will not work in excavations where they will be exposed to the hazards associated with water accumulation. If water accumulation in an excavation is controlled using pumps, the operation of the pumps will be monitored by a competent person.
- The stability of adjacent structures such as buildings, walls and sidewalks will be maintained using a support system, as necessary to protect employees.
- Employees will be protected from loose rock or spoil that could fall or roll into the excavation by placing and keeping such material at least 2 feet from the edge of the excavation.
- Daily inspections of excavations will be made by a competent person to identify and eliminate conditions that could result in possible cave-ins, failure of support systems hazardous atmospheres or other unsafe conditions. Inspections will be conducted before the start of work each day and after every rainstorm or other occurrence that may increase the hazard of moving ground.
- Where employees or equipment are allowed or required to cross over excavations appropriate fall protection in the form of walkways or bridges with standard guardrails will be provided.

DRAFT

REQUIREMENTS FOR PROTECTIVE SYSTEMS

A. Sloping, shoring or shielding will be provided for protection of employees in excavations except where the excavation is made in stable rock or the excavation is less than 5 feet deep and an examination by a competent person does not indicate a potential for cave-in.

B. When sloping or benching is chosen as the method to protect employees in an excavation one of the following optional designs of sloping and benching systems will be used:

Option 1 - Sloping the excavation at an angle of 1½ horizontal to 1 vertical or flatter.

Option 2 - Performing a soil classification and determining the acceptable slopes using Section IV of this program.

Option 3 - The project specific design prepared by a registered professional engineer. Engineered designs must be in writing and must include the name and registration number of the engineer, detailed plans and the calculations used in the design, the magnitude of slopes and the configurations determined to be safe. A copy of the design will be maintained at the jobsite during the use of the engineered system.

C. The materials and equipment used for protective systems will be free of damage or defects that might impair their proper function. Manufactured materials and equipment will be maintained in accordance with the recommendations of the manufacturer. If material or equipment used in a protective system is damaged it must be inspected by a competent person before being reused.

D. The installation and removal of supports will be done in accordance with all the following:

1. Members of support systems will be securely fastened together, as necessary, to prevent sliding, falling, kickouts or other predictable failures.
2. Support systems will be installed and removed in a manner that protects employees from cave-ins, structural collapses or being struck be members of the support system.
3. Individual members of support systems will not be exceeding their design capacity.
4. Before temporary removal of individual members begins, additional precautions will be taken to protect employees, including installing other structural member to support any additional load imposed on the support system.
5. Removal will begin at, and progress from, the bottom of the excavation. Members will be released slowly to reduce the likelihood of failure of the remaining members or a cave-in.
6. Backfilling will progress together with the removal of support systems.
7. Support systems will be closely coordinated with the excavation of trenches and will extend to within 2 feet of the bottom of the trench, but only if the system is designed to resist the forces calculated for the full depth of trench, and there is no indication that there is a loss of soil from behind or below the bottom of the support system.

F. Shield systems will not be subjected to loads exceeding their design capacity.

Shields will be installed in a manner that restricts lateral or hazardous movement in the event of the application of a sudden lateral load. Employee will be protected when entering or exiting the areas protected by a shield. Employees will not be allowed in shields that are being installed, removed or moved vertically. When shield systems are used in trenches, excavation of material to a depth of not more than 2 feet below the bottom of the shield is permitted only if the shield is designed to resist the forces calculated for the full depth of trench, and there is no indication that there is a loss of soil from behind or below the bottom of the shield.

DRAFT

SLOPING AND BENCHING

A. This section contains the specifications for sloping and benching when used as a method of protecting employees working in excavations. **THESE SLOPE AND BENCH SPECIFICATIONS ONLY APPLY IF A SOIL CLASSIFICATION HAS BEEN CONDUCTED.**

B. The maximum allowable slope based on the soil classification will be determined using the following table:

MAXIMUM ALLOWABLE SLOPES

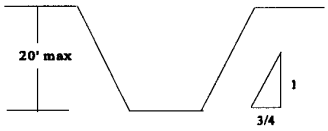
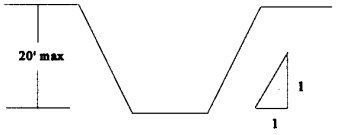
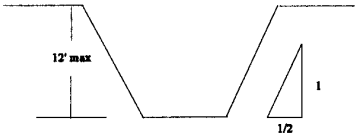
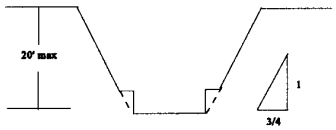
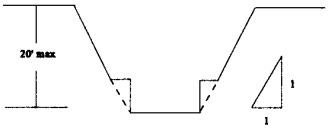
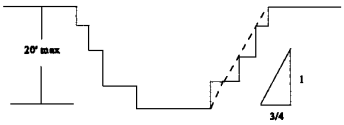
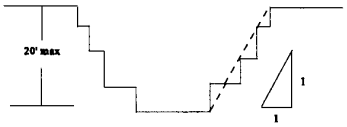
SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)[1] FOR EXCAVATIONS LESS THAN 20 FEET DEEP [3]	
STABLE ROCK	VERTICAL	(90 DEGREES)
TYPE A [2]	¾:1	(53 DEGREES)
TYPE B	1:1	(45 DEGREES)
TYPE C	1-½:1	(34 DEGREES)

NOTES:

1. The numbers shown in parentheses are angles expressed in degrees from the horizontal. The angles have been rounded off.
2. A short-term slope of ½:1 (63 degrees) is allowable in excavations in Type A soil less than 12 feet deep. Short-term slope of ¾:1 (53 degrees) is allowable in excavations in Type A soil deeper than 12 feet deep but less than 20 feet deep.
3. A registered professional engineer will design sloping or benching for excavations deeper than 20 feet.

DRAFT

C. Allowable slope or configuration bench based on the soil classification will be determined using the following figures:

EXCAVATIONS IN TYPE A SOIL	EXCAVATIONS IN TYPE B SOIL	EXCAVATIONS IN TYPE C SOIL
SIMPLE SLOPES LESS THAN 20 FEET DEEP WILL HAVE A MAXIMUM SLOPE OF 3/4:1  SIMPLE SLOPE	SIMPLE SLOPES LESS THAN 20 FEET DEEP WILL HAVE A MAXIMUM SLOPE OF 1:1  SIMPLE SLOPE	SIMPLE SLOPES LESS THAN 20 FEET DEEP WILL HAVE A MAXIMUM SLOPE OF 1-1/2:1  SIMPLE SLOPE
EXCEPTION: SHORT-TERM SIMPLE SLOPES LESS THAT 12 FEET DEEP HAVE A MAXIMUM SLOPE OF 1/2:1  SIMPLE SLOPE SHORT-TERM		
BENCHED EXCAVATIONS LESS THAN 20 FEET DEEP WILL HAVE A MAXIMUM SLOPE OF 3/4:1  SIMPLE BENCH	BENCHED EXCAVATIONS LESS THAN 20 FEET DEEP WILL HAVE A MAXIMUM SLOPE OF 1:1  SIMPLE BENCH	BENCHED EXCAVATIONS ARE NOT ALLOWED
 MULTIPLE BENCH	 MULTIPLE BENCH	BENCHED EXCAVATIONS ARE NOT ALLOWED

LOCATION OF UNDERGROUND UTILITIES

INTRODUCTION

All existing utilities will be located, marked, and visually verified prior to starting any operation. The foreman of each operation is responsible for ensuring that utilities have been marked.

WEST VIRGINIA MISS UTILITY 811

Miss Utility must be contacted before the start of any excavation. This can be done by internet connection to http://www.wv811.com or by phone 1-800-245-4848. **Refer to the website for more information.**

The Damage to Underground Facilities Act requires anyone engaging in any activity, which displaces earth, rock, or other material on or below the ground to notify Miss Utility at least two business days, but not more than ten days, prior to excavation. This means all contractors, subcontractors, and sub-tiered subcontractors. Each separate company must notify the service of their excavation plans and have their own locate ticket number.

The number for calling in a request is 1-800-245-4848.

AFTER THE CALL

Once they have been contacted, utility owners are required by law to notify us within two working days by either physically locating the utilities within the excavation area or by notifying us by telephone or fax that the area of excavation is clear of their facilities. When not clear, they will mark utility routes with stakes, flags, paint, or other suitable materials in varying combinations depending upon the type of surface to be marked. These marks will be in sufficient quantity to clearly identify the routes of the utility. The markings should also include the symbols of the underground utility owner. When it is expected that the surface covering the underground utility will be destroyed, supplemental offset markings may be added at the discretion of the utility owner.

The request will be valid for as long as markings are visible.

The Utility Color Markings: The following colors and symbols have been adopted by all utilities for marking underground facilities:

BLUE	Potable Water
ORANGE	Communication, Alarm or Signal lines, Cables or Conduit
GREEN	Sewers and Drain Lines
RED	Electric Power Lines, Cables, Conduit and Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum or Gaseous Materials
PINK	Temporary Survey Markings
PURPLE	Reclaimed Water, Irrigation and Slurry Lines
WHITE	Proposed Excavation

Note: In some cases, underground utilities belong to the owner of the property rather than the utility. For example, the utility may own the pipe/conductor up to a meter at the edge of a property. The pipe/conductor from the meter on into the property (i.e. a house or commercial building) belongs to the property owner. Member utilities will not mark the utilities beyond where they own them.

The traffic signal wires for intersections **ARE NOT** covered by the service. It is the superintendent's responsibility to contact the proper authority to locate the traffic signal wires.

In addition, newly constructed work **IS NOT** covered either (i.e. drainage, electrical subcontractor new installations, etc.). Their plans will need to be referred to for locations of this work. The engineer, foreman, or

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superintendent responsible for this work will be contacted to verify what has been constructed and appropriate as-builts requested.

OTHER LAWS AND REGULATIONS

Federal Regulation: 49USC 60123 (D) *Penalty for **not** using one a call notification system or not heeding location information or markings – States in part that "*A person shall be fined under title 18, imprisoned for not more than five (5) years, or both, if the person knowingly and willfully:

"Engages in an excavation activity without first using an available one-call notification system to establish the location of underground facilities in the excavation …"

Note: Other State and Local civil penalties, as well as repair costs can be imposed for failure to comply with the notification system.

OSHA REGULATIONS CFR 29 PART 1926 SUBPART P

The estimate location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.

Utility companies or owners shall be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground installations within 48 hours, excluding weekends and holidays (unless a longer period is required by state or local law), or cannot establish exact location of these installations, the employer may proceed, provided the employer does so with caution, and provided detection equipment or other acceptable means to locate utility installation are used.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by hand digging to expose the utility.

FIELD VISIT AND VERIFICATION

After the Miss Utility has been activated and the 48-hour period is up, a field verification visit needs to happen. The visit is used to verify that Miss Utility members have come out to the work area and marked all utilities. The field visit is to be performed by the superintendent in charge. In addition, the engineer and foreman responsible should also perform this visit. Ticket check must also be completed by calling 1-800-245-4848 (or via the internet www.wv811.com).

The Miss Utility markings will be compared to the utility drawings. If one or more Miss Utility members have not marked any or all of the utilities in the area, then call Miss Utility back and give **SECOND NOTICE**. Miss Utility will immediately send the locators out to mark the utilities.

During the field visit, the area must be inspected for any unknown utilities (i.e. landscape irrigation lines). If any unknown utilities are found, they will also be potholed and positively located.

Any utility relocation that has taken place and any new utilities that have been installed need to be noted. In addition, electrical subcontractor recently installed lines need to be verified.

POTHOLING

What you don't see can KILL you!

Before excavating operations may begin, potholing for the utilities will take place. Potholing is performed to verify the location and depth of the utility lines. Potholing will be done using hand labor or a VAC truck (if available). Equipment can be used in conjunction with hand labor to remove hand-loosened material only.

NOTE: Utilities located by Underground Service Alert have a five-foot safe zone. In other words, the utility should be within a five-foot zone of either side of the markings.

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POTHOLING PROCEDURE

YOU WILL POTHOLE TO FIND THE UTILITY. If the utility was not found in the first pothole, do not assume that the utility is not there. The utility **must** be found prior to the start of excavation operations.

The soil must be excavated in 6" lifts (approximately) by hand to verify that no utilities are present. Then the equipment can be used to excavate the material in that lift. If utilities are located, then the utilities must be exposed by hand. The proper tools that can be used for handwork are shovels and pry bars (or other tools of this nature). At no time should a pickaxe or other similar tools be used.

Once identified, all utilities will be marked with stakes and ribbon. When offset markings are necessary, the information will be clearly noted on the stake. Make sure all personnel are aware of the location of the utilities in the area.

DO NOT ASSUME THAT THE UTILITY WILL CONTINUE ON THE SAME LINE AND GRADE.

If any damage occurs to any line, contact the utility company, the utility engineer and the Project Safety Manager immediately. Respond appropriately to the situation, initiate emergency response is necessary.

DAMAGE TO UTILITIES

Stop work immediately if any damage or suspected damage of a utility, or unknown utility is identified and contact the Safety Coordinator and Utility Manager. Document conditions at time of occurrence.

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OVERHEAD POWERLINES

INTRODUCTION

Prior to any work on the project, the Supervisor will establish the following:

- Be posted in several locations where employees may review its contents and be communicated to all employees working on a project with overhead power lines.
- Establish a procedure for each location where equipment has the potential to come any closer than 15' to a power line to have a site-specific hazard analysis identifying the voltage, the height off-ground, and the work plan/procedure for all pieces of equipment on the job. The Operation-Specific Hazard Analysis must be reviewed and approved by the Project Manager.

WORKING NEAR OVERHEAD POWERLINES

When it becomes necessary to position equipment for performing work in an area near energized power lines, the following procedures must be followed if the equipment has the potential to extend, raise, or otherwise move within the minimum safe clearance.

1. Power lines should be de-energized or relocated, if at all possible.
2. If it is possible to have the power line de-energized, do not start your operations until you have been notified that the lines are de-energized and the lines are visibly grounded on both sides of the area where the equipment will be working. If the lines cannot be grounded, a representative from the utility company will be present at the start of each shift (or full-time) to confirm that the lines are de-energized.
3. If the utility owner allows relocation, but will not pay for the relocation, the Project Director must seriously consider paying for relocating the power lines.
4. If it is impossible to have the lines de-energized and impractical to have the lines relocated, then the equipment must be prevented from coming any closer than:
   a. 15 feet for lines up to 50 kV
   b. 15 feet plus 0.40 inches for each 1 kV over 50 kV
5. Whenever possible positive stop measures such as locking out the boom down or swing motion must be installed to prevent working equipment or loads from coming within the required clearance zone of energized power lines. The Hazard Analysis and work plan must identify the positive stop measures and be approved by the Project Manager prior to starting the operation.

The following procedures must be followed in the event of contact:

1. No member of the crew should touch any portion of the crane or the suspended load.
2. The operator should stay with the equipment and break contact before attempting to leave the controls.
3. All members of the crew must watch for unexpected collapse of a crane boom, for lines breaking, or loads shifting that might cause them to come in contact with power lines.
4. While the equipment is in contact with an energized line, no persons are allowed within a minimum of 40 feet (greater distances are required for lines over 50kV) of the equipment, as the ground surrounding the equipment may be energized.
5. The Safety Coordinator must be notified immediately.

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LOCK-OUT / TAG-OUT PROCEDURE

INTRODUCTION

This procedure establishes minimum requirements to ensure that machines, equipment and energized electrical circuits are isolated from potential energy sources and locked and tagged out before maintenance or repairs are done.

This procedure applies to any operation where failure to lock and tag out a potential energy source could cause an accident.

ENERGY CONTROL

1. Before employees turn off a machine, equipment or electrical circuit, the employees must know the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.
2. When identifying potential energy sources, all of the following types should be considered:
3. Electrical energy sources including power panels, transformers, capacitors, batteries and generators.
4. Fluid energy sources including high pressure or high temperature lines and lines that carry caustic or flammable materials.
5. Stored energy sources including suspended loads, hydraulically lifted loads, compressed springs and equipment that could shift, move or rotate unexpectedly.

a. **Note**: This is only a guide to some types of potential energy, not a complete list of all potential energy sources.

6. The machine, equipment or electrical circuit must be turned off or shut down using the procedures established for that machine, equipment or electrical circuit. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees because of the equipment stoppage.
7. All energy isolating devices needed to control the energy to the machine, equipment or electrical circuit must be located and operated in a way that isolates the machine or equipment from the energy source(s).
8. After the equipment is de-energized, each affected employee will lock the energy isolating device in the open position using a multiple locking hasp (i.e., three employees, three locks) and will retain possession of his/her key to prevent inadvertent re-energizing of the circuit.

a. **Note**: Each affected employee should be issued a lock and tag that will identify that employee as the custodian of that lock and tag. All spare or additional keys must be locked in a box labeled "Lock out keys, authorized personnel only" and stored away from the lock out devices.

9. The energy isolation device must then be tagged as out of service (e.g., “DANGER DO NOT OPERATE”, “DANGER EMPLOYEES WORKING ON MACHINERY”). Tags must be attached to prevent inadvertent or accidental removal. Tag attachments must be of a non-reusable type, attachable by hand, self-locking, with a minimum unlocking strength of 50 pounds. All weather nylon cable ties are acceptable tag attachments.
10. Locks and tags must be attached in a way that will hold the energy isolating devices in a "safe" or "off" position.
11. Locks and tags must be attached in a way that will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.
12. Following the attachment of locks and tags to energy isolating devices, all potentially hazardous stored or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe.
13. If there is a possibility that stored energy could accumulate to a hazardous level, verification of isolation must be continued until the servicing or maintenance is completed or until the possibility of stored energy accumulation no longer exists.

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After machines, equipment or electrical circuits have been locked and tagged out, the machine or equipment must be test started, to ensure the right energy sources were in fact locked out, and any remaining stored energy must be bled off or released in a controlled safe manner.

RELEASE FROM LOCK AND TAG OUT

After maintenance or repairs have been completed, the affected area will be inspected to ensure that tools and nonessential items have been removed, guards have been replaced and employees have been notified that the machine, equipment or electrical circuit is being re-energized.

Each lock and tag must be removed from each energy-isolating device by the employee who applied the device.

Exception: If the employee who applied a lock and tag is not available to remove them, the lock and tag may be removed by the supervisor, if the supervisor:

- Confirms that the employee who applied the lock and tag is not at the facility.
- Personally informs the employee, before the employee returns to work, that his/her lock and tag have been removed.

TRAINING

- All employees likely to be assigned tasks involving maintenance or repairs of equipment, machinery or electrical circuits will be trained using this procedure before their assignment.
- Employees will be trained to identify potential energy sources within systems and job sites they work on and to properly lock and tag out all devices controlling them.
- Employees who are or may be in an area where energy control procedures are utilized must be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment that are locked and tagged out.
- Employees will be instructed that compliance with danger, warning, and lock out tags is mandatory.
- Retraining must be provided for all affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or a change in these lock and tag out procedures.
- Retraining must also be conducted whenever a periodic evaluation reveals, or whenever a supervisor thinks that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.
- Training and retraining must be documented and certified as being accomplished and current. The certification must contain each employee's name and dates of training.

PERIODIC EVALUATION

Supervisors responsible for this procedure must conduct a periodic (at least annual) evaluation to confirm that it is being followed. The evaluation must include:

A. Observation of employees using the lock and tag out procedure.
B. A review of employees' responsibilities and correction of any misunderstanding or misapplication of the procedure.

The supervisor must certify that the evaluation has been completed including the following:

A. The machinery, equipment or energy source on which the energy control procedure was utilized.
B. The names of all the employees included in the evaluation.
C. The date and location of the evaluation.
D. The evaluator's name and position.

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ELECTRICAL SAFETY

1. Electrical installations and maintenance will be performed only by qualified electricians.

2. Electrical systems will conform to the requirements of the National Electric Code, and the contract specifications as applicable.

3. All 125-volt single phase, 15 and 20 ampere receptacle outlets that are not a part of the permanent wiring of the building or structure will have ground-fault circuit-interrupter protection for personnel.

4. All electrical circuits, equipment and conductor enclosures will have a grounding system that is: permanent and continuous; of such capacity to conduct safely any fault current likely to be imposed on it; and of sufficiently low resistance to limit the voltage to ground and facilitate the operation of the circuit breaker in the circuit.

5. The continuity and resistance of plant grounding systems will be tested immediately after installation, repair or modification and annually after that.

6. Temporary wiring will be guarded, buried, or isolated by elevation to prevent contact by workers or equipment.

7. All electric powered machinery and equipment will be de-energized and the switch locked and tagged out before any maintenance or repair work is performed in accordance with Program Section: Lock-Out / Tag-Out.

8. Precautions will be taken to prevent contact with energized electrical lines, either above or below ground.

9. Unless electrical lines are de-energized and visibly grounded, no equipment, machinery or tools will be operated or handled within 10 feet of lines carrying up to 50,000 volts. Greater distances are required for voltages over 50,000.

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IMPALEMENT PREVENTION

1. Employees will be protected from the hazard of impalement working around or over exposed, vertically or horizontally projecting, reinforcing steel or other similar projections as follows:
   a) Employees working at grade or at the same surface as exposed vertically protruding reinforcing steel or other similar projections, will be protected by guarding the exposed ends with protective rebar covers or rebar troughs.
   b) Employees working above grade or any surface and exposed to vertically protruding reinforcing steel or other similar projections will be protected by a fall protection system, or protective rebar covers.
   c) Rebar scratch caps may not be used as impalement protection for employees exposed to vertically protruding reinforcing steel or other similar projection. Rebar caps may be used on horizontal rebar to protect employees from scratches and abrasions.
   d) Rebar troughs may not be used as a substitute for engineered or manufactured protective rebar covers when employees are working at heights greater than 6 feet above grade or other working surface.
2. Protective rebar covers will be made of wood, plastic, or other similar material. If protective rebar covers are job-built, they will be designed by a registered professional engineer. A copy of the engineering drawing(s) depicting the job-built protective rebar covers will be kept at the worksite.
3. Job-built wood protective rebar covers and rebar troughs will be constructed of at least "Standard Grade" Douglas Fir.

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HAZARD COMMUNICATION PROGRAM

INTRODUCTION

The purpose of this program is to provide employees the information about hazardous chemicals used or produced in their workplaces.

These procedures apply to all construction, mining, production and maintenance operations that could expose employees to hazardous chemicals as either the result of normal work conditions or a reasonably foreseeable emergency.

Any situation arising from work conditions where an employee may ingest, inhale, absorb or otherwise be exposed to any amount of a hazardous chemical will be considered an exposure.

RESPONSIBILITIES

The supervisors of each operation, facility or work area are responsible for:

1. Identifying the products that contain hazardous chemicals in their work area.
2. Maintaining an inventory/list of hazardous chemicals in their work area.
3. Ensuring that the containers of hazardous chemicals in their work areas are appropriately labeled.
4. Ensuring that employees are made aware of the potential hazards associated with those chemicals, including the availability of SDSs located on site.
5. Ensuring that employees minimize any potential exposure using safe work practices, necessary or assigned protective equipment, and the use of available engineering or facility design features.
6. Providing employees, under their supervision, guidance and training specific to their work.
7. Reporting problems pertaining to the implementation of this program to their supervisor and the Safety Coordinator.

HAZARD DETERMINATION

A. A thorough inventory of each worksite will be conducted to identify all the chemicals that are used, processed, stored or produced at the worksite.

B. The inventory must be evaluated to determine if any of the chemicals are hazardous. This evaluation should include reviewing the labels and SDSs to determine if the manufacturer of the chemical determined that it was either a physical or health hazard.

C. An inventory/list of all of the hazardous chemicals, to which employees may be exposed, will be prepared, using a document like form in section X, and kept with this program at each worksite. The inventory/list must include the same chemical or common name used on the container label or SDS.

D. If a new hazardous chemical is received at the work area the inventory/list will be updated to include the new hazardous chemical. If a hazardous chemical is not used any longer, it may be removed from the inventory/list.

LABELS

When hazardous chemicals are received, supervisors will examine the containers to ensure that they are labeled to provide employees with the all of following required information:

1. The identity of the hazardous chemicals they contain.
2. Appropriate warnings of the physical and health hazards associated with those chemicals.
3. The name and address of the chemical manufacturer, importer, or other responsible party.

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When hazardous chemicals are transferred into temporary portable containers the containers should be labeled with the required information. A label is not, however, required on a temporary portable container if the employee using the temporary portable container:

1. Transferred the hazardous chemical to the temporary portable container himself or herself.
2. Is in immediate control of the temporary portable container.
3. Knows the identity of the hazardous chemical, the physical and health hazards associated with that hazardous chemical and the necessary protective measures.
4. Leaves the temporary portable container empty at the end of the shift.
5. The labels on containers of hazardous chemicals may not be removed or defaced unless the containers are immediately re-labeled with the required information.
6. Signs, placards, process sheets, batch tickets, operating procedures, or other such written materials may be used to label individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable, communicates the same information required on a label and is readily available to employees in the work area.

