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HEALTH AND SAFETY PLAN FOR GROUNDWATER INFILTRATION INVESTIGATION IN  
WEST DITCH AREA SITE 1 NAWC TRENTON NJ  
7/1/2012  
TETRA TECH

**Health and Safety Plan**  
**Groundwater Infiltration Investigation**  
**In The West Ditch Area (Site 1)**

**at the**

**Former Naval Air Warfare Center**  
**Trenton**  
**West Trenton, New Jersey**



**Naval Facilities Engineering Command**  
**Mid-Atlantic**

**Contract Number N62470-08-D-1001**  
**Contract Task Order WE47**

**July 2012**

**HEALTH AND SAFETY PLAN**  
**FOR**  
**GROUNDWATER INFILTRATION INVESTIGATION**  
**IN THE WEST DITCH AREA (SITE 1)**  
**AT THE**  
**FORMER NAVAL AIR WARFARE CENTER TRENTON**  
**WEST TRENTON, NEW JERSEY**  
**COMPREHENSIVE LONG-TERM**  
**ENVIRONMENTAL ACTION-NAVY (CLEAN) CONTRACT**

**Prepared for:**

**Naval Facilities Engineering Command Mid-Atlantic**  
**9742 Maryland Avenue**  
**Norfolk, Virginia 23511-3095**

**Prepared by:**

**Tetra Tech**  
**234 Mall Boulevard, Suite 260**  
**King of Prussia, Pennsylvania 19406**

**Prepared under:**

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**Contract Task Order WE47**

**July 2012**

**PREPARED UNDER THE SUPERVISION OF:**

  
\_\_\_\_\_  
**MARY M. MANG, CHMM**  
**PROJECT MANAGER**  
**TETRA TECH**  
**KING OF PRUSSIA, PENNSYLVANIA**

**APPROVED FOR SUBMITTAL BY:**

  
\_\_\_\_\_  
**MATTHEW M. SOLTIS, CIH, CSP**  
**CLEAN HEALTH AND SAFETY MANAGER**  
**TETRA TECH**  
**PITTSBURGH, PENNSYLVANIA**

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## **1.0 INTRODUCTION**

The objective of this Health and Safety Plan (HASP) is to provide the health and safety practices and procedures for Tetra Tech personnel to conduct Groundwater Infiltration Investigation in the West Ditch Area (Site 1) at the Former Naval Air Warfare Center (NAWC) Trenton, located in West Trenton, New Jersey.

This HASP is to be used in conjunction with the Tetra Tech Health and Safety Guidance Manual (HSGM). The HSGM provides detailed information pertaining to hazard recognition and control, and Tetra Tech standard operating procedures. This HASP and the contents of the HSGM were developed to comply with the requirements stipulated in 29 CFR 1910.120 (OSHA's Hazardous Waste Operations and Emergency Response Standard). Both documents must be present at the site to satisfy these requirements.

This HASP has been written to support proposed tasks and techniques associated