GLOBALLY HARMONIZED SYSTEM SAFETY DATA SHEETS

A. An SDS for each hazardous chemical identified on the list of hazardous chemicals must be maintained with this program or in a manner that it is readily available to employees in the event of an emergency.

B. An SDS must be provided by the manufacturer or seller of a hazardous chemical and will be requested at the time an order is placed for any hazardous chemical.

C. An SDS for each hazardous chemical which employees may be exposed to will be maintained either at the work area or at a central location in the Project Office in a manner that they are readily available to employees during their work shift.

D. Copies of SDSs will be provided to employees, their physicians, their collective bargaining agents or their authorized representatives upon request.

E. SDSs for the hazardous chemicals used in the work area must be maintained for as long as those hazardous chemicals remain in the work area. SDSs for hazardous chemicals that are no longer used should be retained, together with a description of when and where they were used, for at least thirty (30) years.

INFORMATION AND TRAINING

As part of their initial orientation, employees must receive at least the following information:

1. The requirements of the applicable hazard communication regulations.
2. The operations in their work areas where hazardous chemicals could be present.
3. The location and availability of this written hazard communication program, including the required list of hazardous chemicals, and safety data sheets.

See Appendix A for an example Hazardous Chemical Log Sheet

When employees are or could be exposed to hazardous chemicals, they will receive training. The training may be designed to cover categories of hazardous chemicals (e.g., carcinogens, compressed gasses, solvents, flammable/combustible, metals, and corrosives) or specific chemicals using the SDSs for those hazardous chemicals they may be exposed to.

This training must be provided before employees are assigned duties that may cause exposure to hazardous chemicals, and will provide at least the following information:

a. An explanation of what an SDS is.
b. An explanation of the labels used.
c. Any physical or health hazards associated with the chemical or mixture.

DRAFT

d. Proper precautions for handling, the necessary personal protective equipment or other precautions necessary to prevent or minimize exposure to a hazardous chemical.
e. Emergency procedures for spills, fires, disposal and first aid.
f. The methods and observations that will be used to detect the presence of a hazardous chemical in the work place.
g. The right of employees, their physicians, their collective bargaining agents or their authorized representatives to receive information about the hazardous chemicals to which they may be exposed.
h. The right against discharge or discrimination due to an employee's exercise of the rights afforded by law.
i. The availability of this written program and any other hazardous chemical information including SDSs and the contents of labels on containers.

Training will be conducted as a "toolbox" or "tailgate" safety meeting and documented using a Safety Meeting Report.

NON-ROUTINE TASK TRAINING

When employees are assigned to non-routine task that may expose them to a hazardous chemical, they are not familiar with, they will be trained in the manner required by Section VI. of this program.

ACCESS TO INFORMATION BY OTHER EMPLOYERS

- When the employees of another employer may be exposed to hazardous chemicals while working on one of our jobsites or facilities that employer will be provided a copy of this Hazard Communication Program, a copy of the list of hazardous chemicals to which workers may be exposed, an explanation of the labeling system that will be used and upon request receive a copy of the SDSs for those chemicals.
- When another employer uses hazardous chemicals while working on one of our jobsites or facilities that employer will provide the Company with a copy their Hazard Communication Program, a copy of the list of those hazardous chemicals to which our employees may be exposed, an explanation of the labeling system that employer is using and a copy of the SDSs for those chemicals. Other employers should not be allowed to proceed with any operation that may expose our employees to hazardous chemicals until this information is provided.

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ENCLOSED AND CONFINED SPACES

Before entry or work in confined spaces, including tanks, vaults, manholes, pipelines, and other similar enclosures where existing ventilation is insufficient for removal of combustible or toxic air contamination or oxygen deficiency, the following minimum steps will be taken:

1. Employees will be trained in the operating and rescue procedures contained in the next section: Confined Space Operating Procedures.
2. Lines that may convey dangerous substances into the space will be disconnected or blocked off.
3. The space will be emptied, flushed or otherwise purged of any dangerous substances.
4. The air will be tested for dangerous air contamination or oxygen deficiency with an appropriate testing device by a qualified person and a written record of such tests will be kept at the jobsite for the duration of the work.
5. Adequate ventilation to ensure a safe working atmosphere, as determined by additional air testing or continuous monitoring, will be maintained while work is in progress.
6. When dangerous air is detected, work will be discontinued and workers will be removed until a safe atmosphere is restored with additional ventilation or removal of the contamination.
7. When an atmosphere free of dangerous air contamination or oxygen deficiency cannot be ensured or maintained through ventilation, the Program Supplement: Confined Space Operating Procedures will be incorporated as the minimum requirements.

Note: Oxygen deficient air contains less than 19.5 percent oxygen by volume. Combustible atmospheres contain concentrations of more than 10 percent of the lower explosive limit of a combustible gas or vapor. Toxic atmospheres contain concentrations of hazardous substance that exceed the permissible exposure levels.

See Appendix A for Confined Space Permits

CONFINED SPACE OPERATING PROCEDURE

INTRODUCTION

Confined spaces may present safety or health hazards to employees working within them. It is important that employees and supervisors performing work on, in or around confined spaces understand the potential hazards and follow these safe-operating procedures.

These procedures establish the minimum safe operating practices for identification of confined spaces, hazard recognition, air testing, ventilation, control and protection of employees who enter confined spaces, employee and supervisor training, use of entry permits, rescue procedures, recordkeeping and program evaluation.

EVALUATION OF WORK PLACE

Each work place must be evaluated to determine if there are any confined spaces, how those spaces will be classified and whether employees will be required or allowed to enter into them to perform work tasks or assignments.

There are several types of confined spaces (see definitions) that are classified by both the type of work being performed where the space exists and the potential hazards associated with entry into the space. Each confined space in a work place must be classified as one of the following:

- Construction Enclosed Space
- Construction Confined Space (other confined space)
- Non-Permit Confined Space
- Permit-Required Confined Space (permit space)

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If a non-construction work place contains permit spaces, a sign reading "DANGER PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" must be installed on or near each permit space to inform employees of the existence, location and hazards posed by the permit spaces.

PRE-ENTRY PROCEDURES

- Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
- When entrance covers are removed, the opening must be promptly guarded by a railing, temporary cover or temporary barrier that will prevent an accidental fall through the opening and protect employees working in the space from foreign objects entering the space.
- All lines that may convey dangerous substances into the space will be disconnected, blocked or effectively isolated by blanking or blinding to prevent a hazardous atmosphere from developing. This will be done in a manner that prevents inadvertent re-connection.
- The space will be emptied, flushed, or otherwise purged of dangerous substances, to the extent feasible.
- Mechanical and electrical equipment in the space will be isolated and locked and tagged out in accordance with the lock-out procedure supplement to the accident prevention program.
- The air within the space will be tested for a hazardous atmosphere by a qualified person using a calibrated direct-reading instrument, and a written record of such testing will be maintained at the jobsite for the duration of the work.
- A pre-entry checklist must be completed by the entry supervisor. If, after completion of the check list, it is determined that the space is not a permit-required confined space and that all the hazards or potential hazards have been eliminated, the entry supervisor must document the elimination of the hazards, date and sign the check list certifying that the space is not a permit space.

ENTRY PROCEDURES

Construction Enclosed Spaces

A. When air testing demonstrates that a hazardous atmosphere does not exist, entry into and work within the construction enclosed space may proceed provided additional air testing is conducted by a qualified person to ensure that oxygen deficiency and dangerous air contamination does not occur.
B. Adequate natural or forced mechanical ventilation must be maintained while work is in progress.

CONSTRUCTION CONFINED SPACES

When a non-hazardous atmosphere in a construction enclosed space cannot be ensured or maintained through ventilation, the following procedures will be followed:

1. Respiratory protective equipment for the authorized entrant will be provided and worn in accordance with the Respiratory Protection Program.
2. A safety harness that suspends an authorized entrant in an upright position will be used. The harness must be attached to a lifeline with at least a 3,000-pound breaking strength. If an entry is made through a top opening, a hoisting device will be provided to lift the authorized entrants out of the space.
3. At least one attendant will stand by outside of the space to give assistance in case of an emergency. At least one additional employee will be within calling distance.
4. The attendant will be equipped with a self-contained breathing apparatus.
5. Effective communication will be provided between attendants and the authorized entrants inside the space.
6. The attendant or at least one other employee trained in CPR must be immediately available whenever respiratory protective equipment is used.
7. An attendant may enter the space only after alerting an employee outside the confined space of the attendant's intent to enter the confined space.

DRAFT

NON-PERMIT CONFINED SPACES

1. When pre-entry evaluation and atmospheric testing of a non-construction space demonstrate that the only hazard posed by the space is a potential hazardous atmosphere and that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, work may be performed without an entry permit.
2. The entry supervisor must certify in writing that the space is safe for entry and that the pre-entry measures have been taken. The certification must contain the date, the location of the space, and the supervisor's name and signature, must be made before entry and must be made available to employees.
3. Entry into the non-permit space under the terms of this subsection must be performed in accordance with the following requirements:
    a. Continuous forced air ventilation must be used, as follows:
        i. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
        ii. The forced air ventilation must be directed to ventilate the immediate areas where an employee is or will be present within the space and must continue until employees have left the space.
        iii. The air supply for the forced air ventilation must be from a clean source and may not increase the hazards in the space.
    b. The atmosphere within the space must be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
    c. If a hazardous atmosphere is detected during entry:
        i. Each employee must leave the space immediately.
        ii. The space must be evaluated to determine how the hazardous atmosphere developed.
        iii. Measures must be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.
4. When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the entry supervisor must reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

PROCEDURES FOR ATMOSPHERIC TESTING

Atmospheric testing is required to evaluate the hazards of a permit space and verify that acceptable conditions for entry into that space exist.

A. The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity to identify and evaluate hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures and acceptable entry conditions can be developed. Evaluation and interpretation of the tests, and development of entry procedures, should be done by, or reviewed by, a qualified professional based on evaluation of all hazards.

B. A permit space that may contain a hazardous atmosphere should be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) should be recorded on the permit in the space provided.

C. Measurement of values for each atmospheric parameter should be made for at least the minimum response time of the test instrument specified by the manufacturer.

DRAFT

D. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

E. A test for oxygen is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere.

Combustible gases are tested for next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors. If tests for toxic gases and vapors are necessary, they are performed last.

F. The atmosphere within the space must be periodically tested to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

G. If a hazardous atmosphere is detected during entry:

1. Each employee must leave the space immediately.
2. The space must be evaluated to determine how the hazardous atmosphere developed.
3. Measures must be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

VENTILATION

Continuous forced air ventilation must be used, as follows:

1. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
2. The forced air ventilation must be so directed as to ventilate the immediate areas where an employee is or will be present within the space and must continue until all employees have left the space.
3. The air supply for the forced air ventilation must be from a clean source and may not increase the hazards in the space.

EMPLOYEE AND SUPERVISOR TRAINING

A. All affected employees will be provided with a copy of these operating procedures and trained before being assigned to work on, around or in enclosed or confined spaces.

B. The training must provide employees the understanding, knowledge, and skills necessary to safely perform their assigned duties.

C. Training will include at least the following information:

1. The hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of an exposure.
2. The possible symptoms and behavioral effects of an exposure.
3. The method that will be used to identify and maintain an accurate count of the authorized entrants in the permit space.
4. The proper use of the equipment associated with confined spaces including:
   a. Testing and monitoring equipment.
   b. Ventilation equipment.
   c. Communication equipment.
   d. Personal protective equipment.

DRAFT

e. Illumination equipment.

f. Barriers and shields necessary to protect entrants from external hazards.

g. Ladders and other safe access and egress equipment.

h. Rescue and emergency equipment.

i. Any other equipment necessary for safe confined space entry.

D. How entrants and attendant should communicate to monitor each other's status and to enable them to alert each other of the need to evacuate the space.

E. The duties and responsibilities of authorized entrants including:

1. The use of a chest or full body harness, with a retrieval line attached.
2. The use of a retrieval system whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the risk associated with an entry or rescue.
3. Alerting the attendant whenever the authorized entrant recognizes any warning sign or symptom of exposure to a dangerous situation or detects an unsafe or prohibited condition.
4. Exiting the permit space as quickly as possible whenever:
   a. The attendant or the entry supervisor orders an evacuation.
   b. They recognize any symptom or behavioral effect of an exposure.
   c. They detect an unsafe or prohibited condition.
   d. An evacuation alarm is activated.

F. The duties and responsibilities of attendants including:

1. The method an attendant must use to monitor the activities inside and outside the space to ensure it is safe for entrants to remain in the space.
2. Ordering the authorized entrants to evacuate the permit space immediately under any of the following conditions:
   a. The attendant detects an unsafe or prohibited condition.
   b. The attendant detects the symptoms or behavioral effects of hazard exposure in an entrant.
   c. The attendant detects a situation outside the space that endangers an entrant.
   d. The attendant cannot effectively and safely perform his/her duties.
3. Remaining outside the permit space during entry operations until relieved by another attendant.
4. The actions an attendant must take if an unauthorized person approaches or enters a permit space while entry is under way including:
   a. Warning the unauthorized person to stay away from the space.
   b. Telling the unauthorized person that he/she must exit immediately if he/she has entered the permit space.
   c. Telling the authorized entrants and the entry supervisor that an unauthorized person has entered the permit space.
5. Initiating on-site rescue procedures and, if necessary, summoning additional rescue and emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.
6. Not performing any duties that interfere with their duty to monitor and protect the authorized entrants.

G. The duties and responsibilities of entry supervisors including:

DRAFT

1. Verifying, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
2. Terminating the entry and canceling the permit if the operations covered by the permit are completed or a condition not allowed by the permit occurs.
3. Verifying that rescue services are available and that the means for summoning additional services are operable.
4. Removing unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
5. Determining, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

H. The duties and responsibilities of rescue team members including:

1. The duties of authorized entrants.
2. How to perform their assigned rescue duties.
3. Performing first aid and cardiopulmonary resuscitation (CPR).
4. Understanding the proper use of the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.

I. Training must be repeated whenever:

1. There is a change in an employee's assigned duties.
2. There is a change in permit space operations that presents a hazard about which an employee has not been trained.
3. There are deviations from the permit space entry procedures.
4. We think that any affected employee who has already been trained does not have the understanding and skill required in the training section listed above.

J. Rescue team members must practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or persons from the actual permit spaces or from representative permit spaces.

K. A written training certification record, containing the name of the employee trained, the name of the person who conducted the training, the signature of the person who conducted the training and the date training was completed, must be maintained.

RESCUE PROCEDURES

A. Each operation must develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue.

B. The entry supervisor must ensure that at least one standby person at the site is trained and immediately available to perform rescue and emergency services.

C. The following requirements apply when employees enter permit spaces to perform rescue services.

1. The entry supervisor must ensure that each member of the rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.
2. Each member of the rescue service must be trained to perform the assigned rescue duties. Each member of the rescue service must also receive the training required of authorized entrants.

DRAFT

D. If we arrange to have persons other than our employees perform permit space rescue, we must:

1. Inform the rescue service of the hazards they may confront when called on to perform rescue at our facility.
2. Provide the rescue service with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.

E. To facilitate non-entry rescue, retrieval systems or methods must be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems must meet the following requirements.

1. Each authorized entrant must use a chest or full body harness, with a retrieval line attached at a suitable point so that when rescued, the entrant presents the smallest possible profile (for example at the center of the entrant's back near shoulder level, or above the entrant's head). Wristlets may be used in lieu of the chest or full body harness if the entry supervisor can document that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
2. The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device must be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.

F. If an injured entrant has been exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the work site, that SDS or written information must be made available to the medical facility treating the exposed entrant.

PROGRAM EVALUATION

A. Each canceled entry permit must be retained for at least 1 year to facilitate the review of this program. Any problems encountered during an entry operation must be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.

B. Review of entry operations must be performed when there is reason to believe that the measures taken under the permit space program may not protect employees. The program must be revised to correct deficiencies found to exist before subsequent entries are authorized.

Note: An operation may perform a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review is necessary.

DRAFT

FIRE PREVENTION AND PROTECTION

1. All reasonable precautions will be followed in cooperation with local authorities to minimize fire hazards. The telephone numbers of local firefighting agencies will be posted at the office and be available for each jobsite. A fire alarm system will be established by which employees and local fire department can be promptly alerted in a fire emergency.
2. Appropriate portable fire extinguishers, rated at least 2-A: 10-B: C containing at least 4.5 pounds of extinguishing agent, and hand tools will be available at the worksite whenever fire hazards exist.
3. All highway vehicles and cranes will be equipped with an appropriate fire extinguisher, rated at least 2-A: 10-B: C, or a fire suppression system. Fire extinguishers will be installed on other types of equipment in accordance with the applicable regulations.
4. All fire extinguishers and fire suppression systems will be inspected and serviced, as necessary, at least annually by certified technician. All fire extinguishers and fire suppression systems will be inspected at least monthly by qualified person and a record of the inspection will be maintained with the extinguisher or system.
5. Demonstrations and training should be provided to all personnel in the use of available "first aid" firefighting equipment.
6. All flammable and combustible materials will be properly stored (separated) until consumed or otherwise removed.
7. Smoking and the use of open flames will be prohibited in any area where these would present a fire hazard. This prohibition is to be noted by using signs.
8. Gasoline and other flammable liquids will be stored, and handled only in approved portable tanks or safety cans.
9. Above ground fuel storage areas will be surrounded by a dike at least 12 inches high and of sufficient size to contain the contents stored.
10. Above ground fuel storage tanks will be installed at least 20 feet from any building or facility and will be kept clear of weeds, debris and other combustible material.
11. At least one portable fire extinguisher having a rating of not less than 4-A:20-: BC will be maintained at a distance between 25 and 75 feet from fuel storage and dispensing areas and two will be carried on all fuel trucks

DRAFT

HAND AND POWER TOOLS

1. All hand and power tools will be used only for the purpose for which they are intended, and will be maintained in safe working condition.
2. All required guards and safety devices will be in place and functioning properly.
3. The noncurrent-carrying metal parts of electric tools will be grounded. When electrical tools are connected to a temporary power source, personnel will be protected by ground fault circuit interrupters.
4. Powder-actuated tools will be used only by trained and certified personnel. Powder-actuated tools will be serviced and maintained only by qualified and authorized personnel.
5. Pneumatic impact tools will be equipped with safety clips or retainers to prevent tools from being expelled from the barrel.
6. All connections of compressed air hose with a one inch inside diameter or larger will be pinned and have hose whips installed to prevent whipping in the event of separation. Compressors will be equipped with an in-line pressure reducer that will reduce line pressure in the event of hose failure.
7. Chainsaws will be operated only by qualified operators following manufacturers operating instructions and wearing appropriate eye, ear, hand and leg protection.
8. Pressure blasting, grinding and saw cutting may present special hazards and will be done using appropriate personal protective equipment and work practices.
9. Electric power operated tools shall either be of the approved double insulated type or adequately grounded.

DRAFT

HEAT STRESS PREVENTION PROGRAM

INTRODUCTION

This procedure illustrates the effects of heat stress and basic preventative measures.

HEAT STRESS - CAUSES

Heat stress usually is a result of protective clothing decreasing natural body ventilation and therefore cooling. It may occur at any time while work is being performed at elevated temperatures.

If the body's physiological processes fail to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur ranging from mild reaction such as fatigue, irritability, anxiety, and decreased concentration, dexterity, movement or a serious reaction such as a comma. Because heat stress is one of the most common and potentially serious illnesses that construction workers encounter, regular monitoring and other preventative measures are vital.

HEAT STRESS – PREVENTATIVE MEASURES

Employees must learn to recognize and treat the various forms of heat stress. Some preventative measures include:

1. Suggest employees drink 16 ounces of water before beginning work in the morning or after lunch. Water coolers and paper cups will be available. Individuals with high blood pressure must drink plenty of water and will perform self-check periodically.
2. Acclimate employees to site work conditions by slowly increasing workloads, i.e. do not begin site work activities with extremely demanding activities. **Long** cotton underwear is an example of a cooling aid that acts as a wick to help absorb moisture and protect the skin form direct contact with heat-absorbing protective equipment (nomex).

TYPES OF HEAT STRESS

Heat Stroke

Heat stroke is an acute and dangerous reaction to heat stress caused by a failure of heat regulating mechanisms of the body. The body temperature control system causes sweating to stop working correctly. Body temperature rises so high causing brain damage and death may result if the body is not cooled.

- Symptoms
  - Red, hot, dry skin, although the person may have been sweating earlier; nausea; dizziness; confusion; extremely high blood pressure, rapid respiratory and pulse rate; unconsciousness or coma.
- Treatment
  - Cool the victim quickly. If the body temperature is not brought down permanent brain damage or death may result. Soak the victim in cool but not cold water, sponge the body with cool water or pour water on body to reduce the temperature to a safe level (102 F). Consult a physician as soon as possible.

Heat Exhaustion

Heat exhaustion is a state of very definite weakness or exhaustion caused by the loss of fluids from the body. This condition is much less dangerous than heat stroke, but it nonetheless must be treated.

- Symptoms

DRAFT

  - Pale, clammy, moist skin, profuse perspiration, and extreme weakness. Body temperature is normal, pulse is weak and rapid, breathing is shallow. The person may have a headache, may vomit, may be dizzy.

- Treatment
  - Remove the person to a cool, air-conditioned place, loosen clothing, place in a head-low position and provide rest. Consult physician, especially in severe cases. Have patient drink 1-2 cups of water immediately, and every 20 minutes thereafter until symptoms subside.

Heat Cramps

Heat cramps are caused by perspiration not balanced by adequate fluid intake. Heat cramps are often the first sign of a condition that can lead to heat exertion.

- Symptoms
  - Acute painful spasms of voluntary muscles; e.g., abdomen and extremities.
- Treatment
  - Remove victim to a cool area and loosen clothing. Have patient drink 1-2 cups of water immediately, and every 20 minutes thereafter, until symptoms subside.
- Periodic Monitoring of Work Area
  - Periodic temperature measurements will be verified and documented by Work Area Supervision, which may include periodic testing by an Industrial Hygienist.

DRAFT

COLD STRESS PREVENTION PROGRAM

INTRODUCTION

This procedure illustrates the effects of cold stress and basic preventative measures**.**

COLD STRESS - CAUSES

Prolonged exposure to freezing or cold temperatures may cause serious health problems such as trench foot, frostbite and hypothermia. In extreme cases, including cold water immersion, exposure can lead to death. Danger signs include uncontrolled shivering, slurred speech, clumsy movements, fatigue and confused behavior. If these signs are observed, call for emergency help.

COLD STRESS – PREVENTATIVE MEASURES

- Recognize the environmental and workplace conditions that may be dangerous.
- Learn the signs and symptoms of cold-induced illnesses and injuries and what to do to help workers.
- Train workers about cold-induced illnesses and injuries.
- Encourage workers to wear proper clothing for cold, wet and windy conditions, including layers that can be adjusted to changing conditions.
- Be sure workers in extreme conditions take a frequent short break in warm dry shelters to allow their bodies to warm up.
- Try to schedule work for the warmest part of the day.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system - work in pairs so that one worker can recognize danger signs.
- Drink warm, sweet beverages (sugar water, sports-type drinks) and avoid drinks with caffeine (coffee, tea, sodas or hot chocolate) or alcohol.
- Eat warm, high-calorie foods such as hot pasta dishes.
- Remember, workers face increased risks when they take certain medications, are in poor physical condition or suffer from illnesses such as diabetes, hypertension or cardiovascular disease.

THE COLD STRESS EQUATION

LOW TEMPERATURE + WIND SPEED + WETNESS = INJURIES & ILLNESS

When the body is unable to warm itself, serious cold related injuries and illnesses may occur, and permanent tissue damage and death may result. **Hypothermia** can occur when *land temperatures* are **above** freezing or *water temperatures* are below 98.6 degrees Fahrenheit. Cold related illnesses can slowly overcome a person who has been chilled by low temperatures, brisk winds, or wet clothing.

TYPES OF COLD STRESS

Frost Bite

What Happens to the Body: FREEZING IN DEEP LAYERS OF SKIN AND TISSUE; PALE, WAXY-WHITE SKIN COLOR; SKIN BECOMES HARD AND NUMB; USUALLY AFFECTS THE FINGERS, HANDS, TOES, FEET, EARS, and NOSE.

What Should Be Done:

- Move the person to a warm dry area. Don't leave the person alone.
- Removed any wet or tight clothing that may cut off blood flow to the affected area.
- DO NOT rub the affected area, because rubbing causes damage to the skin and tissue.

DRAFT

- Gently place the affected area in a warm (105 degree F) water bath and monitor the water temperature to SLOWLY warm the tissue. Don't pour warm water directly on the affected area because it will warm the tissue too fast causing tissue damage. Warming takes about 25-40 minutes.
- After the affected area has been warmed, it may become puffy and blister. The affected area may have a burning feeling or numbness. When normal feeling, movement, and skin color have returned, the affected area should be dried and wrapped to keep warm. NOTE: If there is a chance the affected area may get cold again, do not warm the skin. If the skin is warmed and then becomes cold again, it will cause severe tissue damage.
- SEEK MEDICAL ATTENTIN AS SOON AS POSSIBLE.

Hypothermia – MEDICAL EMERGENCY

What Happens to the Body: NORMAL BODY TEMPERATURE (98.6 degrees F) DROPS TO OR BELOW 95 degrees F; FATIGUE OR DROWSINESS; UNCONTROLLED SHIVERING; COOL BLUISH SKIN; SLURRED SPEECH; CLUMSY MOVEMENTS; IRRITABLE, IRRATIONAL OR CONFUSED BEHAVIOR.

What Should Be Done:

- Call for Emergency help – 911.
- Move the person to a warm, dry area. Don't leave the person alone. Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.
- Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. Avoid drinks with caffeine or alcohol.
- Have the person move their arms and legs to create muscle heat. If they are unable to do this, place warm bottles or hot packs in the arm pits, groin, neck, and head areas.

DRAFT

PERSONAL PROTECTIVE EQUIPMENT

1. Appropriate clothing, including at least a T-shirt with 4 inch sleeves, long pants and work shoes or boots with substantial soles will be worn all personnel at all jobsites and workplaces.
2. Personal protective equipment, selected to protect against recognized hazards, will be used as necessary for protection from those hazards.
3. Appropriate head protection will be worn by all personnel at all jobsites and workplaces. Bump caps and metal hard hats are prohibited. Hard hats will meet requirements of ANSI Z89.1-1986, Class A or B.
4. Appropriate eye and face protection will be used by all personnel on the jobsite 100% of the time. Safety glasses must have Z87.1 stamping. Face-shields are not adequate eye protection and should only be worn over primary eye protection (spectacles or goggles).
5. Personnel on foot who are exposed to mobile equipment or motor vehicle traffic will wear orange vests or other equivalent high visibility orange warning apparel. During hours of darkness warning apparel must be retro-reflective with at least two horizontal stripes that surround the wearer or one horizontal stripe that surrounds the wearer and one vertical band over each shoulder. All the retro-reflective stripes must be at least 2 inches wide.
6. Employees exposed to impact or crushing foot injuries will wear appropriate footwear consisting of at least safety-toe shoes or step in foot protectors.
7. Appropriate hand protection will be used by personnel when handling hazardous materials, hot objects or tools or equipment which may cause hand injuries.
8. Appropriate respiratory protective equipment will be used when employees are required or allowed to wear respiratory protective equipment because of exposure to respiratory hazards, such as dusts, fumes, mists, vapors or gases.
9. Respiratory protective equipment will be selected and employees will be trained in its use following the Program Supplement one: Respiratory Protection Program.
10. Appropriate hearing protection, such as plugs or muffs, will be used when noise levels exceed 85 decibels. Exposure to impact noise will not exceed 140 decibels peak sound pressure level.
11. Personnel driving and passengers riding in any vehicles will use seat safety belts.
12. A minimum of Class 2 safety vest shall be worn by all personnel exposed to vehicle traffic and construction equipment.
13. Working over or near water (within 10 feet of water edge on ground) where danger of drowning exists, employees **SHALL** wear U.S. Coast Guard approved life jackets; have a ring buoy with 100 ft. of rope within 200 feet of work area. At least on lifesaving skiff shall be immediately available at locations where employees are working over or near water where danger of drowning exists.

When working on any type plat form or on walk ways with railing over water all employees **shall wear fall protection with a life jacket and be tied off 100 percent of time.**

DRAFT

TRAFFIC CONTROL

1. When work encroaches upon or is close to traveled roadways, traffic control measures will be used in accordance with the authorizing agency, and following State or Federal standards for uniform traffic control signs and devices.
2. Barricades and warning and direction signs of sufficient size and number will be placed at appropriate locations to warn the public of lane closures and other traffic control measures.
3. The condition of traffic control devices will be monitored periodically to insure their proper operation.
4. Traffic control devices should be removed or covered upon completion of the work protected by such devices.
5. Personnel on foot who are exposed to mobile equipment or motor vehicle traffic will wear orange vests or other equivalent high visibility orange warning apparel. During hours of darkness, warning apparel must be retro-reflective with at least one horizontal stripe that completely surrounds the wearer.
6. Flag persons will be used at all locations where barricades and signs are inadequate to control traffic.
7. Flag persons will be trained in the proper techniques of flagging traffic per state requirements.
8. Personnel responsible for traffic control will be trained in the fundamentals of traffic control and the proper use of traffic control devices.

Note: Traffic control signs and devices will conform to the "West Virginia Manual on Uniform Traffic Control Devices for Streets and Highways."

DRAFT

RESPIRATORY PROTECTION PROGRAM

INTRODUCTION

This program establishes the minimum requirements for the use of respiratory protective equipment, including fit testing, using respirators, maintaining respirators, employee training, and evaluating the effectiveness of this program.

When it is clearly impractical to remove respiratory hazards through engineering controls or where emergency protection against occasional or brief exposures is necessary, approved respiratory protective equipment will be issued and used in accordance with this program.

These requirements apply to all exposures in which employees are required or allowed to wear respiratory protective equipment.

The Project Manager must designate a local program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

I. FIT TESTING PROCEDURES FOR TIGHT-FITTING RESPIRATORS

Before an employee may be required or allowed to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) with the same make, model, style, and size of respirator that will be used.

An employee using a tight-fitting facepiece respirator must be fit tested before initial use of the respirator, whenever a different respirator facepiece (size, style, model or make) is used, and at least annually thereafter.

Additional fit tests must be conducted whenever the employee reports, or the PLHCP, supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

If after passing a QLFT or QNFT, the employee subsequently notifies the program administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable, the employee will be given a reasonable opportunity to select a different respirator facepiece and to be retested.

The fit test must be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are included at the end of this program.

QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.

A. If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half facepieces, or equal to or greater than 500 for tight-fitting full facepieces, the QNFT has been passed with that respirator.

B. Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting PAPRs will be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation that is used for respiratory protection.

1. Qualitative fit testing of these respirators will be accomplished by temporarily converting the respirator user's actual facepiece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator facepiece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator facepiece.

2. Quantitative fit testing of these respirators will be accomplished by modifying the facepiece to allow sampling inside the facepiece in the breathing zone of the user, midway between the nose and mouth. This requirement will be accomplished by installing a permanent sampling probe

DRAFT

onto a surrogate facepiece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the facepiece.

3. Any modifications to the respirator facepiece for fit testing will be completely removed, and the facepiece restored to NIOSH-approved configuration, before that facepiece can be used in the workplace.

II. PROCEDURES FOR PROPER USE OF RESPIRATORS IN ROUTINE AND REASONABLY FORESEEABLE EMERGENCY SITUATIONS

A. These requirements include prohibiting conditions that may result in facepiece seal leakage, preventing employees from removing respirators in hazardous environments, taking actions to ensure continued effective respirator operation throughout the work shift, and establishing procedures for the use of respirators in IDLH atmospheres.

B. Employees may not wear respirators with tight-fitting facepieces if they have:

1. Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function.

2. Any condition that interferes with the face-to-facepiece seal or valve function.

C. If an employee wears corrective glasses or goggles or other personal protective equipment, that equipment must be worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

D. Employees who use a tight-fitting respirator must perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed below, or the respirator manufacturer's recommended user seal check method must be used. **User seal checks are not substitutes for qualitative or quantitative fit tests.**

1. To perform a positive pressure check close off the exhalation valve by covering with the palm of the hand and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece for ten seconds without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

2. To perform a negative pressure check close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s) and inhale gently into the facepiece. The face fit is considered satisfactory if a slight negative pressure can be built up inside the facepiece for ten seconds without any evidence of inward leakage of air at the seal.

E. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the program administrator must reevaluate the continued effectiveness of the respirator.

F. The supervisor or program administrator must ensure that employees leave the respirator use area:

1. To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use.

2. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece.

3. To replace the respirator or the filter, cartridge, or canister elements.

G. If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, the respirator must be replaced or repaired before allowing the employee to return to the work area.

DRAFT

H. For all IDLH atmospheres, the supervisor must ensure that:

1. At least one standby employee is located outside the IDLH atmosphere.
2. Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the standby employee(s).
3. The standby employee(s) are trained to provide effective emergency rescue.
4. The program administrator is notified before the standby employee(s) enter the IDLH atmosphere to provide emergency rescue.
5. The program administrator, once notified, provides necessary assistance appropriate to the situation.
6. Standby employee(s) are equipped with a pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either:
   a) Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
   b) An equivalent means for rescue where retrieval equipment is not used because it increases the overall risk of entry.

III. PROCEDURES AND SCHEDULES FOR CLEANING, DISINFECTING, STORING, INSPECTING, REPAIRING, DISCARDING, AND OTHERWISE MAINTAINING RESPIRATORS

A. Each respirator user will be provided a respirator that is clean, sanitary, and in good working order. Respirators will be cleaned and disinfected using procedures recommended by the respirator manufacturer or the following procedures:

1. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
2. Wash components in warm (110º F maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
3. Rinse components thoroughly in clean, warm, preferably running water. Drain.
4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
   a) Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of warm water.
   b) Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine to one liter of warm water.
   c) Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
5. Rinse components thoroughly in clean, warm, preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
6. Components should be hand-dried with a clean lint-free cloth or air-dried.

DRAFT

7. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
8. Test the respirator to ensure that all components work properly.

B. The respirators will be cleaned and disinfected at the following intervals:

1. Respirators issued for the exclusive use of an employee will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
2. Respirators issued to more than one employee will be cleaned and disinfected before being worn by different individuals.
3. Respirators maintained for emergency use will be cleaned and disinfected after each use.
4. Respirators used in fit testing and training will be cleaned and disinfected after each use.

C. All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they will be packed or stored to prevent deformation of the face piece and exhalation valve.

In addition to the other storage requirements, emergency respirators will be:

1. Kept accessible to the work area.
2. Stored in containers or covers that are clearly marked as containing emergency respirators.
3. Stored in accordance with any applicable manufacturer instructions.

D. Respirators will be inspected periodically as follows:

1. All respirators used in routine situations will be inspected before each use and during cleaning.
2. All respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations, and will be checked for proper function before and after each use.
3. Emergency escape-only respirators will be inspected before being carried into the workplace for use.
4. Respirator inspections must include the following:
   a) A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters.
   b) A check of elastomeric parts for pliability and signs of deterioration.
   c) In addition to the other inspection requirements, self-contained breathing apparatus will be inspected monthly. Air and oxygen cylinders will be maintained in a fully charged state and will be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The regulator and warning devices must function properly.
   d) If respirators are maintained for emergency use, the program administrator must:
      i. Certify the respirator by documenting the date the inspection was performed, including the name and signature of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator.
      ii. Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files.

DRAFT

E. Respirators that fail an inspection or are otherwise found to be defective must be removed from service and discarded or repaired or adjusted in accordance with the following procedures:

1. Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and who will use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
2. Repairs will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.
3. Reducing and admission valves, regulators, and alarms will be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

IV. TRAINING OF EMPLOYEES IN RESPIRATORY HAZARDS AND THE PROPER USE OF RESPIRATORS

A. Effective training must be provided to employees who are required or allowed to use respirators. The training must be comprehensive, understandable, and repeated annually, and more often if necessary.

B. The training must be conducted so that it is understandable to the employees and must be completed before requiring or allowing employees to use respirators in the workplace.

C. The training must ensure that each employee can demonstrate knowledge of at least the following:

1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
2. What the limitations and capabilities of the respirator are.
3. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
4. How to inspect, put on and remove, use, and check the seals of the respirator.
5. What the procedures are for maintenance and storage of the respirator.
6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
7. The general requirements of this program and the OSHA regulation.

D. Retraining will be administered annually and when the following situations occur:

1. Changes in the workplace or the type of respirator render previous training obsolete.
2. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the necessary level understanding or skill.
3. Any other situation arises in which retraining appears necessary.

E. If employees are allowed to wear respirators that are not required because of a hazardous atmospheric condition, the following additional basic advisory information on respirators must be provided:

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for employees. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard. Sometimes, employees may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If you

DRAFT

choose to wear a respirator for your own comfort, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants against which your respirator is not designed to protect. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not use someone else's respirator.

V. PROCEDURES FOR REGULARLY EVALUATING THE EFFECTIVENESS OF THE PROGRAM

The program administrator will conduct evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and continue to be effective.

VI. DEFINITIONS THAT APPLY TO THIS SUPPLEMENT

Air-purifying Respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Atmosphere-supplying Respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or Cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Change Schedule means to refer to manufacture change schedule for when respirator cartridge needs to be changed.

Demand Respirator means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Emergency Situation means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

Employee Exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life Indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Filtering Facepiece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

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Fit Factor means a quantitative estimate of the fit of a particular respirator to a specific individual and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit Test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also qualitative fit test QLFT and quantitative fit test QNFT.)

High Efficiency Particulate Air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Immediately Dangerous to Life or Health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Negative Pressure Respirator (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen Deficient Atmosphere means an atmosphere with an oxygen content below 19.5% by volume.

Physician or Other Licensed Health Care Professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by section III of this program.

Positive Pressure Respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered Air-purifying Respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure Demand Respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Qualitative Fit Test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit Test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Self-contained Breathing Apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service Life means the period of time that a respirator, filter or sorbent or other respiratory equipment provides adequate protection to the wearer.

Supplied-air Respirator (SAR) or Airline Respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-fitting Facepiece means a respiratory inlet covering that forms a complete seal with the face.

User Seal Check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

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SUBCONTRACTOR SAFETY

POLICY

Subcontractors are responsible for providing safe working conditions and procedures for their employees. Subcontractor responsibilities include the following:

- Compliance within the safety guidelines and requirements set forth by the approved CTUB Safety Management Plan unless the subcontractor can provide a more stringent plan.
- Work within the scope of the subcontract must be performed in accordance with all the applicable laws and regulations.
- Must inform CTUB of any hazardous conditions created by their operations.
- Encouraged to participate in safety meetings held by CTUB.

ACCIDENT REPORTING

CTUB General Policies and procedures for accident / incident reporting are outlined within the section titled Accident Investigation and Reporting. Subcontractors are required to report employee injuries and incidents to the Safety Coordinator.

CONFINED SPACES

If the project arranges to have employees of another employer (subcontractor) perform work that involves permit space entry, we must:

1. Inform the subcontractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a written space program meeting the OSHA requirements;
    a. Tell the subcontractor of the elements, including the hazards identified and our experience with the space, that make the space in question a permit space.
    b. Tell the subcontractor of any precautions or procedures that we have implemented for the protection of employees in or near permit spaces where subcontractor personnel will be working.
    c. Coordinate entry operations with the subcontractor when both our employees and subcontractor employees will be working in or near permit spaces.
    d. Debrief the subcontractor at the conclusion of the entry operations regarding the space program followed and regarding any hazards confronted or created in permit spaces during entry operations.
2. In addition to complying with its own written permit confined space entry program, each subcontractor who is retained to perform permit space entry operations must:
    1. Obtain any available information regarding permit hazards and entry operations from us.
    2. Coordinate entry operations with project management, when both employees and subcontractor employees will be working in or near permit spaces.
    3. Inform of the permit space program that the subcontractor will follow and of any hazards confronted or created in permit spaces before the entry operation.

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POLICY OF DRUGS AND ALCOHOL

Please refer to the City of Charles Town Employee Handbook

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APPENDIX A

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New Employee Safety Orientation Checklist

Print Name: _____ **Hire Date**: _____

I am: ☐ New to CTUB ☐ Being Rehired

- ✓ You must wear the personal protective equipment we have provided for you. If you require additional personal protective equipment contact your immediate supervisor.
- ✓ If you are unsure about what you are asked to do, or, the safest way to perform your work STOP! Contact your immediate supervisor immediately. Additionally, you are asked to assist new or unfamiliar employees in these safe work procedures.
- ✓ You must perform a daily equipment inspection prior to use.
- ✓ You must maintain a safe, clean and orderly work area.
- ✓ You must familiarize yourself with the location of fire extinguishers, first aid kits, and emergency telephone numbers.
- ✓ You are encouraged to participate in "Weekly Tailgate Safety Meetings".
- ✓ Regardless of the severity, you must report every accident to your immediate supervisor immediately, the same day as the event. Failure to report may result in disciplinary action up to and including the termination of your employment.
- ✓ Before you seek medical attention for a work-related injury, you must get authorization from the safety department. Contact your immediate supervisor and they will contact the Safety Department for this authorization.

MY SIGNATURE BELOW INDICATES THAT THE ABOVE ITEMS HAVE BEEN REVIEWED WITH ME AND AS A CONDITION OF CONTINUED EMPLOYMENT I AGREE TO COMPLY!

Employee Signature: _____ Date:

Safety Signature: _____ Date:

Supervisor Signature: _____ Date:

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HAZARD ANALYSIS/RISK ASSESSMENT

JHA #: _____

Operation: _____ **Date:** _____

Superintendent: _____ **Foreman:** _____

Competent Person: _____

Step-By-Step Plan

1.	9.
2.	10.
3.	11.
4.	12.
5.	13.
6.	14.
7.	15.
8.	16.

Operational "BIG RISKS"	Access/Egress Identificaion		Potential Pinch Points
	Type	Location	
1.	1.		1.
2.	2.		2.
3.	3.		3.
4.	4.		4.
5.	5.		5.
6.	6.		6.
7.	7.		7.
8.	8.		8.

Potential Stored Energy Conditions

1. _____
2. _____
3. _____
4. _____

Ergonomic Concerns

1. Lifting
2. Repetitive Motion
3. Vibration
4. Awkward Position

REQUIRED PROTECTIVE EQUIPMENT

Abrasive Blast Hood		Hearing Protection		Welding Hood	
Anti-Vibration Gloves		Life Vest		Welding Leathers	
Chaps (kevlar/leather)		Metatarsal Guards		Other	
Cutting Goggles		Reflective Vest		Other	
Face Shield		Rubber Boots		Other	
Filtering Facepiece		Safety Glasses			
Gloves (specify type required)		Safety Goggles			

Note: Operations with a fall hazard of six feet or more requires a fall protection work plan.

REQUIRED TOOLS (COVERED BY SEPARATE HAZARD ANALYSIS)

Air Compressor		Electrical Cords		Portable Bandsaw	
Blowpipe		Electrical Drill		Roto Hammer	
Chainsaw		Electrical Grinder		Sawzall	
Chipping Gun		Generator		Skil Saw	
Chop Saw		Hand Tools		Tremie Pipe	
Concrete Bucket		Hydraulic Jacks		Vibrators	
Cure Pump		Impact Wrench		Welding Machine	
Cutting Torch		Ladders		Other	

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Incident Investigation Form

Confidential and Proprietary

Incident Date_____ **Job #**_____ **Job Name**_____

_____

Employee(s) Involved_____ Drug Test Given? Yes ☐ No ☐

_____ **If Not – Why Not?** _____

_____

_____

_____

☐ ☐ ☐

Type of Incident: **CTUB Loss** **Liability (Equip./Property)** **Work COMP (3rd Party/Rental)** **(Physical Injury)**

Recurrence Prevention

What were the unsafe conditions of actions involved in this incident?

What can we do to prevent this type of incident from happening again?

All Signatures Required

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Employee(s) Involved	Supervisor/Foreman	Manager Review
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

This form used solely for the CTUB Safety Improvement

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HAZARDOUS CHEMICAL INVENTORY/LIST

THIS LIST APPLIES TO THE FOLLOWING WORK SITE(s)

Hazardous Chemical	Common Name	Physical Hazard	Health Hazard	SDS on File	Container Labeled

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Confined Space Pre-Entry Checklist

Work Location _____ Job Number _____ Date _____ Time _____

Supervisor's Printed Name _____ Work to Be Performed _____

1. Is this a construction work place (as defined)? ____ If yes go to 2. If no go to 4.

2. Does space have limited access and a dangerous atmosphere? ____ If yes go to 3. If no this is not a construction confined space. Sign certification below and go to work.

3. Space may only be entered following the Construction Confined Space requirements.

4. Does space have all the following conditions?

   It is large enough and so configured that an employee can enter and perform assigned work.

   It has limited or restricted means for entry or exit.

   It is not designed for continuous employee occupancy. ____ If yes go to 5. If no this is not a confined space. Sign certification below and go to work.

5. Does the confined space have one or more of the following characteristics?

   It contains or has a potential to contain a hazardous atmosphere.

   It contains a material that has the potential for engulfing an entrant.

   It has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.

   It contains any other recognized serious safety or health hazard. ____ If yes go to 6. If no this is not a permit-required confined space. Sign certification below and go to work.

6. Will employees enter the space? _____ If yes go to 7. If no, post signs and prevent entry.

7. Are lines that may convey dangerous substances disconnected or blocked to prevent a hazardous atmosphere? _____ If yes go to 8. If no go to 15.

8. Has the space been emptied, flushed or purged of dangerous substances? _____ If yes go to 9. If no go to 15.

9. Does space have ventilation that will prevent a hazardous atmosphere? _____ If yes go to 10. If no go to 15.

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10. Has the air in the space been tested for oxygen concentration, combustibility and toxicity by a qualified person? _____ If yes go to 11. If no, test air before continuing.

11. Is oxygen concentration between 19.5% and 23.5%?_____ If yes go to 12. If no go to 15.

12. Is combustible gas, vapor and mist <10 LEL?_____ If yes go to 13. If no go to 15.

13. Is toxic substance concentration < PEL?_____ If yes go to 14. If no go to 15.

14. Are space hazards eliminated?_____ If yes this is not a permit-required confined space. If no go to 15.

15. **THE SPACE MAY ONLY BE ENTERED USING AN ENTRY PERMIT.**

I certify this space is not a construction confined space and is safe to work in _____

I certify this space is not a confined space and is safe to work in _____

I certify this space is not a permit required confined space and is safe to work in _____

I have determined that this space is a permit-required confined space and work in this space must be conducted using an entry permit _____

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ENTRY PERMIT

Date: _____ Length of Entry _____ **Permit Not Valid for More than 8 Hours**

Space location and description

_____

_____

Purpose of entry _____

Entry Supervisor(s) _____ Type of Crew_____

Authorized Entrant(s)	Employee #	Attendant(s)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Permit Space Hazards:	**Y / N**	**Acceptable Entry Conditions:**	**Y / N**
Oxygen Deficiency <19.5%	____	Pre-Entry Checks Complete	____
Oxygen Enrichment >23.5%	____	Secure Area (Post and Flag)	____
Flammable Gases or Vapors	____	Lines Disconnected/Blocked	____
Airborne Combustible Dust	____	Purge/Flush/Vent	____
Toxic Gases or Vapors	____	Ventilation	____
Engulfment Hazards	____	Lighting (Explosive Proof)	____
Converging Walls	____	Breathing Apparatus	____
Sloped Floors	____	Emergency Retrieval Equip	____
Mechanical Hazards	____	Full Body Harness	____
Electrical Hazards	____	Protective Clothing	____
Other	____	Hot Work Permit	____
N/A for items that do not apply.		**N/A for items that do not apply.**	

Prohibited conditions

_____

Methods used to isolate the space

_____

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Methods used to eliminate or control hazards before entry

_____

Methods used to protect entrants from external hazards

_____

Communication procedures

_____

Rescue and emergency services on-site

_____

Additional rescue services and the means for summoning them

_____

Equipment required for entry

_____

Air Tester's Name _____ Air Test Instrument(s) Used_____

Date Instrument(s) Last Calibrated _____ Instrument(s) Checked Against a Known Gas

_____

Continuous Monitoring Acceptable Record Monitoring Results At Least Every 2

_____

Hours

Test(s) to be Taken Entry Levels

_____

Percent of Oxygen	19.5% to 23.5%	_____	_____	_____	_____	_____	_____	_____
Lower Flammable Limit	< 10%		_____	_____	_____	_____	_____	_____
Carbon Monoxide	< 35 ppm	_____	_____	_____	_____	_____	_____	_____
Aromatic Hydrocarbon	< 1 ppm*, 5 ppm‡	_____	_____	_____	_____	_____	_____	_____
Hydrogen Cyanide	< 4.7 ppm‡ S		_____	_____	_____	_____	_____	_____
Hydrogen sulfide	< 1 ppm*, 15 ppm‡		_____	_____	_____	_____	_____	_____
Sulfur Dioxide	< 2 ppm*, 5 ppm‡		_____	_____	_____	_____	_____	_____
Ammonia	< 25 ppm*, 35 ppm‡		_____	_____	_____	_____	_____	_____
Other _____	_____		_____	_____	_____	_____	_____	

* 8 hour Time Weighted Average: Employee can work 8 hours. ‡ Short-term exposure limit: Employee can work up to 15 minutes.

Remarks: _____

_____

_____

Entry Supervisor's Signature Authorizing Entry _____

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HOT WORK PERMIT

Date: _____Length of Entry _____**Permit Not Valid for More than 8 Hours**

Space location and description _____

_____

Purpose of performing hot work:_____

_____

Specific types of authorized hot work:_____

_____

Conditions of Permit

Hot work, such as welding or cutting operations, the use arc, spark or flame producing tools that inherently are sources of ignition. The individual in charge must inspect of the area to be sure that it is safe for the work to be done and that safe work procedures will be followed.

- ❑ Flammable or combustible materials have been removed from the area within 35 feet of the hot work. (If the material cannot be moved it must be protected from sparks and flame by flameproof shields).
- ❑ Appropriate fire extinguishing equipment is properly located at the site.
- ❑ Where a firewatcher is appropriate, one will be designated and remain at the location of hot work during, and a **minimum of one half hour after hot work is completed**.
- ❑ Hot work will not be conducted in areas that have not been inspected or authorized by a hot work permit.
- ❑ Precautions will be taken wherever uncovered openings or cracks in floors and walls exist near the location of the work so that no combustible or flammable materials will be exposed to sparks or flames.
- ❑ Cylinders containing oxygen, acetylene or other fuel or gas will not be taken into confined spaces.
- ❑ When hot work operations are suspended for any substantial periods of time, such as lunch or overnight, gas cylinders will be shut off. Where practicable the torch and hoses bill be removed from confined spaces.
- ❑ Upon completion of welding operations, the welder will a means of warning other workers to the location of hot metal

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Prohibited Conditions:_____

Remarks:_____

The Permit Conditions have been explained and are understood by the Authorized Workers listed below:

Authorized Workers: _____ _____

Fire Watcher:_____

The location identified above is safe for personnel and safe for hot work.

Supervisor Authorizing Hot Work:_____

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Workplace Injury or Accident Procedure

In the event of a workplace injury or accident, please follow the following procedures:

1. Notify your immediate supervisor of the injury. Either the employee or Supervisor must also notify the Utility Manager, HR Manager, and Safety Coordinator.
   ***If it is an emergency, call 911 or go to the nearest emergency room.
2. Employees should use (if possible) the Valley Health Urgent Care at 100 Oak Lee Drive, Ranson for all workplace injuries. The Supervisor or Safety Coordinator may accompany the employee to the facility.
3. Valley Health will contact the HR Manager for authorization to provide care and fill out the appropriate Workers Compensation forms on file. They will forward this form to the HR Manager.
4. If the employee chooses to use a different healthcare facility, employee must ensure the appropriate Workers Compensation form is completed by the treating physician. Please contact the HR Manager if the healthcare facility does not have the appropriate forms. Return the form to the HR Manager after your visit for your claim to be covered.
5. The HR Manager will forward all injury forms to Encova (Workers Compensation provider).
   ***All workplace injuries must be reported within 48 hours of the injury to be covered by Workers Compensation.
6. For vehicle accidents, HR Manager will contact the Motor Vehicle Insurance Company (Assured Partners) to begin a vehicle claim.
7. Employees will be subject to a drug test at a healthcare facility for any motor vehicle accident.
8. Safety Coordinator will complete an Incident Review Form to investigate the injury or accident.
9. Hospital admissions or overnight hospital stays will be reported to OSHA by the Safety Coordinator.
10. The employee may return to work when advised by the treating physician. With the coordination of the treating physician, Utility Manager and immediate Supervisor, a Return-to-Work plan will be evaluated if needed.

DRAFT

CTUB Return to Work Policy

CTUB's primary goal is to accommodate injured workers by identifying or modifying jobs to meet their physical capacities and allowing them to Return to Work as quickly and smoothly as possible. The company is committed to individualizing Return to Work programs based around the individual's physical capabilities and will review all task assignments regularly to ensure duties are appropriate.

We are committed to early Return to Work and recognize that it speeds up the recovery process and reduces the likelihood of permanent disability. CTUB employees are expected to show the same commitment to the program by following the Return to Work Policy and all guidelines of the Return to Work Program. The Return to Work Program requires a team approach, so employees are expected to cooperate with the management team, supervisors and medical staff should they ever become injured and unable to perform your full job duties.

Prior to working on any CTUB job site, each employee is expected to have read the entire Return to Work Policy, which includes the following sections:

- Introduction
- Scope
- Definitions
- Applicability
- Responsibilities
- Procedure
- Refusal to Participate

If you have any uncertainty or questions regarding the content of these policies, you are required to consult your supervisor. This should be done prior to signing and agreeing to the CTUB Return to Work Policy.

I am aware of and have read CTUB's Return to Work Policy, and I understand the requirements and expectations of me as an employee. Should I become injured or ill and unable to carry out my regular duties, whether it happens inside or outside the workplace, I fully recognize expectations of me during my recovery. I also know that CTUB reserves the right to pay less than my full-duty rate during transitional work if it is justified.

I understand that if I choose not to participate in the Return to Work Program or follow this policy's guidelines, I may become ineligible for state workers' compensation benefits and, in some cases; my refusal may be grounds for termination.

Employee Signature: _____

Date: _____

DRAFT

GD&F
GWIN
DOBSON &
FOREMAN
ENGINEERS

March 4, 2021

Kristen M. Stolipher, Utility General Manager
Charles Town Utility Board
661 South George Street, Suite 101
Charles Town, WV 25414

RE: WTP NPDES Line Survey Proposal (Task Order)

Dear Mrs. Stolipher:

Per your request, Gwin, Dobson & Foreman, Inc. (GD&F) is pleased to present the following proposal (Task Order) to survey over 1-mile of distance along Route 9 from the existing WTP to Evitts Run for a new NPDES discharge line.

Understanding of the Project

GD&F proposes to provide a detailed topographic and utility survey from the existing WTP to Evitts Run following Route 9. This survey would be used to design a new NPDES discharge line from the existing WTP to Evitts Run.

Proposed Services

GD&F will provide the following services:

- Perform a site survey to obtain topographic and existing utility information.
- Set and establish control points and benchmarks.
- Collect and review the survey data.
- Develop a basemap that would feature contours, utilities, property owner information, right-of-way information, etc. in both digital and hard copy formats.

Proposed Schedule

GD&F will begin immediately upon written authorization from the Board and will complete the survey basemap within two (2) months from authorization.

Proposed Cost

GD&F will provide the above scope of services for an estimated, not-to-exceed, fee of $10,000.00. Invoices will be submitted on a monthly basis based on the rates below. Payment will be made on an accrued hourly basis plus expenses. The expenses include direct expenses such as mileage, lodging, meals, printing/copying, etc. as necessary to complete the services. Payment is due within thirty (30) days of invoicing.

Estimated Rates:

5 Days of a 2-man survey crew @ $1,350/day = $6,750
600 miles @ $0.55/mile = $330
Lodging $210/night (2 rooms) x 4 nights = $840
Meals $100/day x 5 days = $500
CAD Basemap = 20 hours @ $78/hour = $1,560

Total Estimated Cost = $10,000.00

We appreciate the opportunity to submit this proposal. To authorize the services, please complete the following authorization section of this proposal and return a signed copy to our office. If you have any questions, please contact our office at your convenience.

Respectfully submitted,
GWIN, DOBSON & FOREMAN, INC.

Christopher M. Eckenrode

Christopher M. Eckenrode, P.E.
Senior Project Engineer

CME/amk
Prop/2021/CTUB_NPDESSurvey_ESP_3-4-21.doc
cc: File

ACCEPTANCE OF PROPOSAL

The Charles Town Utility Board hereby accepts the above service and cost proposal.

_____ _____
Authorized Representative Date

_____
Attest/Witness

March 8, 2021

Gwin, Dobson & Foreman, Inc.
3121 Fairway Drive
Altoona, Pennsylvania 16602

Attn: Mr. Christopher M. Eckenrode, PE
Senior Project Engineer
P: [814] 943-5214
E: ceckenrode@gdfengineers.com

Re: Well Site Selection (Stage 1) Hydrogeologic Study
Charles Town Utility Board Potable Water Treatment Plant
Charles Town, West Virginia
Terracon Project No. JD217021

Dear Mr. Eckenrode:

As requested, Terracon Consultants, Inc. (Terracon) is submitting this report summarizing the findings of the Stage 1 hydrogeologic assessment to assist in locating potential water supply wells intended to supplement the supply of the Charles Town Utility Board Potable Water Treatment Plant.

1.0 PROJECT INFORMATION

This project assessed the feasibility of developing new water supply wells for the City of Charles Town Potable Water Treatment Plant, located on Charles Town Road (Route 115) in Charles Town, Jefferson County, WV. The wells are intended to augment water from the Shenandoah River, which is currently the plant's only source of water. Based on information you have provided to us, the wells must have a potential sustainable yield of not less than 720,000 gallons per day (500 gallons per minute), and should be located no more than 2-miles from the treatment plant.

2.0 SCOPE OF SERVICES

The scope of services for the project were as follows.

- Terracon performed a desktop hydrogeological study in compliance with accepted and standard practices for developing high-yield water supply wells;
- Terracon compiled this summary report which combined the results of the desktop hydrogeological study.

2.1 Methods and Procedures

Desktop Hydrogeologic Study

A desktop hydrogeological study was performed for possible well sites within 2-miles of the treatment plant, the data review included the following:

1. USGS and Jefferson County geologic and topographic information, including fracture trace analysis data available from the USGS;
2. Property plats and aerial photographs.;
3. Existing Jefferson County Health Department well data or descriptive statistical summary of the same. (e.g. minimum, maximum and mean of well data, etc.) if available;
4. Geologic maps and data reports (well logs, water quality analysis, geologic information including karst features, bedrock outcrops, etc.);

The results of the desktop hydrogeologic study was incorporated into the final report.

Summary Report

This summary report contains the results of the desktop hydrogeological study. The report includes potential locations of proposed wells or well field areas, and the hydrogeological rationale for their placement. Proposed locations, and any pertinent mapping data for test wells has also been transmitted to the client as a GIS dataset.

3.0 GEOLOGY AND TERRAIN

3.1 Physiography – The proposed well location sites occur primarily within the Valley and Ridge Physiographic Province of West Virginia, although the eastern extent of the study area east of the Shenandoah River is within the western edge of the Blue Ridge Physiographic Province.

The Valley and Ridge consists of alternating ridges and valleys which form from the differential weathering of sedimentary rock from the Paleozoic Geologic Era. The Valley and Ridge Province is bordered on the east by the Blue Ridge Physiographic Province and on the west by the Appalachian Plateau Physiographic Province.

There are many bedrock types present in the Valley and Ridge, but in general, less resistant limestone, dolostone, and shale bedrock underlie the valleys while the more resistant sandstone and conglomerate bedrock underlie the ridges. The Valley and Ridge can be naturally divided into two sub-provinces. The eastern portion of the province is the Great Valley subsection, an area underlain predominantly by carbonate rock units (limestone and dolomite), and clastic rocks (sandstone, siltstone and shale) from the Cambrian and Ordovician Geologic Periods. The western portion of the Valley and Ridge consists of alternating linear mountain ridges that are

supported by sandstone and conglomerate bedrock, separated by valleys underlain by limestone, dolostone, or shale bedrock. These sedimentary rocks were deposited during the Cambrian through Pennsylvanian Geologic Periods.

The eastern edge of the study area is within the Blue Ridge Physiographic province. The Blue Ridge province is a mountainous belt stretching from Pennsylvania southwest to Georgia. The mountains are made of highly deformed metamorphic rocks of largely Precambrian ages. These include schists, gneisses, slates, and quartzites, and are extensively intruded by igneous bodies. To the west, the Blue Ridge province is structurally divided from the Valley and Ridge province by thrust faults that overlay in part the younger sedimentary rocks of the Valley and Ridge. In the north, the Blue Ridge is as narrow as 13 miles, but increases in width and relief to the south reaching 70 miles and peaks above EL 6,000. The Blue Ridge province includes several mountain ranges, including the Blue Ridge Range which is a drainage divide between the Great Valley to the west and the Atlantic Ocean to the east.

3.2 Topography – Referencing the USGS 7.5-minute topographic quadrangle (Charlestown, West Virginia, 1980 rev. 1984) most of the properties comprising the survey area are in a broad, gently rolling lowland encompassing the watersheds of the Evitts Run on the south, the Cattail Run to the north, and the Shenandoah River to the east. Elevations range from a high of EL 540 near Charles Town, gradually decreasing towards the location of the water plant at EL 460. A low ridge divides the relatively low flat plain near the water plant from the valley of the Shenandoah River, along which is the lowest elevation of the study area at EL 340. (A map showing the general topography within the 2-mile radius of the water plant is included as Map 1, Appendix A.)

3.3 Geological Setting – The geology of the Charlestown Quadrangle has been revised several times since it was first mapped. In general, the properties comprising the survey area are situated along the base of the blue ridge escarpment where a significant amount of faulting and deformation has occurred. The bedrock underlying the survey area is mapped as having been folded, faulted, and overturned yet the strike of the bedrock trends northeast, similar to the regional trend. It is of note that all of the geological units in the study area date to the Cambrian Geologic Period of the Paleozoic Era with the exception of the Conococheague, range in age from approximately 520 to 485 million years before the present. The Conococheague Formation is dated the Late Cambrian and subsequent Early Ordovician periods. (A map showing the geological units underlying the survey area is included as Map 2, Appendix A).

The following bedrock units are mapped (Dean, et al, 1990) within the survey area from geologically oldest to youngest:

Antietam Formation (Ca) – Also known as the "Antietam Quartzite", this unit is a metasandstone comprised primarily of silica-cemented fine to coarse grained quartzite. It is often brecciated in its basal section, and is separated from the overlying Tomstown Dolomite by a zone of highly fractured rock. The Antietam is the oldest unit in the study area, and only present primarily on the eastern side of the Shenandoah River. In the study area this unit has been approximated at 400-800 feet in thickness.

Tomstown Dolomite (Ct) – This unit unconformably overlies the Antietam, however the contact is seldom well-exposed in the study area. The Tomstown is an aphanitic (i.e. extremely fine-grained) thick bedded blue-gray dolomite, with some interbeds of siliceous limestone and chert. It has been quarried in this section of West Virginia for its commercial-grade white and very pure low-silica dolomite rock. The Tomstown is approximately 1,000 - 1,200 feet in thickness.

Waynesboro Formation (Cwy) – The formation is compartmentalized into three different lithologic sections where the upper most section is red shale and sandstone, the middle section consists of medium gray dolomite and limestone, and the lower section is a combination of sandy limestone, sandstone and shale. In the field site, the uppermost section of the Waynesboro Formation is exposed at the surface; therefore, it may serve as an aquitard to the adjacent and more permeable Elbrook Formation. The unit is approximately 1,000 feet in thickness.

Elbrook Formation (Ce) – This formation is conformable with the underlying Waynesboro Formation and is comprised of argillaceous, dolomitic limestone with beds of dolomite and aphanitic algal limestone whereas the middle of the formation is characterized with thin sandy beds. It is of note that the largest number of caves in this part of the Shenandoah Valley occur within the Elbrook Formation. This unit is 2,000 feet in thickness.

Conococheague Formation (OCc) – This unit conformably over the Elbrook Formation, and consists primarily of algal and mechanically deposited limestone, with interbeds of dolomite. In places it is laminated with silica-rich and dolomitic layers. The Conococheague is 2,200 feet in thickness.

3.4 Hydrogeology – With the exception of the Antietam formation, the entire project site is mapped as underlain by soluble carbonate bedrock forming a regional karst terrain (i.e. a landscape characterized by the presence of sinkholes, caves, sinking and losing streams, and a highly irregular "pinnacled" overburden/bedrock interface). The geological units vary in their karst feature development, however within the study area the greatest number of surface karst features are found within the Elbrook Formation due to it having the greatest areal coverage of all the geological units. However, the highest concentration of features per square mile is actually located within the Tomstown Dolomite. Nevertheless, there is no direct correlation between the number or concentration of surface karst features and the extent or potential productivity of the karst aquifer within these units.

In general, the karst forming units in the study area possess no primary porosity (i.e. void space within the grain structure), so all water is stored in primary fractures, solution-enlarged fractures and conduits. The distribution of these water-bearing subsurface features is extremely heterogeneous and non-uniform, and varies by depth.

The karst aquifer is essentially divided into two units: a shallow "epikarst" aquifer, which contains air and sediment filled fractures and conduits that can fill with water during times of high precipitation, and can be nearly dry during droughty periods. The epikarst connects with a perennially water-filled deep "phreatic" aquifer below (Figure 1).

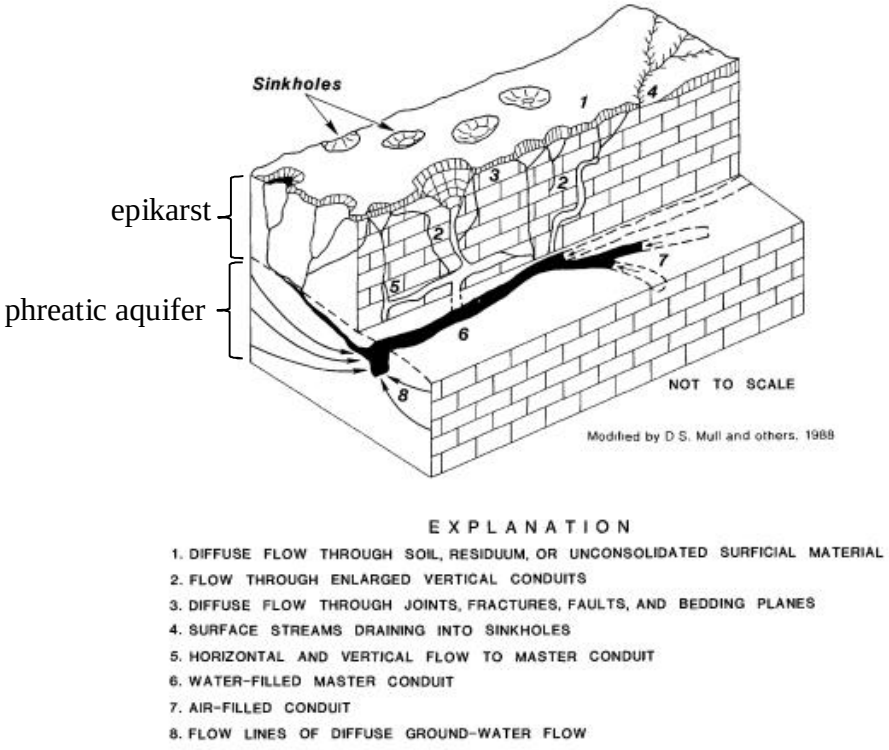


Figure 1. Components of ground-water flow through a cavernous carbonate aquifer (*from* Kozar, et al, 1991)

Unlike fractured bedrock systems in clastic rocks, where the fractures tend to decrease in size and extent with increasing depth, in karst systems the fractures often remain consistent, or can actually increase in size and relative storage with depth. A study by the United State Geological Survey (USGS) suggested that the phreatic aquifer in the Shenandoah Valley could reach depths of at least 4 kilometers (2.48 miles) below the surface (Figure 2), in particular where the bedding of the regional carbonate formations is steeply inclined along the western edge of the Blue Ridge Front (Yager, et al., 2008). It is of note that some of the highest yield wells in the Great Valley region are extremely deep (>1,000 feet below the surface), however the cost of drilling wells to this depth is typically prohibitive for most jurisdictions.

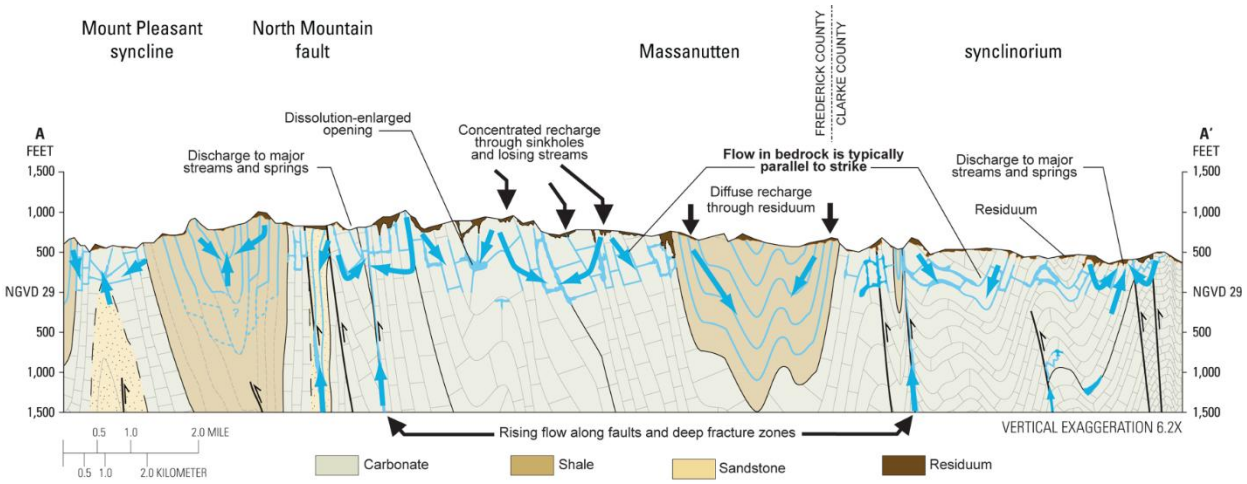


Figure 2. Model of deep circulation in the Shenandoah Valley (courtesy of Daniel Doctor, USGS)

4.0 DATA REVIEW AND DESKTOP ANALYSIS

4.1 Prior Well and Groundwater Studies

There have been a series of hydrological studies concerning the project area which included summaries of existing well data. The first of these was conducted by William Hobba for the West Virginia Geological Survey (WVGES) in 1978, and published in 1981. This initial report was expanded upon by an additional report published by the USGS that included sinkhole locations and the results of dye trace studies (Kozar, et al., 1991). In the initial report, Hobba collected data on 218 wells and springs across Jefferson County, and using the data for static water level in the wells was able to derive a groundwater contour map. His study also documented the locations of fracture traces from aerial photographs, lineaments from satellite data, geologic faults, cavernous zones, and areas of “losing” streams (i.e. streams that lose water along their channels into the subsurface). Within the current study area, Hobba’s investigation suggested that the average groundwater elevation was approximately located at EL 500 (an average of 40 feet below the surface), dropping gradually towards the east to EL 350 along the bluffs above the Shenandoah River at Bloomery Bridge on Charles Town Road east of the Water Plant. In the immediate vicinity of the water plant the groundwater was inferred to be at EL 425, approximately 75 feet below the surface.

A subsequent study conducted by the USGS (McCoy, et al, 2005) documented fracture traces, structural geology, and transmissivity values for a series of wells and springs, in an attempt to show patterns of relationships between the structural geology and groundwater yield. The most interesting results of this study was the findings of a direct correlation between “cross-strike” fractures (i.e. fractures running perpendicular to the general southwest to northeast strike of the regional bedrock), and high yield wells and springs. This study was followed in 2007 by a base

flow[1] study by the USGS (Evaldi, et al., 2007) which documented the measured base flow yields of watersheds based on stream and spring data across Jefferson County. This study measured four areas of unusually high base flow to the west, east and north of Charles Town as shown in Figure 3.

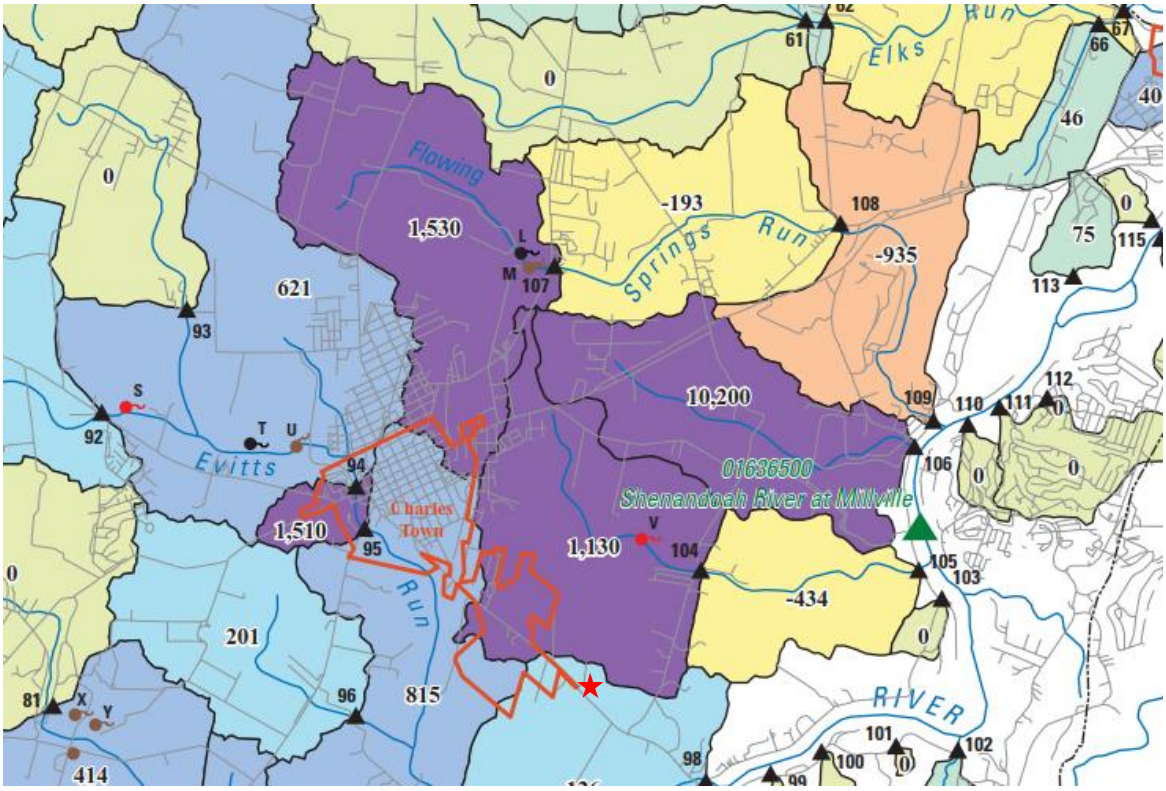


Figure 3. Excerpt from Plate 1 of Evaldi, et al. (2007) showing the location of the water plant (red star) in relation to measured base flow in the surrounding area. The spring labeled "V" is the Stonefield Spring, which at the time of the study had a measured flow rate of 1.6 million gallons per day (gpd). The base flows yield values shown within each watershed are gpd per acre.

The base flow study suggested that to the immediate north of the water plant the watershed of the Cattail Run had a base flow of 1,130 gpd/acre. The watershed of an unnamed tributary to the north had an even higher base flow, measured at 10,200 gpd/acre, however this value was measured at the outfall of the Millville Quarry dewatering channel, so the base flow was essentially based on the water being pumped out of the deep quarry excavations. An isolated area of high base flow at 1,150 gpd/acre was also measured within the watershed of the Evitts Run, immediately west of Charles Town.

[1]Base Flow is typically defined as the portion of the streamflow that is sustained between precipitation events, fed to streams by delayed pathways.

One of the more interesting findings of this study was the gauging of the flow of the Stonefield Springs, located approximately 1.25 miles north of the water plant. During the study this spring was gauged at a flow rate of 1.7 million gpd (1,180 gallons per minute). Above this spring the Cattail Run is essentially a "dry run" for much of the year, with little or no water in its channel. However, at the gauging point near Mechanicstown (black triangle labeled 104 in figure 1), the flow was measured at 2.12 million gpd, an increase of 0.42 gpd. This suggests springs along or within the channel contributed to the stream's base flow. It is noted that during a drought this spring dropped its flow to less than half of the rate measured in 2007. Ron Widmeyer, the owner of the spring reported (verbal communication, 2/22/21) that the flow during the drought was approximately 500 gallon per minute (gpm), equivalent to 720,000 gpd. This behavior is typical of many of the large springs in the Great Valley, where the flow during severe drought often drops to less than half of the spring's yield during periods of average annual precipitation. Studies of the age of spring water conducted by the USGS have demonstrated that most of the large springs have two components: a "young water" component derived from the shallow epikarst (upper) aquifer, and an "old water" component derived from the deep phreatic aquifer (Plummer, 2011; Plummer, et al., 2013; Yager, et al., 2013).

The most recent review of the hydrogeology of Jefferson County was performed by Analytical Services Incorporated (ASI) in 2012, on behalf of the Jefferson County Commission (Maloy and Carter, 2012). This study reviewed all of the previously mentioned studies, as well as others which covered the entire county, the majority of which were performed by the USGS regarding the hydrogeology of the USGS Leetown Science Center area. ASI's review of the available data broke the county down into three units: a western "fault dominated" section; a central "folded carbonates" unit, and an eastern "metamorphic" unit. The ASI study summarized well yields based on the earlier reports by the WVGES and USGS, and well records obtained from the records of the Jefferson County Department of Environmental Health.

The study summarized the well yield and depth data for the area of the entire county, based on the geological units the wells were located in. For this report we have summarized the data for the relevant geological units in Table 1 as follows.

Table 1 – Well Yield and Depth Summary by Geologic Formation

Formation	Count (yield)	Mean Yield (gpm)	Median Yield (gpm)	Count (depth)	Mean Depth (feet)	Median Depth (feet)
Ca	20	13.7	10.0	20	337.1	325.0
Ct	64	20.3	18.0	63	294.2	245.0
Cw	47	22.8	20.0	47	294.6	240.0
Ce	231	26.1	20.0	228	344.9	308.0
OCc	265	40.8	15.0	259	302.8	285.0

This data suggested that the greatest number of high yielding wells were located in the Conococheague Formation (OCc). However, the data shown in Table 1 do not reveal the relative heterogeneity of the high yielding well locations, and how they tend to correlate with certain

geological features. The ASI study identified a major lineament of high-yielding wells running from west to east (perpendicular to the strike of the bedrock) in the area of Shenandoah Junction, north of the current study area. However, there was no correlation between this lineament of high yielding wells, and fault or fracture patterns. Two smaller areas of high yielding wells were also identified in the Leetown and Uvilla areas, the former correlating well with fault zones and fractures, but the latter seemingly unassociated with any significant structural features. It's notable that the Leetown area has been intensely studied by geologists (Kozar et al., 2007), due to the presence of the USGS Leetown Science Center, thus more is known about the structural geology and hydrogeology of that area than through most of Jefferson County.

4.2 Current Study

Based on the review of prior studies summarized in section 4.1, Terracon's geologists decided to locate potential high-yield well areas by primarily analysis of the structural geology, specifically using prior fracture trace and fault analyses, and a new fracture trace analysis.

Methodology - Terracon completed a fracture trace within 2-miles of the water treatment plant. For this report, the fracture and lineament orientations are reported as strike, which is an azimuthal measurement (0° – 360°) where 0° is north (e.g. 45° = Northeast and 315° = Northwest). The fracture trace utilized existing geologic and geographic data sets including:

1. Caverns of West Virginia (Davies, 1958);
2. Two-foot and 4-foot contour interval maps derived from county level digital terrain models (DTMs), and 1- and 3-meter contour maps derived from state level digital elevation models (DEMs);
3. Aerial photographs (both recent and historical);
4. USGS Topographic 7.5-minute topographic quadrangles;
5. Sinkhole and depression locations available from the USDA-NRCS soil survey of Jefferson County, and prior studies (and)
6. LIDAR data.

In addition, the fracture locations were correlated with the existing dye traces (Kozar et al., 1991; Jones 1997).

Results – A fracture trace analysis for the AOI resulted in the identification of three lineament families trending in the north-northeast (NNE), east-northeast (ENE), and west-southwest (WSW) directions. The longest lineaments follow the NNE direction which is parallel with the regional geologic strike and the second most common fracture were the WSW "cross fractures".

A map showing the current fracture trace analysis, fault locations, and rose diagram is included as Map 3, Appendix A. The fractures were parsed into "major" and "minor" based on the topographic prominence of the lineament and whether it crosscut major geologic structures and contacts.

5.0 PROPOSED WELL AREAS

A series of eight well areas were identified for this study, based on the following factors:

1. Locations within 2-miles of the water plant;
2. Presence of significant fractures and faults;
3. Presence of the intersection of cross-strike fractures and strike parallel fractures;
4. High base flow as determined by the USGS study;
5. Geology of the bedrock.

The proposed well areas are shown on Map 4, Appendix A. It should be noted that all of these areas are mapped as underlain by the Elbrook Formation. Each area and the rational for choosing it is detailed as follows.

WTP NE – The center of the area is located approximately 0.6 miles to the north-northeast of the treatment plant, and just south of Route 9. A major NE trending fracture crosses this area, intersected by several minor cross-strike fractures. It's of note that the highly yielding Stonefield Spring is located along this same major fracture. This area is located within a watershed where the base flow was measured at 1,130 gpd/acre.

WTP SW - The center of the area is located approximately 0.66 miles to the southwest of the treatment plant. A major NE trending fracture crosses this area, intersected by several long minor cross-strike fractures. This area is located within a watershed where the base flow was measured at 815 gpd/acre.

Clipp – The center of this area is located 0.94 miles south-southeast from the water plant. A significant mapped fault crosses the area, and several significant fracture zones are located in the southern section of the area. Although the base flow measured for this area was 126 gpd/acre, the Clipp Spring, with a measured discharge of 216,000 gpd is located approximately 0.44 miles to the west, and within the same base flow watershed.

South Fault – The center of this area is located 1.69 miles south of the water plant. A mapped fault, and significant cross-strike fracture along with several strike-parallel fractures have been mapped within this area. It should be noted that the contact between the Elbrook Formation and the Waynesboro Formation is mapped in the eastern part of this area.

North Fault – The center of this area is located 1.74 miles north-northeast of the water plant. Two major fractures, one cross-strike, and one parallel to the strike, are located in this area. The cross-strike fracture is also intersected by a mapped fault. The watershed of this area has been measured to have a base flow of 1,130 gpd/acre.

Charles Town – The center of this area is 1.25 miles northwest of the water plant, encompassing an area near the intersection of S. George Street and S. Samuel Street in the southern part of Charles Town. This area has a complex of both major and minor fractures, including the intersection of two major cross-strike fractures, and a major strike-parallel fracture. The watershed of this area has been measured with a base flow of 815 gpd/acre.

The USGS fracture study also indicated a well approximately 0.89 miles to the northwest of this area had a measured transmissivity of 9,000 ft^2/day, and a specific capacity of 34.3 gpm/foot. This is a very shallow well (67 feet below the surface), and the static water level at the time of measurement was 18 feet below the surface. Based on the specific capacity, this well was yielding at approximately 1,685 gpm at the time of measurement. It's of note that it is mapped as underlain by the Conococheague Formation, just west of its conformable contact with the underlying Elbrook Formation. This well is mapped as located within a small watershed on the west side of Charles Town with a very high measured base flow (1,510 gpd/acre). Unfortunately, this well is over 2 miles from the water treatment plant.

340 West – The center of this area is 1.32 miles west of the water treatment plant, on the western side of Route 340 (Berryville Pike) near the intersection of Route 340 and Candlewood Drive. A major strike-parallel fracture is intersected by two major cross-strike fractures, one on the north, and a second intersection mapped to the south near the Route 340/Vinton Lane intersection. The watershed of this area has been measured with a base flow of 815 gpd/acre.

SE 340 – This area is 1.46 miles west-southwest of the water plant, just southeast of the intersection of Route 340 and Old Cave Road. It is of note that two major strike-parallel fractures are intersected by two major cross-strike fractures within this area. This area is within the same watershed as the 340 West and Charles Town proposed well areas, with the measured base flow of 815 gpd/acre.

6.0 RECOMMENDATIONS

In conformance with the project scope, and to address various concerns of the client, Terracon would like to make the following recommendations.

- If the CTUB is interested in developing wells in any of the proposed areas, then we recommend that geophysical studies, specifically electrical resistivity tomography (ERT), be completed at each area. ERT is a method involving the measurement of the apparent electrical resistivity of subsurface materials. During an ERT survey, the electrical current is injected into the earth through a pair of current electrodes, and the potential difference is measured between a pair of potential electrodes. The current and potential electrodes are generally arranged in straight line arrays. Since the electrical resistivity of subsurface materials varies with their compositions (e.g. soil types, hard and soft bedrock, etc.) and water contents, the resistivity contour maps can be used to get a general background of the subsurface condition. ERT is also used to identify fracture and fault zones and significant water-bearing fractures have been identified in well studies using this method.

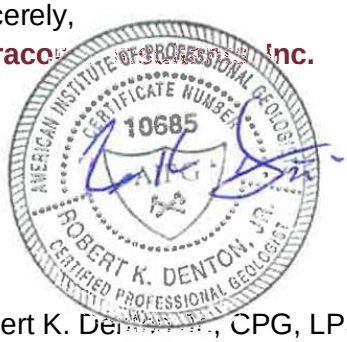
- If the ERT survey identified significant water-bearing fractures or zones, then test wells should be advanced in the identified locations. These test wells should be drilled using air rotary drill rigs. The boreholes should be equipped with a temporary casing to prevent caving, and a 6 inch borehole is recommended to allow satisfactory aquifer measurements. These aquifer measurement should include step drawdown and constant rate pumping tests, to determine the well's specific capacity and transmissivity. If the well is deemed to be high yield, then it can be bored out to a 10 inch production well.

7.0 CLOSURE

The information presented herein has been based on the review of both proprietary and publicly available geologic information. Accordingly, Terracon should be engaged during the site characterization and potential test well drilling phases of this project in order to confirm subsurface conditions are as indicated herein, and to verify the intent of the recommendations in this report are implemented.

Terracon has conducted these services in accordance with generally accepted geologic practices. No warranties, either expressed or implied, are made as to the professional services and recommendations presented herein.

Sincerely,
Terracon Consultants, Inc.



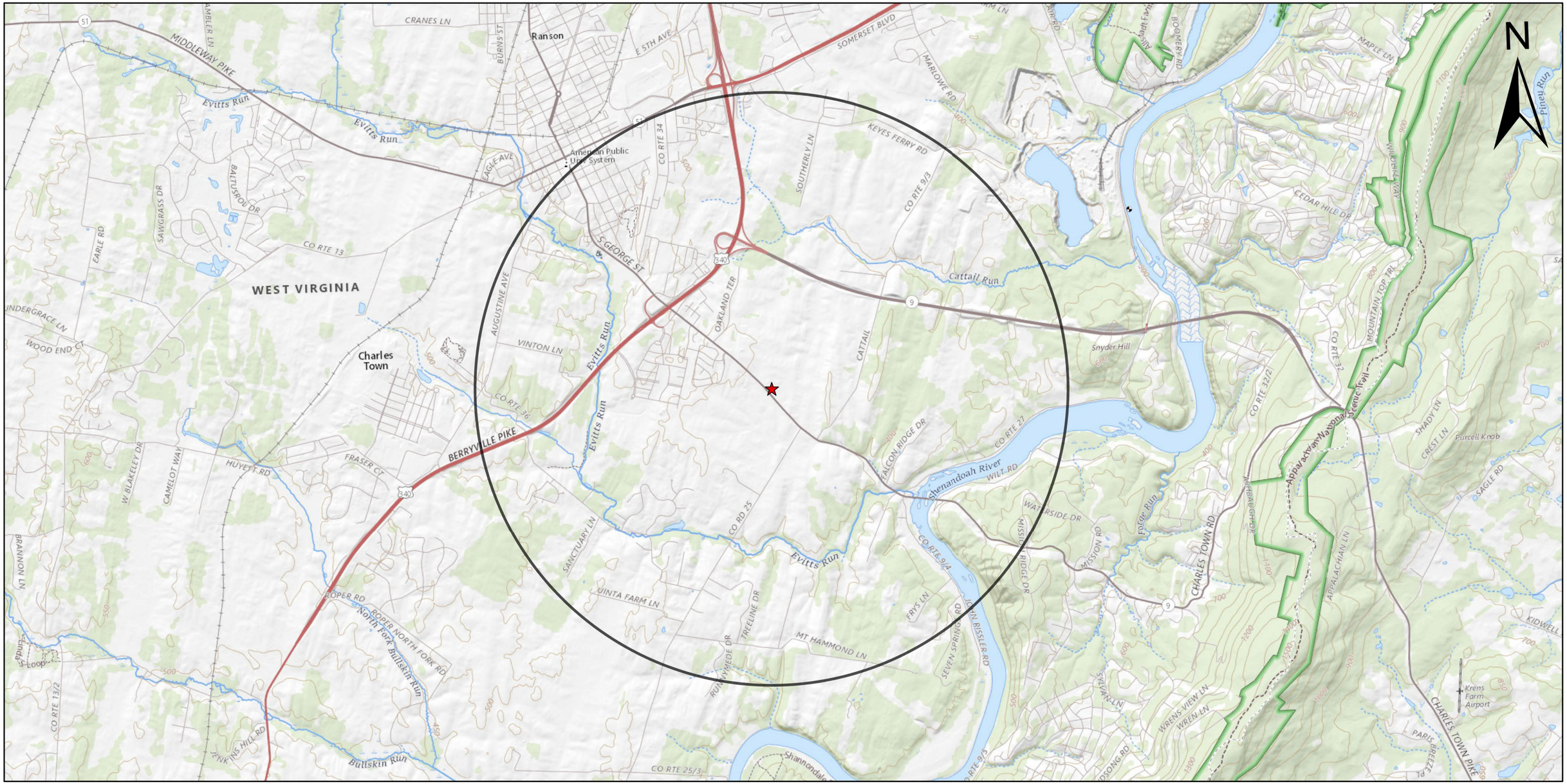
Robert K. Denton, Jr., CPG, LPSS
Senior Geologist

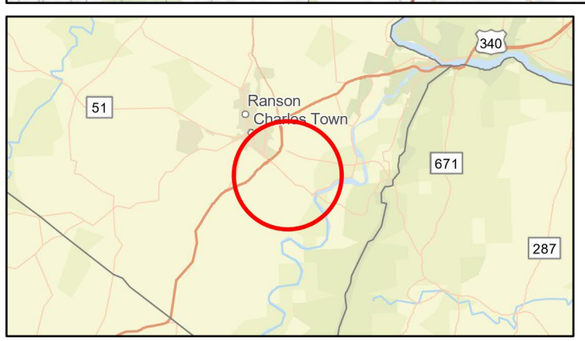
Tadeusz W. Lewis, PE
Senior Principal

Appendices: Appendix A – Maps
Appendix B – References Cited

RKD/TWL/clm
\\dcmetrowest1\Data\Projects\2021\JD217021\Working Files\DRAFTS (Proposal-Reports-Communications)\JD207021 Charles Town Utility Board Stage 1 Hydrological Study.docx

APPENDIX A
MAPS





Legend

- Water Treatment Plant
- Study Area (2 Mile Buffer)

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

0 0.25 0.5 1 1.5 Miles

Project No.:	JD217021
Date:	Mar 2021
Drawn By:	JDV
Reviewed By:	RKD

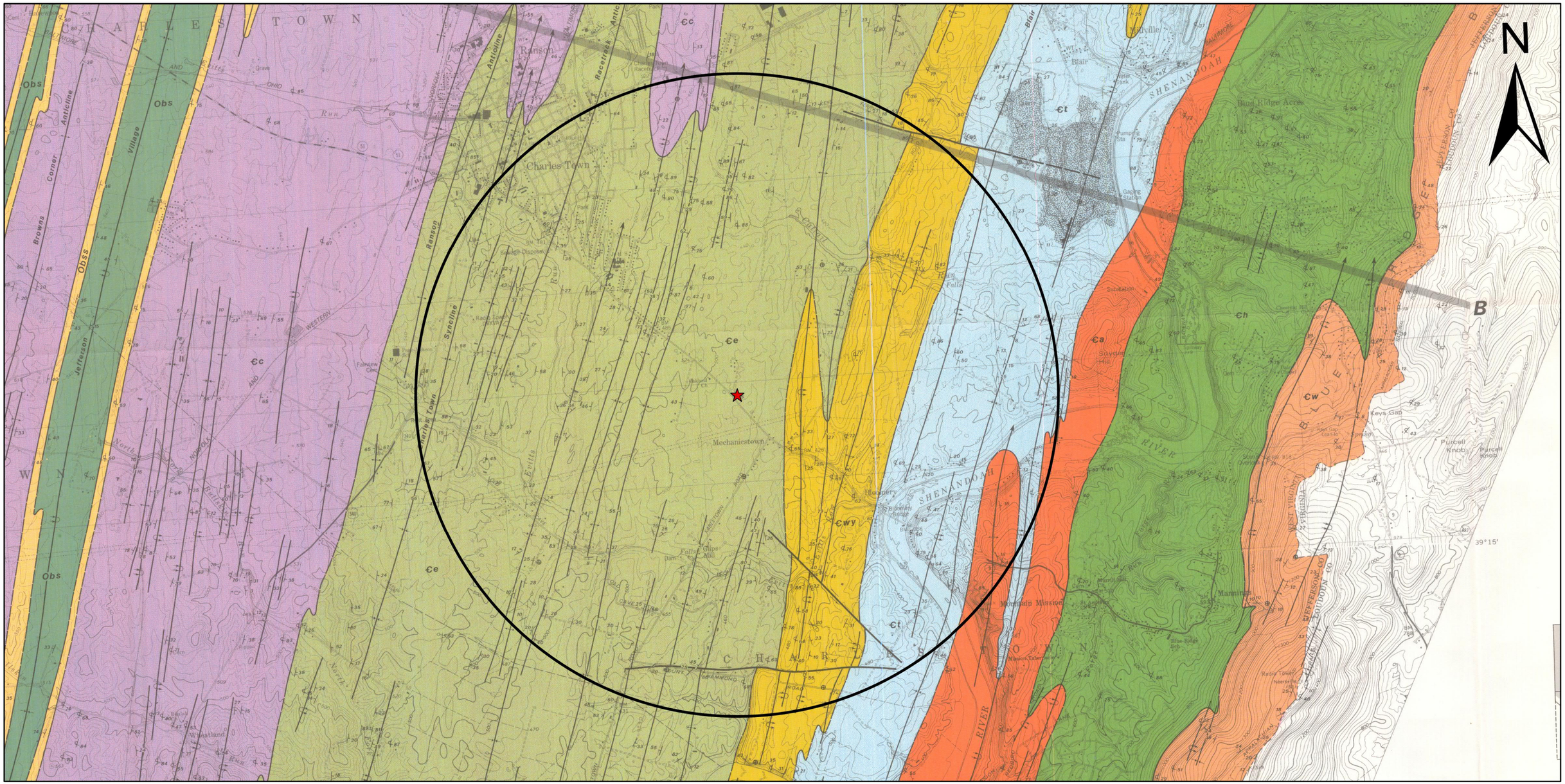
Terracon
19955 Highland Vista Drive, Suite 170 Ashburn, VA 20147
PH. (703) 726-8030 terracon.com

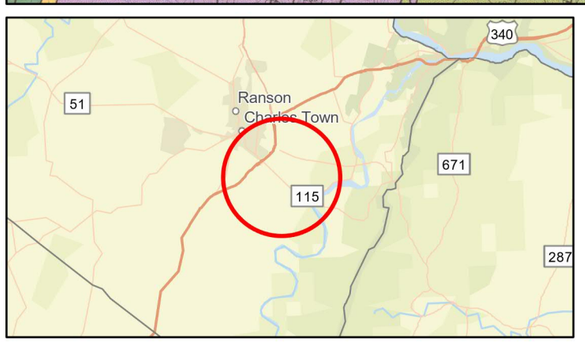
Site Location and Topography Map

Well Site Selection (Stage 1) Hydrogeologic Study
City of Charles Town Potable Water Treatment Plant
Charles Town, West Virginia

Map

1





Legend

- Water Treatment Plant
- Study Area (2 Mile Buffer)
- Conococheague Formation (Cc)
- Tomstown Dolomite (Ct)
- Waynesboro Formation (Cwy)
- Elbrook Formation (Ce)
- Chilhowee Group (Cch)

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

0 0.25 0.5 1 1.5 Miles

Project No.:	JD217021
Date:	Mar 2021
Drawn By:	JDV
Reviewed By:	RKD

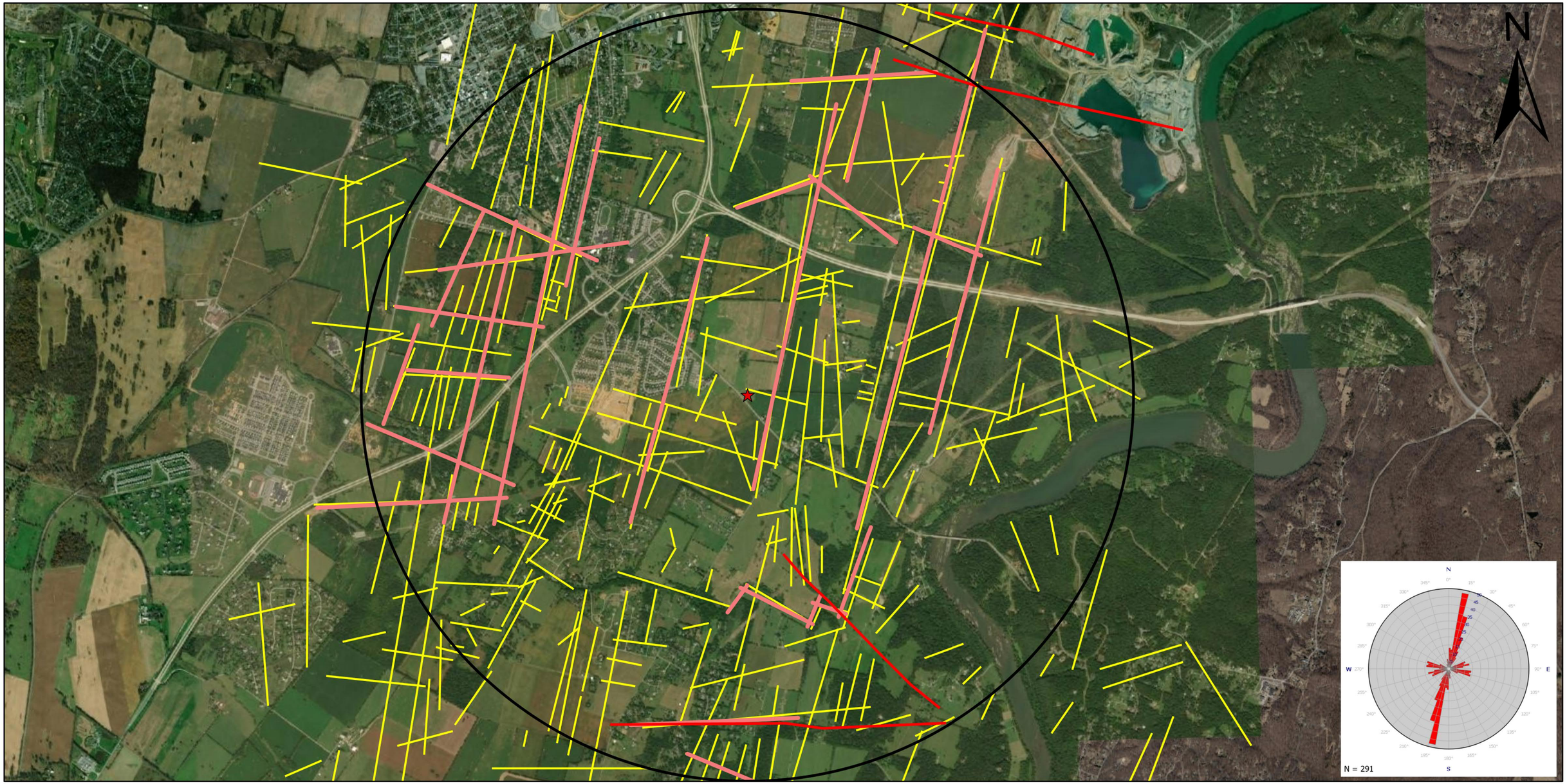
Terracon
19955 Highland Vista Drive, Suite 170 Ashburn, VA 20147
PH. (703) 726-8030 terracon.com

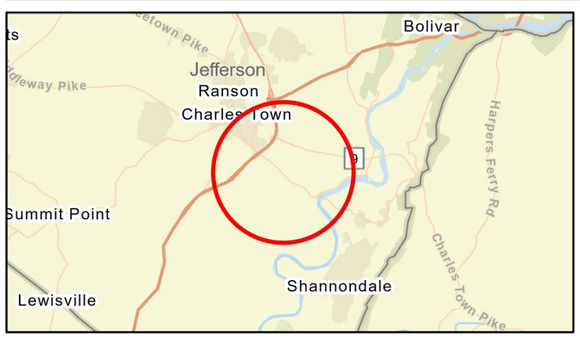
Geology Map

Well Site Selection (Stage 1) Hydrogeologic Study
City of Charles Town Potable Water Treatment Plant
Charles Town, West Virginia

Map

2





Legend

- Water Treatment Plant
- Study Area (2 Mile Buffer)
- Major Fracture Lineaments
- Minor Fracture Lineaments
- Faults

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

0 0.25 0.5 1 1.5 Miles

Project No.:	JD217021
Date:	Mar 2021
Drawn By:	JDV
Reviewed By:	RKD

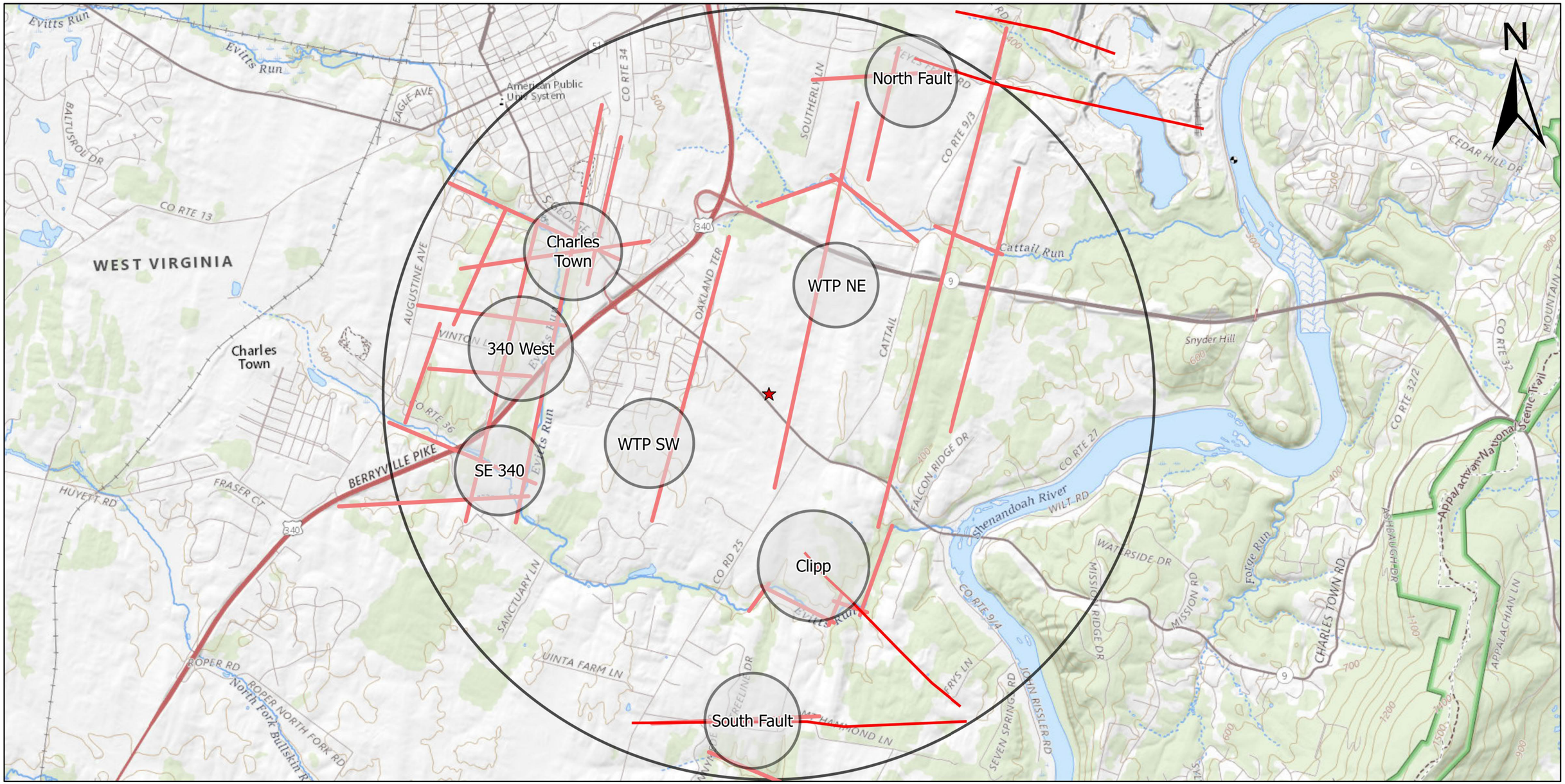
Terracon
19955 Highland Vista Drive, Suite 170 Ashburn, VA 20147
PH. (703) 726-8030 terracon.com

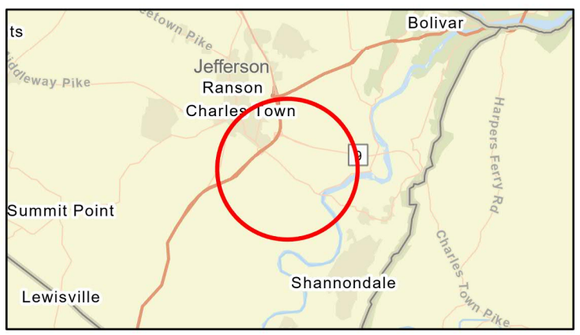
Fracture Trace Map

Well Site Selection (Stage 1) Hydrogeologic Study
City of Charles Town Potable Water Treatment Plant
Charles Town, West Virginia

Map

3





Legend

- Water Treatment Plant
- Study Area (2 Mile Buffer)
- Major Fracture Lineaments
- Faults
- Proposed Well Locations

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

0 0.2 0.4 0.8 1.2 Miles

Project No.:	JD217021
Date:	Mar 2021
Drawn By:	JDV
Reviewed By:	RKD

Terracon
19955 Highland Vista Drive, Suite 170
Ashburn, VA 20147
PH. (703) 726-8030
terracon.com

Proposed Well Locations

Well Site Selection (Stage 1) Hydrogeologic Study
City of Charles Town Potable Water Treatment Plant
Charles Town, West Virginia

Map

4

APPENDIX B
REFERENCES CITED

REFERENCES CITED

Dean, S.L., B.R. Kulander, and P. Lessing. Geology of the Berryville, Charles Town, Harpers Ferry, Middleway, and Round Hill Quadrangles, Jefferson County, WV. WV Geological and Economic Survey: MAP-WV35. 1990.

Evaldi, R. D., Paybins, K. S., and M. D. Kozar, 2009, Hydrogeologic Factors Affecting Base-Flow Yields in the Jefferson County Area, West Virginia, October – November 2007, USGS Scientific Investigations Report 2009-5145.

Hobba, Jr., W. A. Ground-Water Hydrology of Jefferson County, West Virginia. WV Geological and Economic Survey EGB-16. 1981.

Kozar, M.D., D.J. Weary, K.S. Paybins, and H.A. Pierce. Hydrogeologic Setting and Ground-Water Flow in the Leetown Area, West Virginia. USGS Scientific Investigations Report 2007-5066. 1990.

Kozar, Mark D. and David J. Weary. Hydrogeology and Ground-Water Flow in the Opequon Creek Watershed area, Virginia and West Virginia USGS Scientific Investigations Report 2009-5153. 2009.

Kozar, Mark D., W. A. Hobba, Jr., and J. A. Macy. Geohydrology, Water Availability, and Water Quality of Jefferson County, West Virginia, with Emphasis on the Carbonate Area. USGS Water Resources Investigation Report 90-4118. 1991.

Yager, Richard M., Scott Southworth, and Clifford I. Voss. Simulation of Ground-Water Flow in the Shenandoah Valley, Virginia and West Virginia, Using Variable-Direction Anisotropy in Hydraulic Conductivity to Represent Bedrock Structure. USGS Scientific Investigations Report 2008–5002. 2008.

CHARLES TOWN UTILITY BOARD
ROUTE 9 SEWER PROJECT

RESOLUTION NO. 14

RESOLUTION OF THE CITY OF CHARLES TOWN UTILITY BOARD APPROVING INVOICES RELATING TO THE CONSTRUCTION AND OTHER SERVICES FOR THE ROUTE 9 SEWER PROJECT AND AUTHORIZING PAYMENT THEREOF,

WHEREAS, the City of Charles Town Utility Board has reviewed the invoices attached hereto and incorporated herein by reference relation to the project funded by ROXUL USA, Inc., dba ROCKWOOL under an Alternate Mainline Extension Agreement (WV PSC Case No. 191025-S-PC, approved November 22, 2019) and the Escrow Agreement dated October 11, 2019.

a) That none of the items for which payment is proposed to be made has formed the basis for any disbursement theretofore made.

b) That each item for which the payment is proposed to be paid is or was necessary in connection with the Project and constitutes a cost of the project.

c) That each of such costs has been otherwise properly incurred.

d) That the payment for each of the items proposed is due and owing.

NOW, THEREFORE, BE IT RESOLVED the City of Charles Town Utility Board that the payment of the attached Contractor's Application for Payment No. 13, HATCH Invoice No. 90775007 and the CTUB Reimbursement per the attached Schedule B (See Column - Resolution No. 14) as summarized below, is hereby authorized and directed.

Vendor	Route 9 Sewer Project
Snyder Environmental Services, Inc.	$21,375.00
HATCH	$1,853.25
CTUB Reimbursement	$16,366.25
Total	**$39,594.50**

ADOPTED BY the City of Charles Town Utility Board, at the meeting held on the 24th day of March 2021.

By: _____
Daryl Hennessy, Chairman

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Contractor's Application for Payment No. 13

Application Period: 2/1/2021 to 3/11/2021		3/17/2021
To (Owner): **Charles Town Utility Board**	From (Contractor): **Snyder Environmental Services**	Via (Engineer): **Hatch Associates Consultants, Inc.**
Project: **Route 9 Sewer Project Ranson, WV**	Contract:	
Owner's Contract No.:	Contractor's Project No.: 20018	Engineer's Project No.: **H-359787**

Application For Payment

Change Order Summary

Approved Change Orders

Number	Additions	Deductions
01		$1,162,000.00
02		$1,177,551.00
03	$902,406.49	
04		$75,000.00
05		$26,160.87
6	$62,514.40	
9	$2,474.70	
TOTALS	$967,395.59	$2,440,711.87
NET CHANGE BY CHANGE ORDERS	**-$1,473,316.28**	

1. ORIGINAL CONTRACT PRICE			$	**$8,453,848.00**
2. Net change by Change Orders			$	**-$1,473,316.28**
3. Current Contract Price (Line 1 ± 2)			$	**$6,980,531.72**
4. TOTAL COMPLETED AND STORED TO DATE			$	**$6,980,531.72**
5. RETAINAGE:				
a.	**X**	$3,490,265.86 **Work Completed**	$	**$32,625.00**
b. 5%	**X**	**Stored Material**	$	
c. Total Retainage (Line 5.a + Line 5.b)			$	**$32,625.00**
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c)			$	**$6,947,906.72**
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)			$	**$6,926,531.72**
8. AMOUNT DUE THIS APPLICATION			$	**$21,375.00**
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above)			$	**$32,625.00**

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;
(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and
(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor Signature

By: Brandon L	Date: 3/17/2021

Payment of: $ 21,375
(Line 8 or other - attach explanation of the other amount)

is recommended by: _____ March 17, 2021
(Engineer) (Date)

Payment of: $ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ _____
(Owner) (Date)

Approved by: _____ _____
Funding or Financing Entity (if applicable) (Date)

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Progress Estimate - Unit Price Work **Contractor's Application**

For (Contract):	Route 9 Sewer Project Ranson, WV	Application Number:	13
Application Period:	2/1/2021 to 3/11/2021	Application Date:	3/17/2021
Engineer's Project Number:	H-359787		

A					B	C		D		E	F		G
Bid Item Code	Description	Item Quantity	Units	Unit Price	Scheduled Value ($)	Work Completed: Quantity Installed this Period	Work Completed: Value of Work Installed This Period	Work Completed: Quantity Installed to Date	Work Completed: Value of Work Installed to Date	Materials PresentlyStored (not in C or D)	Total Completed and Stored to Date (D + E)	% (F / B)	Balance to Finish (B - F)
100	**MOBILIZATION**												
101	MOBILIZE EQUIPMENT	1.00	LS	$ 300,000.00	$ 300,000.00	0	$ -	1.00	$300,000.00		$300,000.00	100.0%	$ -
102	BLASTING STAKEOUT	1.00	LS	$ 75,000.00	$ 75,000.00	0	$ -	1.00	$75,000.00		$75,000.00	100.0%	$ -
103	CONSTRUCTION STAKEOUT	1.00	LS	$ 75,000.00	$ 75,000.00	0	$ -	1.00	$75,000.00		$75,000.00	100.0%	$ -
104	VIDEO DOCUMENTATION	1.00	LS	$ 25,000.00	$ 25,000.00	0	$ -	1.00	$25,000.00		$25,000.00	100.0%	$ -
105	SUBMITTALS	1.00	LS	$ 25,000.00	$ 25,000.00	0	$ -	1.00	$25,000.00		$25,000.00	100.0%	$ -
106	BONDS & INSURANCE	1.00	LS	$ 100,000.00	$ 100,000.00	0	$ -	1.00	$100,000.00		$100,000.00	100.0%	$ -
200	TRAFFIC CONTROL	1.00	LS	$ 27,700.00	$ 27,700.00	0	$ -	1.00	$27,700.00		$27,700.00	100.0%	$ -
300	EROSION AND SEDIMENT CONTROL	1.00	LS	$ 60,000.00	$ 60,000.00	0	$ -	1.00	$60,000.00		$60,000.00	100.0%	$ -
400	GRAVITY SEWER 6" & 8", OPEN CUT	1,085.00	LF	$ 107.00	$ 116,095.00	0	$ -	1101.00	$117,807.00		$117,807.00	101.5%	$ (1,712.00)
500	GRAVITY SEWER 10", OPEN CUT	1,014.00	LF	$ 101.00	$ 102,414.00	0	$ -	1025.00	$103,525.00		$103,525.00	101.1%	$ (1,111.00)
600	GRAVITY SEWER 12", OPEN CUT	3,567.00	LF	$ 119.00	$ 424,473.00	0	$ -	3588.00	$426,972.00		$426,972.00	100.6%	$ (2,499.00)
700	GRAVITY SEWER 15", OPEN CUT	3,776.00	LF	$ 130.00	$ 490,880.00	0	$ -	3776.00	$490,880.00		$490,880.00	100.0%	$ -
800	FORCE-MAIN (6"-4") OPEN CUT	4,149.00	LF	$ 121.00	$ 502,029.00	0	$ -	4122.00	$498,762.00		$498,762.00	99.3%	$ 3,267.00
900	FORCE-MAIN (6"-4") IN EX. RT. 9 CASING	265.00	LF	$ 252.00	$ 66,780.00	0	$ -	265.00	$66,780.00		$66,780.00	100.0%	$ -
1000	FORCE-MAIN (6"-4") AIR VAULT & INTERNALS	6.00	EA	$ 8,370.00	$ 50,220.00	0	$ -	8.00	$66,960.00		$66,960.00	133.3%	$ (16,740.00)
1300	FORCE-MAIN (8"-6"-8") OPEN CUT	11,646.00	LF	$ 93.00	$ 1,083,078.00	0	$ -	11675.00	$1,085,775.00		$1,085,775.00	100.2%	$ (2,697.00)
1400	FORCE-MAIN (8"-6"-8") AIR VAULT & INTERNALS	21.00	EA	$ 8,370.00	$ 175,770.00	0	$ -	21.00	$175,770.00		$175,770.00	100.0%	$ -
1700	FORCE-MAIN MISC. DIP FITTINGS, IF DIRECTED	2,000.00	LBS	$ 7.00	$ 14,000.00	0	$ -						$ 14,000.00
1800	CONCRETE CLASS B, IF DIRECTED	100.00	CY	$ 435.00	$ 43,500.00	0	$ -						$ 43,500.00
1900	CASING 24" BORED, W/ 10" GRAVITY SEWER	62.00	LF	$ 540.00	$ 33,480.00	0	$ -	65.00	$35,100.00		$35,100.00	104.8%	$ (1,620.00)
2000	CASING 24" BORED, W/ 12" GRAVITY SEWER	94.00	LF	$ 532.00	$ 50,008.00	0	$ -	94.00	$50,008.00		$50,008.00	100.0%	$ -
2100	CASING 24" BORED, W/ 6"-4"-6" FORCE-MAINS	130.00	LF	$ 596.00	$ 77,480.00	0	$ -	110.00	$65,560.00		$65,560.00	84.6%	$ 11,920.00
2200	CASING 30" BORED, W/ 15" GRAVITY SEWER	162.00	LF	$ 779.00	$ 126,198.00	0	$ -	166.00	$129,314.00		$129,314.00	102.5%	$ (3,116.00)
2300	CASING 36" BORED, W/ 8"-6"-8" FORCE-MAINS	141.00	LF	$ 692.00	$ 97,572.00	0	$ -	205.00	$141,860.00		$141,860.00	145.4%	$ (44,288.00)
2600	MANHOLE, 4'-DIA. (UP TO 6' DEEP)	44.00	EA	$ 7,630.00	$ 335,720.00	0	$ -	44.00	$335,720.00		$335,720.00	100.0%	$ -
2700	MANHOLE BV-03 (DOGHOUSE), 4'-DIA. (UP TO 6' DEEP)	1.00	EA	$ 7,500.00	$ 7,500.00	0	$ -	1.00	$7,500.00		$7,500.00	100.0%	$ -
2800	MANHOLE DC-02 (DOGHOUSE), 4'-DIA. (UP TO 6' DEEP)	1.00	EA	$ 7,500.00	$ 7,500.00	0	$ -	1.00	$7,500.00		$7,500.00	100.0%	$ -
2900	MANHOLE EXTENSION, 4'-DIA.	130.00	VF	$ 167.00	$ 21,710.00	0	$ -	127.10	$21,225.70		$21,225.70	97.8%	$ 484.30
3000	MANHOLE DROP CONNECTION, TYPE A	1.00	EA	$ 3,550.00	$ 3,550.00	0	$ -	1.00	$3,550.00		$3,550.00	100.0%	$ -
3100	MANHOLE DROP CONNECTION, TYPE B	5.00	EA	$ 5,000.00	$ 25,000.00	0	$ -	5.00	$25,000.00		$25,000.00	100.0%	$ -
3200	MANHOLE BV-22, FOR TRANSITION	1.00	EA	$ 13,500.00	$ 13,500.00	0	$ -	1.00	$13,500.00		$13,500.00	100.0%	$ -
3300	MANHOLE CH-20, FOR TRANSITION	1.00	EA	$ 13,500.00	$ 13,500.00	0	$ -	1.00	$13,500.00		$13,500.00	100.0%	$ -
3400	SEWER MARKER	98.00	EA	$ 105.00	$ 10,290.00	0	$ -	54.00	$5,670.00		$5,670.00	55.1%	$ 4,620.00
3500	CONNECTION TO EX. FACILITIES, AT MANHOLE 11V	1.00	LS	$ 7,500.00	$ 7,500.00	0	$ -	1.00	$7,500.00		$7,500.00	100.0%	$ -
3600	CONNECTION TO EX. FACILITIES, AT MANHOLE BV-03	1.00	LS	$ 7,500.00	$ 7,500.00	0	$ -	1.00	$7,500.00		$7,500.00	100.0%	$ -
3700	CONNECTION TO EX. FACILITIES, AT MANHOLE DC-02	1.00	LS	$ 7,500.00	$ 7,500.00	0	$ -	1.00	$7,500.00		$7,500.00	100.0%	$ -
3800	**PUMP STATION, WAR ADMIRAL**					0	$ -						$ -
3801	MOBILIZATION	1.00	LS	$ 21,700.00	$ 21,700.00	0	$ -	1.00	$21,700.00		$21,700.00	100.0%	$ -
3802	EXCAVATION	1.00	LS	$ 120,000.00	$ 120,000.00	0	$ -	1.00	$120,000.00		$120,000.00	100.0%	$ -
3803	SET WET WELL	1.00	LS	$ 50,000.00	$ 50,000.00	0	$ -	1.00	$50,000.00		$50,000.00	100.0%	$ -
3804	VALVE VAULT	1.00	LS	$ 75,000.00	$ 75,000.00	0	$ -	1.00	$75,000.00		$75,000.00	100.0%	$ -
3805	BACKFILL	1.00	LS	$ 25,000.00	$ 25,000.00	0	$ -	1.00	$25,000.00		$25,000.00	100.0%	$ -
3806	WET WELL AND VALVE VAULT PIPING	1.00	LS	$ 66,000.00	$ 66,000.00	0	$ -	1.00	$66,000.00		$66,000.00	100.0%	$ -
3807	AIR INJECTION VAULT & EQUIPMENT	1.00	LS	$ 54,675.00	$ 54,675.00	0	$ -	1.00	$54,675.00		$54,675.00	100.0%	$ -
3808	PUMPS	1.00	LS	$ 195,000.00	$ 195,000.00	0	$ -	1.00	$195,000.00		$195,000.00	100.0%	$ -
3809	CONTROLS	1.00	LS	$ 110,000.00	$ 110,000.00	0	$ -	1.00	$110,000.00		$110,000.00		$ -
3810	FETTERVILLE BUILDING	1.00	LS	$ 53,100.00	$ 53,100.00	0	$ -	1.00	$53,100.00		$53,100.00	100.0%	$ 0.00
3811	GENERATOR PAD	1.00	LS	$ 10,000.00	$ 10,000.00	0	$ -	1.00	$10,000.00		$10,000.00	100.0%	$ -
3812	GENERATOR	1.00	LS	$ 67,500.00	$ 67,500.00	0	$ -	1.00	$67,500.00		$67,500.00	100.0%	$ -
3813	ELECTRIC	1.00	LS	$ 167,500.00	$ 167,500.00	0	$ -	1.00	$167,500.00		$167,500.00	100.0%	$ -
3814	START UP	1.00	LS	$ 20,000.00	$ 20,000.00	0	$ -	1.00	$20,000.00		$20,000.00	100.0%	$ -

EJCDC® C-620 Contractor's Application for Payment
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Progress Estimate - Unit Price Work

Contractor's Application

For (Contract):	Route 9 Sewer Project Ranson, WV	Application Number:	13
Application Period:	2/1/2021 to 3/11/2021	Application Date:	3/17/2021
Engineer's Project Number:	H-359787		

A					B	C		D		E	F		G
Bid Item Code	Description	Item Quantity	Units	Unit Price	Scheduled Value ($)	Quantity Installed this Period	Value of Work Installed This Period	Quantity Installed to Date	Value of Work Installed to Date	Materials PresentlyStored (not in C or D)	Total Completed and Stored to Date (D + E)	% (F / B)	Balance to Finish (B - F)
3815	PAVING	1.00	LS	$ 33,000.00	$ 33,000.00	0	$ -	1.00	$33,000.00		$33,000.00	100.0%	$ -
3816	RESTORATION	1.00	LS	$ 22,590.00	$ 22,590.00	0	$ -	1.00	$22,590.00		$22,590.00	100.0%	$ -
3817	FENCE	1.00	LS	$ 15,000.00	$ 15,000.00	0	$ -	1.00	$15,000.00		$15,000.00	100.0%	$ -
4000	RESTORATION, STATE (WVDOH) ROAD	290.00	SY	$ 76.00	$ 22,040.00	0	$ -	70.50	$5,358.00		$5,358.00	24.3%	$ 16,682.00
4100	RESTORATION, ASPHALT DRIVEWAY	320.00	SY	$ 62.00	$ 19,840.00	0	$ -	328.00	$20,336.00		$20,336.00	102.5%	$ (496.00)
4200	RESTORATION, ASPHALT BIKE PATH	140.00	SY	$ 315.00	$ 44,100.00	0	$ -	140.00	$44,100.00		$44,100.00	100.0%	$ -
4300	RESTORATION, GRAVEL ROAD OR DRIVE	2,170.00	SY	$ 15.00	$ 32,550.00	0	$ -	2170.00	$32,550.00		$32,550.00	100.0%	$ -
4400	RESTORATION, UNIMPROVED (GRASS) SURFACE	80,460.00	SY	$ 3.00	$ 241,380.00	0	$ -	74946.00	$224,838.00		$224,838.00	93.1%	$ 16,542.00
4500	CULVERT 12" TO 30", OPEN CUT	60.00	LF	$ 150.00	$ 9,000.00	0	$ -	60.00	$9,000.00		$9,000.00	100.0%	$ -
4600	ABANDONMENT OF WATER WELL	1.00	LS	$ 3,000.00	$ 3,000.00	0	$ -	2.00	$6,000.00		$6,000.00	200.0%	$ (3,000.00)
4700	EXCAVATION AND BACKFILLING BELOW SUBGRADE	500.00	CY	$ 45.00	$ 22,500.00	0	$ -						$ 22,500.00
4800	ALLOWANCE - SINKHOLE REPAIR, SOIL FOR CAP	25.00	CY	$ 30.00	$ 750.00	0	$ -						$ 750.00
4900	ALLOWANCE - SINKHOLE REPAIR, CLASS 10 AGGREGATE	25.00	CY	$ 50.00	$ 1,250.00	0	$ -						$ 1,250.00
5000	ALLOWANCE - SINKHOLE REPAIR, CLASS 1 AGGREGATE BAS	25.00	CY	$ 50.00	$ 1,250.00	0	$ -						$ 1,250.00
5100	ALLOWANCE - SINKHOLE REPAIR, SPECIAL ROCK FILL	25.00	CY	$ 50.00	$ 1,250.00	0	$ -						$ 1,250.00
5200	ALLOWANCE - SINKHOLE REPAIR, RIP-RAP	25.00	CY	$ 75.00	$ 1,875.00	0	$ -						$ 1,875.00
5300	ALLOWANCE - SINKHOLE REPAIR, IMPERVIOUS CORE	500.00	SF	$ 10.00	$ 5,000.00	0	$ -						$ 5,000.00
5400	**PUMP STATION, NORTHPORT**					0	$ -						$ -
5401	MOBILIZATION	1.00	LS	$ 20,022.00	$ 20,022.00	0	$ -	1.00	$20,022.00		$20,022.00	100.0%	$ -
5402	EXCAVATION	1.00	LS	$ 100,000.00	$ 100,000.00	0	$ -	1.00	$100,000.00		$100,000.00	100.0%	$ -
5403	SET WET WELL	1.00	LS	$ 30,223.49	$ 30,223.49	0	$ -	1.00	$30,223.49		$30,223.49	100.0%	$ -
5404	VALVE VAULT	1.00	LS	$ 59,400.00	$ 59,400.00	0	$ -	1.00	$59,400.00		$59,400.00	100.0%	$ -
5405	BACKFILL	1.00	LS	$ 50,000.00	$ 50,000.00	0	$ -	1.00	$50,000.00		$50,000.00	100.0%	$ -
5406	WET WELL AND VALVE VAULT PIPING	1.00	LS	$ 50,000.00	$ 50,000.00	0	$ -	1.00	$50,000.00		$50,000.00	100.0%	$ -
5407	PUMPS	1.00	LS	$ 100,000.00	$ 100,000.00	0	$ -	1.00	$100,000.00		$100,000.00	100.0%	$ -
5408	CONTROLS	1.00	LS	$ 106,012.00	$ 106,012.00	0	$ -	1.00	$106,012.00		$106,012.00		$ -
5409	FETTERVILLE	1.00	LS	$ 30,000.00	$ 30,000.00	0	$ -	1.00	$30,000.00		$30,000.00	100.0%	$ -
5410	GENERATOR PAD	1.00	LS	$ 10,000.00	$ 10,000.00	0	$ -	1.00	$10,000.00		$10,000.00	100.0%	$ -
5411	GENERATOR	1.00	LS	$ 47,039.00	$ 47,039.00	0	$ -	1.00	$47,039.00		$47,039.00		$ -
5412	ELECTRIC	1.00	LS	$ 146,919.00	$ 146,919.00	0	$ -	1.00	$146,919.00		$146,919.00	100.0%	$ -
5413	ELECTRIC CONDUIT	1,335.00	LF	$ 41.00	$ 54,735.00	0	$ -	1335.00	$54,735.00		$54,735.00		$ -
5414	ELECTRIC VAULT	2.00	EA	$ 2,457.00	$ 4,914.00	0	$ -						$ 4,914.00
5415	START UP	1.00	LS	$ 4,950.00	$ 4,950.00	0	$ -	1.00	$4,950.00		$4,950.00	100.0%	$ -
5416	PAVING	1.00	LS	$ 16,822.00	$ 16,822.00	0	$ -	1.00	$16,822.00		$16,822.00	100.0%	$ -
5417	RESTORATION	1.00	LS	$ 54,970.00	$ 54,970.00	0	$ -	1.00	$54,970.00		$54,970.00	100.0%	$ -
5418	FENCE	1.00	LS	$ 16,400.00	$ 16,400.00	0	$ -	1.00	$16,400.00		$16,400.00	100.0%	$ -
CO 004	CHANGE ORDER 004 REMOVE B&O TAXES	1.00	LS	$ (75,000.00)	$ (75,000.00)	0	$ -						$ (75,000.00)
CO 005	CHANGE ORDER 005 OPEN CUT CASING	1.00	LS	$ (26,160.87)	$ (26,160.87)	0	$ -	1.00	($26,160.87)		($26,160.87)		$ -
CO 006	CHANGE ORDER 006	1.00	LS	$ 62,514.40	$ 62,514.40	0	$ -	1.00	$62,514.40		$62,514.40		$ -
CO 009	CHANGE ORDER 009 QUANTITIES ADJUSTMENT	1.00	LS	$ 2,474.70	$ 2,474.70	0	$ -						$ 2,474.70
					$ 6,980,531.72		**$ -**		**$ 6,980,531.72**	**$ -**	**$ 6,980,531.72**		**$ 0.00**

EJCDC® C-620 Contractor's Application for Payment
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Stored Material Summary **Contractor's Application**

For (Contract):	Route 9 Sewer Project Ranson, WV	Application Number:	13
Application Period:	2/1/2021 to 3/11/2021		3/17/2021

A		B	C		D		E				F		G
					Stored Previously								
Bid Item No.	Supplier Invoice No.		Storage Location	Description of Materials or Equipment Stored	Date Placed into Storage (Month/Year)	Amount ($)	Amount Stored this Month ($)	Stored Units		Subtotal Amount Stored to Date (D + E)	Incorporated in Work	% Stored	Materials Remaining in Storage ($) (D + E - F)
100				**MOBILIZATION**						$ -			$ -
101				MOBILIZE EQUIPMENT						$ -			$ -
102				BLASTING STAKEOUT						$ -			$ -
103				CONSTRUCTION STAKEOUT						$ -			$ -
104				VIDEO DOCUMENTATION						$ -			$ -
105				SUBMITTALS						$ -			$ -
106				BONDS & INSURANCE						$ -			$ -
200				TRAFFIC CONTROL						$ -			$ -
300				EROSION AND SEDIMENT CONTROL									$ -
400				GRAVITY SEWER 6" & 8", OPEN CUT						$ -			$ -
500	3378054		on site	GRAVITY SEWER 10", OPEN CUT	3/2020	$16.00		1014.00	LF	$ 16.00	1025.00	-1%	$ -
600	3376257 3378050		on site	GRAVITY SEWER 12", OPEN CUT	3/2020	$181.00		3567.00	LF	$ 181.00	3588.00	-1%	$ -
700	3376255		on site	GRAVITY SEWER 15", OPEN CUT	3/2020	$21.00		3776.00	LF	$ 21.00	3776.00		$ -
800	3372577		on site	FORCE-MAIN (6"-4") OPEN CUT	3/2020	$24,089.00		4149.00	LF	$ 24,089.00	4122.00	1%	$ -
900				FORCE-MAIN (6"-4") IN EX. RT. 9 CASING						$ -	265.00		$ -
1000				FORCE-MAIN (6"-4") AIR VAULT & INTERNALS						$ -	8.00		$ -
1300	3375294 3375305 3375299 3373509 3373510		on site	FORCE-MAIN (8"-6"-8") OPEN CUT	3/2020	$105,363.00		11646.00	LF	$ 105,363.00	11675.00	0%	$ -
1400	3377020 3377031			FORCE-MAIN (8"-6"-8") AIR VAULT & INTERNALS	3/2020	$29.00		21.00	EA	$ 29.00	21.00		$ -
1700				FORCE-MAIN MISC. DIP FITTINGS, IF DIRECTED						$ -			$ -
1800				CONCRETE CLASS B, IF DIRECTED						$ -			$ -
1900				CASING 24" BORED, W/ 10" GRAVITY SEWER						$ -			$ -
2000				CASING 24" BORED, W/ 12" GRAVITY SEWER						$ -			$ -
2100				CASING 24" BORED, W/ 6"-4"-6" FORCE-MAINS						$ -			$ -
2200	LL223750 LL223616 13885501		on site	CASING 30" BORED, W/ 15" GRAVITY SEWER	3/2020	$21,237.82		162.00	LF	$ 21,237.82	166.00	-2%	$ -
2300	13885502		on site	CASING 36" BORED, W/ 8"-6"-8" FORCE-MAINS	3/2020	$20,250.00		141.00	LF	$ 20,250.00	205.00	-45%	$ -
2600				MANHOLE, 4'-DIA. (UP TO 6' DEEP)									$ -
2700				MANHOLE BV-03 (DOGHOUSE), 4'-DIA. (UP TO 6' DEEP)		$3.00							$ -
2800				MANHOLE DC-02 (DOGHOUSE), 4'-DIA. (UP TO 6' DEEP)									$ -
2900				MANHOLE EXTENSION, 4'-DIA.									$ -
3000				MANHOLE DROP CONNECTION, TYPE A									$ -
3100				MANHOLE DROP CONNECTION, TYPE B									$ -
3200				MANHOLE BV-22, FOR TRANSITION									$ -
3300				MANHOLE CH-20, FOR TRANSITION									$ -
3400				SEWER MARKER									$ -
3500				CONNECTION TO EX. FACILITIES, AT MANHOLE 11V									$ -
3600				CONNECTION TO EX. FACILITIES, AT MANHOLE BV-03									$ -
3700				CONNECTION TO EX. FACILITIES, AT MANHOLE DC-02									$ -
3800				**PUMP STATION, WAR ADMIRAL**									$ -
3801				MOBILIZATION									$ -

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Stored Material Summary **Contractor's Application**

For (Contract):	Route 9 Sewer Project Ranson, WV	Application Number:	13
Application Period:	2/1/2021 to 3/11/2021		3/17/2021

A		B	C		D		E				F		G
					Stored Previously								
Bid Item No.	Supplier Invoice No.		Storage Location	Description of Materials or Equipment Stored	Date Placed into Storage (Month/Year)	Amount ($)	Amount Stored this Month ($)	Stored Units		Subtotal Amount Stored to Date (D + E)	Incorporated in Work	% Stored	Materials Remaining in Storage ($) (D + E - F)
3802				EXCAVATION									$ -
3803				SET WET WELL									$ -
3804				VALVE VAULT									$ -
3805				BACKFILL									$ -
3806	111544		SES Shop	WET WELL AND VALVE VAULT PIPING	Sep-20	$2,120.40	$ -	1.00	LS	$ 2,120.40	1.00		$ -
3807				AIR INJECTION VAULT & EQUIPMENT									$ -
3808				PUMPS									
3809	200416-1 200416-3		on site	CONTROLS	Sep-20	$101,426.00	$ -	1.00	LS	$ 101,426.00	1.00		$ -
3810				FETTERVILLE BUILDING									
3811				GENERATOR PAD									
3812	S1-68114		SES Shop	GENERATOR	Sep-20	$67,500.00	$ -	1.00	LS	$ 67,500.00	1.00		$ -
3813	M761044		on site	ELECTRIC	Sep-20	$8,172.13	$ -	1.00	LS	$ 8,172.13	1.00		$ -
3814				START UP									
3815				PAVING									
3816				RESTORATION									
3817				FENCE									
4000				RESTORATION, STATE (WVDOH) ROAD									
4100				RESTORATION, ASPHALT DRIVEWAY		$70.50							
4200				RESTORATION, ASPHALT BIKE PATH		$258.00							
4300				RESTORATION, GRAVEL ROAD OR DRIVE									
4400				RESTORATION, UNIMPROVED (GRASS) SURFACE									
4500				CULVERT 12" TO 30", OPEN CUT		$5,014.00							
4600				ABANDONMENT OF WATER WELL									
4700				EXCAVATION AND BACKFILLING BELOW SUBGRADE									
4800				ALLOWANCE - SINKHOLE REPAIR, SOIL FOR CAP									
4900				ALLOWANCE - SINKHOLE REPAIR, CLASS 10 AGGREGATE									
5000				ALLOWANCE - SINKHOLE REPAIR, CLASS 1 AGGREGATE BAS									
5100				ALLOWANCE - SINKHOLE REPAIR, SPECIAL ROCK FILL									
5200				ALLOWANCE - SINKHOLE REPAIR, RIP-RAP									
5300				ALLOWANCE - SINKHOLE REPAIR, IMPERVIOUS CORE									
5400				**PUMP STATION, NORTHPORT**									
5401				MOBILIZATION									
5402				EXCAVATION		$0.65							
5403				SET WET WELL									
5404				VALVE VAULT									
5405				BACKFILL									
5406				WET WELL AND VALVE VAULT PIPING									
5407				PUMPS									
5408	200416-2		on site	CONTROLS	Sep-20	$81,277.00	$ -	1.00	LS	$ 81,277.00	1.00		$ -
5409				FETTERVILLE									
5410				GENERATOR PAD									
5411	S1-68068 S1-67061		SES Shop	GENERATOR	Sep-20	$39,350.00	$ -	1.00	LS	$ 39,350.00	1.00		$ -
5412				ELECTRIC									
5413				ELECTRIC CONDUIT									
5414				ELECTRIC VAULT									
5415				START UP									
5416				PAVING									

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Stored Material Summary **Contractor's Application**

For (Contract):	Route 9 Sewer Project Ranson, WV	Application Number:	13
Application Period:	2/1/2021 to 3/11/2021		3/17/2021

A		B	C		D		E			F		G
					Stored Previously							
Bid Item No.	Supplier Invoice No.		Storage Location	Description of Materials or Equipment Stored	Date Placed into Storage (Month/Year)	Amount ($)	Amount Stored this Month ($)	Stored Units	Subtotal Amount Stored to Date (D + E)	Incorporated in Work	% Stored	Materials Remaining in Storage ($) (D + E - F)
5417				RESTORATION								
5418				FENCE								
						$476,378.50	**$ -**		**$ 471,032.35**			**$ -**

EJCDC® C-620 Contractor's Application for Payment
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Route 9 Sewer Contract - Snyder Environmental Services and CTUB
Completion of Outstanding Route 9 Sewer Project Punch List items

Item #	Item Description	Estimated Cost	Prorata % of March effort to Total Cost	Proposed Pay App #13 for March effort
1	NPPS - grading, seed/straw at entrance of driveway and at Boulevard; ruts in ground on north side of silt fence; tire ruts along driveway; washout along super silt fence and cleanup driveway	$ 2,500.00		$ 1,250.00
2	NPPS - grade the swale around Northport Pump Station	$ 8,000.00		$ 4,000.00
3	NPPS - relocate landscaping as directed by CTUB	$ 1,500.00		$ 1,500.00
4	NPPS - reconstruct/install Rock Check Dam and Outlet Protection	$ 1,500.00		$ 750.00
5	NPPS - remove all sediment control measures	$ 500.00		
6	WAPS - restoration & mounds of dirt by BV-03 from when silt fence was removed; rip rap at entrance; dirt pile by trees; tire ruts along driveway	$ 2,500.00		$ 1,250.00
7	WAPS - relocate landscaping as directed by CTUB	$ 1,500.00		$ 1,500.00
8	WAPS - reconstruct/install Rock Check Dam and Outlet Protection	$ 2,500.00		$ 1,250.00
9	WAPS - remove all sediment control measures	$ 500.00		
10	Ground settled at BV-02	$ 1,000.00		$ 500.00
11	Ground settled at CH-03	$ 1,000.00		$ 500.00
12	Ground has settled around BV-12, BV-13, and BV-14	$ 1,500.00		$ 750.00
13	Tree that was removed needs to be planted by BV-17	$ 1,000.00		$ 1,000.00
14	Remove all sediment control measures when an acceptable stand of vegetation is established along the force mains and gravity sewers	$ 500.00		
15	NPPS Light Pole w/foundation and Ranson Permit	$ 10,000.00		
	Total Estimated Cost	$ 36,000.00		$ 14,250.00
	Contingency (50%)	$ 18,000.00	40%	$ 7,125.00
	Total Value of Escrow	**$ 54,000.00**		**$ 21,375.00**

NPPS Northport Pump Station
WAPS War Admiral Pump Station

1600 West Carson St, Suite 1
Pittsburgh, PA 15219
Phone: (412) 497-2000

INVOICE

Charles Town Utility Board
661 South George St., Ste. 101
Charles Town, WV 25414
Attn: Kristen Stolipher

Date:	3/8/2021
Invoice No:	90775007
Period Ending:	2/26/2021
Currency:	US Dollar (USD)
Reference:	TASK ORDER 4
Terms of Payment:	Net 30 Days
Customer Number:	113985

re: H-359787 On-Call Engineering Services
Project Manager: Richard Travers

TO#4 Route 9 Sewer Project, Bid and Construction Services Progress Report – reviewed ROLs from SES; coordinated with SES/CTUB on NPPS Water use invoice; discussed closeout with CTUB/H.Singleton; prepared/revised CO#9 and CO#10; processed pay app 12; coordinated with SES and SE on thumb drives and Ranson permitting for light pole at NPPS; SE performed oversight on completion punch list.

Travers, Richard	5.25	$ 215.00	$ 1,128.75
Total Labor			**$ 1,128.75**

Vendor	**INVOICE #**	**AMOUNT**
Specialized Engineering	49255	$ 690.00
Total Expenses		**$ 690.00**

Administration	**BASE**	**RATE**	**AMOUNT**
Total Administration	$ 690.00	5%	**$ 34.50**

Task Order Budget	**$ 726,283.00**
Task Order Previously Billed	**$ 710,669.65**
Total Invoice	**$ 1,853.25**
Task Order Remaining	**$ 13,760.10**

SPECIALIZED ENGINEERING

Engineers • Geologists • Inspectors

Employee Owned, Client Driven
4845 International Blvd
Suite 104
Frederick, Maryland 21703

Invoice

DATE	INVOICE NO.
03/03/2021	49255

BILL TO
Luke Fischer Hatch 704 Quince Orchard Road Suite 310 Gaithersburg, MD 20878

TERMS	PROJECT	Client's Number
NET 30	197873 - Route 9 Sewer Infrastructure	Route 9 Sewer Infrastructure

DATE	QTY	DESCRIPTION	RATE	AMOUNT
2/8/2021	1.00	Senior Inspector	115.00	115.00
2/9/2021	3.00	Senior Inspector	115.00	345.00
2/10/2021	1.00	Senior Inspector	115.00	115.00
2/12/2021	1.00	Senior Inspector	115.00	115.00
		Total this Invoice	$690.00	
		Outstanding Invoices		
		Number Date		
		49156 2/15/2021	11,645.00	
		Total Due to Specialized Engineering	$12,335.00	

All Claims and discrepancies must be reported within 30 days of the date of the invoice

Total this Invoice $690.00

Charles Town Utility Board
Route 9 Sewer Infrastructure Project
Alternate Mainline Extension Agreement (AMEA) / Escrow Agreement

				Resolution No. C	Resolution No. 1	Resolution No. 2	Resolution No. 3	Resolution No. 4	Resolution No. 5	Resolution No. 6	Resolution No. 7	Resolution No. 8	Resolution No. 9	Resolution No. 10	Resolution No. 11	Resolution No. 12	Resolution No. 13		Resolution No. 14	ESCROW DEPOSIT FOR CONSTRUCTION
$10,500,000 Rockwool Escrow Agreement/(AMEA) Reimbursement Schedule B, October, 2019	REVISED BUDGET	Draw (a.) Ranson Reimbursement	Draw (b.) CTUB Reimbursement	Draw (c.) CTUB Reimbursement 10/1/19-present	Contractor's Application for Payment No. 001	Contractor's Application for Payment No. 002, Hatch Inv. 90736637, CTUB Reimbursement	Contractor's Application for Payment No. 003, Hatch Inv. No. 90739805 & 90742814, CTUB Reimbursement	Contractor's Application for Payment No. 04, Hatch Inv. No. 90746225	Contractor's Application for Payment No. 05, CTUB Reimbursement	Contractor's Application for Payment No. 06, Hatch Inv. 90752351, CTUB Reimbursement	Contractor's Application for Payment No. 07, Hatch Inv. 90755283, CTUB Reimbursement	Contractor's Application for Payment No. 08, Hatch Inv. 90758960, CTUB Reimbursement	Contractor's Application for Payment No. 09, Hatch Inv. 90762081, CTUB Reimbursement	Contractor's Application for Payment No. 10, CTUB Reimbursement	Contractor's Application for Payment No. 11, Hatch Inv. 90768116, CTUB Reimbursement	Contractor's Application for Payment No. 12, Hatch Inv. 90772505, CTUB Reimbursement	Final Payment to Rockwool	Estimated Future Costs to Complete Project	Post Project Contractor's Application for Payment No. 13, Hatch Inv. 90775007, CTUB Reimbursement	BALANCE REMAINING
1 **CONSTRUCTION**																				
a. Contract 1	6,978,057.02	0.00	0.00	0.00	90,000.00	1,236,605.34	1,894,374.89	1,114,717.05	480,775.05	180,516.31	258,917.35	402,969.65	449,810.33	490,122.39	178,416.43	149,306.93	0.00	54,000.00	21,375.00	32,625.00
b. Contingency	603,350.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72,008.45	42,992.55	62,919.75	58,685.95	55,762.50	4,028.50	2,097.50	10,122.25	222,172.30	28,000.00	13,733.75	14,266.25
c. CSX Fees	15,300.00	0.00	16,050.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d. N-S Fees	41,600.00	0.00	21,300.00	0.00	0.00	0.00	0.00	0.00	9,789.21	1,640.50	2,957.50	2,769.75	1,640.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
e. DOH Bond and Inspection Fees	119,937.00	0.00	19,550.00	0.00	0.00	84,973.05	1,288.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 **ENGINEERING SERVICES**																				
Task Orders 1 - 8	1,851,567.87	1,084,987.66	102,994.82	10,289.25	0.00	38,068.37	210,109.15	93,693.87	61,197.50	42,247.25	56,752.25	41,275.75	58,388.63	0.00	71,215.63	20,311.75	0.00	15,600.00	1,853.25	13,746.75
Task Orders Charles Town	56,820.00	0.00	56,820.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 **LEGAL SERVICES**																				
a Local Project Attorney (PSC)	100,000.00	0.00	65,836.78	25,573.71	0.00	0.00	2,730.00	0.00	260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,000.00	2,632.50	-632.50
b Permitting / Ord Attorney	215,000.00	0.00	199,514.04	0.00	0.00	0.00	15,485.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
c RA Attorney Stranko / Luttrell	12,959.40	12,959.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 **ADMINISTRATIVE SERVICES**																				
b (CPA)	16,723.00	0.00	16,723.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
c Other Administrative Costs	2,750.00	0.00	2,750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 **LAND COSTS**																				
b Easements	324,611.85	0.00	324,611.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOFT COST CONTINGENCY	74,667.36	0.00	0.00	0.00	0.00	0.00	74,667.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Line of Credit	59,887.52	59,887.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amount Owed Line of Credit		1,157,834.58																		
Charles Town's Cost Incurred			826,150.49																	
9 Sub Total Lines 1-8	**10,473,232.00**	**1,157,834.58**	**826,150.49**	**40,862.96**	**90,000.00**	**1,359,646.76**	**2,198,655.63**	**1,208,410.92**	**624,030.21**	**267,396.61**	**381,546.85**	**505,701.10**	**565,602.21**	**494,150.89**	**251,729.56**	**179,740.93**	**222,172.30**	**99,600.00**	**39,594.50**	**60,005.50**
ESCROW DEPOSIT UPON AMLEA SUBMITTAL TO WV PSC (Ranson and Charles Town Costs Incurred)																				
ESCROW DEPOSIT FOR CONSTRUCTION																				

*The construction contingency line item has been reduced by $26,768 to reflect the installation of 120 linear feet of 16" steel casing for a sanitary sewer crossing that was funded by Rockwool during the water line project.

Quotation

Quote Number: 100640711v2
Use quote number at time of order to ensure that you receive prices quoted

Hach
PO Box 608
Loveland, CO 80539-608
Phone: (800) 227-4224
Email: quotes@hach.com
Website: www.hach.com

Quote Date: 24-Feb-2021

Quote Expiration: 25-Apr-2021

CHARLES TOWN UTILITIES
661 SOUTH GEORGE ST STE 101
CHARLES TOWN, WV 25414

Name: Chris Hutzler
Phone: 304-725-3761
Email: chutzler@ctubwv.com

Customer Account Number : 028115

Sales Contact: Teri Merrifield Email: temerrif@hach.com Phone: 304-374-1490

PRICING QUOTATION

Line	Part Number	Description	Qty	Net Unit Price	Extended Price
1	K-WTK-PL10H-01	Pack of ten 1-bottle Water Testing Kits with Lead and Copper Analysis included. Each individual kit includes one 1L collection bottle, instructions, page insert, chain of custody, shipping, and coordination.	14	808.00	11,312.00
2	SVC-OS-IMP	Setup, Configuration and Guided Web Training of the 120Water Platform	1	1,500.00	1,500.00
3	S-PWS-PMH	120Water Platform - PWS Product: Pro Package Includes the ability to manage LCR programs and LSL InventoryThe Pro PWS software package enables you to run both compliance-driven and public health-driven water management programs Package includes location management, contact management, audit logs, 150 automated letter sends, communications management, real-time and historical reporting, and custom fields that allow you to tailor data capture to your program's needs. When combined with sample management it also includes sample kits, logistics management and resident sample coordination and follow-up. The Pro Tier also includes access to Lead Service Line Probability Finder, a data science-backed feature, when paired with your county data and known partial inventory, can provide you a jump start on soon-to-be-required lead service line inventory. This package includes API to Hach WIMS (WIMS Interface sold separately). Software support and success management included.	1	8,800.00	8,800.00
				Grand Total	$ 21,612.00

TERMS OF SALE

Sales Contact:
Name: Teri Merrifield
Title: Regional Sales Manager
Phone: 304-374-1490
Email: temerrif@hach.com

120Water MSA Special Terms:

1. 120Water Platform Access: Service level uptime of 99%
2. Water Testing Kits Analysis Services: Sample result data within 30 days of receipt from laboratory partners or vendors responsible for administering analysis of sample.
3. Implementation services: Standard offerings will be performed on behalf of client in 45 days.
4. See at https://120water.com/partners/hach-master-services-agreement/ for additional terms and conditions that apply to any services provided by 120Water and www.hach.com/terms for additional terms and conditions that apply to any products or services provided by Hach. Hach has the same rights as 120Water as reflected in the 120Water terms and conditions and customer's obligations thereunder to 120Water extend in full to Hach. Notwithstanding anything to the contrary in the 120Water terms and conditions:
    a. Hach will invoice Customer and Customer will remit all payments directly to Hach for all services and products covered by this Order;

Customer:	
Signature	
Name:	
Title:	
Date:	

SCHLEIFMAN LAW, PLC

Attorney at Law

1001 19th Street North, Suite 1200
Arlington, Virginia 22209
Tel: 703.528.1021
pschleifman@schleifmanlaw.com
www.schleifmanlaw.com
Admitted in VA, MD and D.C.

March 19, 2021

Via Electronic Mail: (kstolipher@ctubwv.com)
Kristen Stolipher
Charles Town Utility Board
661 S. George Street
Suite 101
Charles Town, WV 25414

Re: Miller Station properties; Parcel ID Nos.: 02 8C000100000000; 02 8C000200000000; 02 8C000300000000; 02 8C000400000000; 02 8C000500000000; 02 8C000600000000; 02 8C000700000000; 02 8C000800000000

Dear Ms. Stolipher:

The Estate of Gerald A. Miller own the above-reference properties. As you may know, Dr. Miller owned a number of parcels in and around the City of Ranson, West Virginia. I am the Personal Representative of the Estate and was counsel to Dr. Miller for a number of years before his death.

As part of my duties as Personal Representative, I sought to manage and/or sell certain properties he owned including the Miller Station properties. In that regard, the Estate entered into a contract with an entity which intended to develop the property for use as apartments. During the due diligence period, it was discovered that the CTUB owned sewer system on the Miller Station property was not connected to the pump station located on the north west corner of the property and instead dead-ended into a manhole. Upon further investigation it was discovered that CTUB decommissioned and abandoned the pump station and constructed a gravity sewer to serve Miller Station and other nearby properties.

Our investigation has not uncovered why CTUB, when it decommissioned the pump station, capped and plugged the Miller Station sewer line, and built the gravity sewer, did not connect the sewer line to the gravity sewer. In part, due to the issues with respect to the sewer line not being connected, the purchaser exercised its right to cancel the contract at the end of the due diligence period. We believe CTUB has the obligation to connect the sewer line it owns on the Miller Station property to the gravity line.

Inasmuch as my obligation is to sell this property, I need to pursue this matter and would like you to bring this issue to the full Board at its next meeting. Please feel free to call me or our engineer, Jon Erickson if you have any questions. We look forward to working with the Board to resolve this matter.

Sincerely,

Paul S. Schleifman

cc: Jon Erickson











West Virginia
Open Governmental Proceedings Act

"Sunshine Law"

Charles Town Utility Board
March 24, 2021

Presented By:
John Stump
304.353.8196 Office
304.549.8196 Cell
john.stump@steptoe-johnson.com











Sunshine Law

- W.V. Code § 6-9A-1 *et seq.*
- Purpose
  - Provides to individuals the right to scrutinize government by providing access to public records and requiring governmental meetings to be open to the public *unless* specific exception exists
- General Rule
  - All meetings of the governing body of any political subdivision shall be open to the public unless a specific exception applies











OGPA Definitions

- Public Agency
  - Any administrative or legislative unit of a state, county or municipal government authorized by law to exercise some form of executive or legislative power
  - Courts are excluded from Sunshine Law











OGPA Definitions

- Governing Body
  - Agency members who have authority to make decisions for or recommendations to the agency on policy or administration, but only if there are two or more members











OGPA Definitions

- Decision
  - An action taken by the governing body for which a vote is required
- Quorum
  - A simple majority of the governing body's members











OGPA Definitions

- Meeting
  - The convening of a governing body of a public agency
  - For which a quorum is required in order to make, or deliberate toward, a decision
  - On a matter which results or will result in official action
  - Can include video and phone conference, email, texts, and other electronic means











OGPA Meeting - Exceptions

- Adjudicatory
- On-site Inspection
  - Example Construction Site
- Political Party Caucus











OGPA Meeting - Exceptions

- "General Discussion"
  - Planned or unplanned
  - Social, education, training, informal, ceremonial or similar setting
  - Without intent to conduct public business and
  - No intention for the discussion to lead to an official action

OGPA Meeting - Exceptions

- The "general discussion" exception is most difficult to follow. Some guidelines:
  - If discussion is about something that will lead to official action, either right then or at a later time, the meeting must be noticed
  - Does not prevent a quorum of members of the governing body from going to the mayor's house for barbecue
  - Does prevent a quorum of members of the governing body from going to the mayor's house for barbecue and a discussion about the new budget

OGPA - Notice and Agenda











- Must post advance notice of all meetings, including date, time and place
- Notice must include agenda of all matters to be considered and/or discussed
- No publication requirment











OGPA - Notice and Agenda

- "Regular meeting" notice must be posted and agenda made available THREE business days in advance (unless you meet every week, then two days)
- "Special meeting" notice must be posted and agenda made available TWO business days in advance
- The agenda must be made available at the organization's place of business by close of business on the first day
- Do not count the day of the meeting



OGPA Notice and Agenda

- agenda must give reasonable notice to the pubic of every issue to be discussed
- Items must be sufficiently specific to put the public on notice of intended action.
- Vague headings are insufficient, e.g.,
  - Old Business
  - New Business
  - Personnel
- Board must adopt rules by which notices of meetings are provided to the public
- Open Meetings Advisory Opinion 2008-17











OGPA – Notice and Agenda

- Amending Agenda
  - The agenda may be amended up to TWO business days before the meeting
  - The amended agenda must be made available to the public (and media) in the same manner as the original agenda
  - The only circumstance under which the agenda may be amended the day before or during a meeting is an "emergency" issue (best practice: separate meeting)
  - Open Meetings Advisory Opinion 2006-15











OGPA – Notice and Agenda

- Amending Agenda
  - Routine matters that arise after the deadline to amend an agenda must be held over to the next regular or special meeting
  - If an agenda is amended due to an emergency, both the meeting agenda and the meeting minutes must explain the facts and circumstances of the emergency

OGPA - Conduct of Meetings

- Members of Governing Body may attend meeting by phone or video conference:
  - Must be able to hear and be heard by Governing Body and public (speaker phone)
  - Amend bylaws to permit video/phone attendance
- May not deliberate, vote or otherwise take official action by means of a letter, number or other "secret device"
  - No secret ballot
  - Question regarding "consent agenda"
- Best practice:
  - approve each item with separate motions and vote



OGPA – Conduct of Meetings

- May require members of the public to sign up to speak during public comment (not more than 15 minutes prior to meeting)
- May make provisions to remove members of the public disrupting the meeting to the extent that the meeting is compromised
- May regulate placement and use of radio and television equipment
- May limit time for public comment
- Consistency is key











OGPA: Emergency Meetings

- What is an “Emergency?”
- “Emergency Meeting” defined as:
  - Meeting to address unexpected event which requires immediate attention because it posed an imminent threat to:
    - Public Health or safety.
    - Damage to public or private property
    - Material financial loss or other imminent substantial harm to agency or public
- Notice anytime prior to meeting with date, time, place and purpose











OGPA: Emergency Meetings

- Hold a meeting separate from noticed meeting
- Create notice and agenda
- Include first agenda item: Authorization to hold Emergency Meeting
  - Reference W.V. Code § 6-9A-2
  - Explain reason for Emergency and nature of "imminent threat"
  - Hold vote of board, following motion and second, to hold Emergency Meeting
  - Include reasoning, description of imminent threat and vote in minutes
- Vote on issue after approval of meeting











OGPA – Minutes of Meetings

- All meetings except executive sessions must have minutes
- Recommendation: Do NOT take minutes of executive sessions
- Meeting minutes must be made available within a "reasonable time"
- "Reasonable time" defined by OMAO 2010-04 as "close of business on the next business day following [the next meeting]"











OGPA – Minutes of Meetings

- Minutes must contain:
  - Date, time, place of meeting
  - Name of governing body, members, present and absent, and presiding officers
- All motions, etc., identified by person moving its action, making second and disposition
- Results of all votes and vote of each member on each action











OGPA – Meeting Executive Session

- An exception to the requirement that all meetings are open to the public
- Executive Session allows the public to be excluded from a portion of the meeting
- Press are also excluded from meeting



OGPA – Meeting Executive Session

NO DECISION MAY BE MADE

IN AN EXECUTIVE SESSION!











OGPA – Meeting Executive Session

- Basis for Executive Session
  - Must have specific authority under one or more of the 12 recognized exceptions (§6-9A-4)
  - Employment related matters
  - To hear complaint against a public officer or employer











OGPA – Meeting Executive Session

- To decide discipline or expulsion of student in public school or college
- License
- To consider the physical or mental health of any person
- Unwarranted invasion of privacy
- Official investigation regarding law enforcement or crime prevention



OGPA – Meeting Executive Session

- Develop security personnel or devices
- Purchase involving commercial competition which might affect the financial interest of public body
- Avoid premature disclosure of awards
- Matters which by express provisions of federal law or state statute or rule of court is rendered confidential
  - Economic development FOIA exception











OGPA – Meeting Executive Session

- Presiding officer proposes agenda items and identifies specific authorization for Executive Session
- Motion, second and majority affirmative vote of the members present to go into Executive Session
- Does not need to be on the agenda as an "Executive Session"
- Agenda item must be sufficiently detailed to explain item











OGPA – Meeting Executive Session

- An executive session **cannot** be called simply because the attorney for the public agency is in attendance at the meeting
- "Executive Session" for matters which are subject to litigation or prospective litigation











OGPA – Meeting Executive Session

- Possible criminal penalties
  - Misdemeanor
  - Fine $500 to $1,000
- Any citizen of the state within 120 days of allegedly unlawful action can file suit in county where public agency regularly meets.
- Court may:
  - Compel compliance
  - Enjoin non-compliance
  - Invalidate action at improperly noticed meeting
- Prevailing plaintiff may receive attorney's fees











Help!

- Ethics Commission Advisory opinion
- Attorney General Official Compilations
- Ethics Commission:

West Virginia Ethics Commission

210 Brooks Street, Suite 300
Charleston, West Virginia 25301
(304) 558-0664
Toll-Free
(866) 558-0664

www.ethics.wv.gov
Email: ethics@wv.gov



Relationships



Communication



Budgeting
and Staffing



Know-How



Results

Thank You

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT		AMOUNT
UNITED BANK	WA/SWR BOND: 2/28/20-2/28/	WATER FUND	WATER		50.00
				TOTAL:	50.00
USA BLUEBOOK	MISC SUPPLIES FOR WTP	WATER FUND	WATER		685.26
	GRANULAR CHLORINE - WTP	WATER FUND	WATER		319.95
	CALIBRATION CYLINDER, TON	WATER FUND	WATER		966.20
	PIPET TIPS,TENSETTE PIPET,	SEWER FUND	SEWER		802.21
	STIRRER ANALOG	SEWER FUND	SEWER		151.90
				TOTAL:	2,925.52
WV DEPT OF TRANSPORTATION	DRIVING RECORDS	WATER FUND	WATER		82.50
	DRIVING RECORDS	SEWER FUND	SEWER		82.50
				TOTAL:	165.00

========== FUND TOTALS ==========

50	WATER FUND	40,292.31
60	SEWER FUND	145,955.02
	GRAND TOTAL:	186,247.33

TOTAL PAGES: 4

APPROVED BY: _____

APPROVED BY: _____

Note:

Highlighted invoices to be reimbursed by the Route 9 Sewer Project Escrow Account;

Highlighted invoices to be reimbursed by the developer

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT		AMOUNT
MICRO-TECH DESIGNS, INC.	GH/CAV SENSAPHONE W/SUBSCR	WATER FUND	WATER		8,368.75
	WILLOWSPRINGS: SOFT START	SEWER FUND	SEWER		1,600.00
				TOTAL:	9,968.75
MID ATLANTIC STORAGE SYSTEMS	LIFT RNTL WA TNK STORGE RE	WATER FUND	WATER		1,243.39
				TOTAL:	1,243.39
MISS UTILITY OF WV, INC.	MESSAGE FEES: FEB	WATER FUND	WATER		85.40
				TOTAL:	85.40
PACE ANALYTICAL SERVICES, LLC	TESTING: PWSIDWV3301905/IO	WATER FUND	WATER		248.50
	TESTING: PWSID-WV3301905 S	WATER FUND	WATER		559.90
	TESTING: TUSC MONTHLY	SEWER FUND	SEWER		173.19
	TESTING: CT WEEKLY	SEWER FUND	SEWER		173.19
	TESTING: CT WEEKLY	SEWER FUND	SEWER		173.19
	TESTING: TUSC WEEKLY	SEWER FUND	SEWER		85.85
	TESTING: UIC-1432-15-037	SEWER FUND	SEWER		228.34
				TOTAL:	1,642.16
PERRY & ASSOCIATES, CPA'S	PREPARATION OF AUDIT	WATER FUND	WATER		3,475.00
	PREPARATION OF AUDIT	SEWER FUND	SEWER		3,475.00
				TOTAL:	6,950.00
POTOMAC EDISON	110 146 659 310	SEWER FUND	SEWER		498.10
				TOTAL:	498.10
RK & K ENGINEERS	TO4 MODIFIED FLOWING SPRNG	SEWER FUND	NON-DEPARTMENTAL		779.63
	TO5 SEWER MODEL	SEWER FUND	NON-DEPARTMENTAL		5,153.39
	TO16 LLYOD'S FLAT& MOOSE L	SEWER FUND	NON-DEPARTMENTAL		1,134.00
	TO13 DECOMM BELVEDERE PS	SEWER FUND	SEWER		2,052.68
	TO14 MNHLEVAL@EVITTS/BRWNV	SEWER FUND	SEWER		103.95
				TOTAL:	9,223.65
ROSS H BARE	TUSC WWTP SVC CALL	SEWER FUND	SEWER		575.00
	CRANES LN STATION REPAIRS	SEWER FUND	SEWER		4,879.41
	CTWWTP INFLUENT PMP UPGRD	SEWER FUND	SEWER		9,876.70
				TOTAL:	15,331.11
SG PLUMBING, INC.	BLAKELEY PL 3/08/21	WATER FUND	WATER		1,444.60
				TOTAL:	1,444.60
SNYDER ENVIRONMENTAL SERVICES, INC	CNTCTR AP#13 RT9 PRJCT	SEWER FUND	NON-DEPARTMENTAL		21,375.00
				TOTAL:	21,375.00
STEPTOE & JOHNSON PLLC	CNSTRCTN STRMWTR PRMT ISSU	SEWER FUND	NON-DEPARTMENTAL		135.00
	GENERAL ENVIRONMENTAL	SEWER FUND	SEWER		1,620.00
	GENERAL EMPLOYER COUNSELIN	SEWER FUND	SEWER		202.50
				TOTAL:	1,957.50
GERALD TAYLOR CO., INC.	PUMP / TRANSPORT	WATER FUND	WATER		691.97
	PUMP/ TRANSPORT	WATER FUND	WATER		486.95
				TOTAL:	1,178.92
THE CI THORNBURG CO, INC.	CHLORINE	WATER FUND	WATER		903.00
				TOTAL:	903.00

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
			TOTAL:	5,903.85
WV DEPT OF HEALTH & HUMAN SERVICES	FLOURIDE TEST	WATER FUND	WATER	15.00
	BACTERIOLOGICAL TESTING	WATER FUND	WATER	120.00
	BACTERIOLOGICAL TESTING	WATER FUND	WATER	100.00
			TOTAL:	235.00
EAST MOUNTAIN HEALTH PHYSICIANS, INC	S.WILLIAMS HEPB VACCINE 3/	WATER FUND	WATER	92.00
			TOTAL:	92.00
FASTENAL	STAINLESS STEEL BOLTS	SEWER FUND	SEWER	127.48
			TOTAL:	127.48
FREEMIRE & ASSOCIATES, INC.	CRAIGHILL GRINDER PUMP	SEWER FUND	SEWER	3,275.00
			TOTAL:	3,275.00
FRONTIER COMMUNICATIONS	304-876-2120-111514-4	WATER FUND	WATER	94.53
	304-8766-9970-121914-4	WATER FUND	WATER	94.53
			TOTAL:	189.06
GUTTMAN ENERGY	W/E 3/07/21	WATER FUND	WATER	332.78
	W/E 3/14/21	WATER FUND	WATER	318.45
	W/E 3/07/21	SEWER FUND	SEWER	620.83
	W/E 3/14/21	SEWER FUND	SEWER	547.55
			TOTAL:	1,819.61
GANNETT FLEMING VALUATION & RATE CONSU	WASTEWATER COST OF SVC SUR	SEWER FUND	SEWER	7,680.00
			TOTAL:	7,680.00
HACH COMPANY	S-TKN TNT	SEWER FUND	SEWER	376.22
			TOTAL:	376.22
HATCH ASSOCIATES CONSULTANTS, INC.	TO10 H-363705 MAGNOLIA SPR	SEWER FUND	NON-DEPARTMENTAL	10,525.25
	TO4 H-359787 RT 9 PRJCT	SEWER FUND	NON-DEPARTMENTAL	1,853.25
			TOTAL:	12,378.50
HOME DEPOT CREDIT SERVICES	HOME DEPOT CARD 2414	SEWER FUND	SEWER	226.05
			TOTAL:	226.05
INTELLIPOINT TECHNOLOGIES, LLC	IT-REGULAR-REMOTE	WATER FUND	WATER	150.00
			TOTAL:	150.00
INWOOD QUARRY, INC.	I8 PICKUPS: 3/09/21	WATER FUND	WATER	478.67
	C2 PICKUPS: 3/10/21	WATER FUND	WATER	625.22
	C2 PICKUPS: 3/16/21	WATER FUND	WATER	662.41
			TOTAL:	1,766.30
JAMES RIVER EQUIPMENT	EQUIIPMENT RENTAL	SEWER FUND	SEWER	3,200.00
			TOTAL:	3,200.00
JEFFERSON UTILITIES, INC	12-0820-00	SEWER FUND	SEWER	135.36
	12-0820-00	SEWER FUND	SEWER	45.12
			TOTAL:	180.48
JOHNNY BLUE, INC	WOODLAWN PROJECT	SEWER FUND	SEWER	99.00
			TOTAL:	99.00

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT		AMOUNT
APPLE VALLEY TIRE	TIRE CHANGE & DISPOSAL	SEWER FUND	SEWER		1,452.00
				TOTAL:	1,452.00
BIEDLER'S ELECTRIC MOTOR REPAIR, INC.	NEW PMP@ ORIG DEMORY FARM	SEWER FUND	SEWER		3,000.00
	HUNTFIELD- REPAIR PUMP	SEWER FUND	SEWER		5,038.43
				TOTAL:	8,038.43
CASTO & HARRIS, INC.	6000 DOOR HANGERS	WATER FUND	WATER		1,190.86
				TOTAL:	1,190.86
CHARLES TOWN SEWER	FEBRUARY FUNDING	SEWER FUND	NON-DEPARTMENTAL		12,570.72
				TOTAL:	12,570.72
CHARLES TOWN WATER	FEBRUARY FUNDING	WATER FUND	NON-DEPARTMENTAL		9,253.98
				TOTAL:	9,253.98
CITY ELECTRIC SUPPLY CO	10 KW @ 480V, 30	WATER FUND	WATER		660.00
	NEW FLOW METERS PARTS	SEWER FUND	SEWER		919.19
	N4X WMNT ENCL W HANDLE	SEWER FUND	SEWER		2,100.00
	ELECTRIC SUPPLIES FOR FLOW	SEWER FUND	SEWER		1,204.82
	SUPPLIES FOR HUNTFIELD	SEWER FUND	SEWER		175.00
	SUPPLIES FOR HUNTFIELD	SEWER FUND	SEWER		758.82
				TOTAL:	5,817.83
COASTTEC	APC PWR SVNG ACK-UPS PRO 7	WATER FUND	WATER		280.16
				TOTAL:	280.16
COMCAST BUSINESS	8299 31 008 0138502	WATER FUND	WATER		230.36
	8299 31 008 0138502	SEWER FUND	SEWER		230.36
				TOTAL:	460.72
CORE & MAIN	1" SETTER, BRASS TEE	WATER FUND	WATER		554.66
	VALVE BOX, VALVE LID, GASK	WATER FUND	WATER		813.31
	BAND,METER TILE,TUBING,CPL	WATER FUND	WATER		1,289.12
	METER TILE, TUBING	WATER FUND	WATER		124.00
	BULLET METER BOX	WATER FUND	WATER		1,231.68
	FRAME&COVER, LID ONLY OBLO	WATER FUND	WATER		1,824.00
	8" FLG CHECK VALVE AFC	SEWER FUND	SEWER		9,308.68
	8" FXF, 8 FLG ACC RR FF	SEWER FUND	SEWER		2,011.76
	PIPES	SEWER FUND	SEWER		5,265.60
	MEGAFLANGES, FLG ACC RR FF	SEWER FUND	SEWER		3,853.93
	EPOXY BAND,CPLG,PIPE,MAXAD	SEWER FUND	SEWER		4,771.35
	SDR35 SWR, CB-6.66UN RM SW	SEWER FUND	SEWER		534.74
				TOTAL:	31,582.83
CSX TRANSPORTATION, INC	ANNUAL PIPELINE FEES	WATER FUND	WATER		145.22
				TOTAL:	145.22
JOHN C NORTON	505 N MARSHALL ST, RANSON	SEWER FUND	SEWER		1,739.43
				TOTAL:	1,739.43
CUMMINS, INC	HUNTFIELD: FULL PM SVC	SEWER FUND	SEWER		657.68
	S SAMUEL: FULL PM SVC	SEWER FUND	SEWER		416.82
				TOTAL:	1,074.50
DEPT OF ENVIRONMENTAL PROTECTION	GRNDWTR,SLUDGE,WVNPDES FEE	SEWER FUND	SEWER		5,903.85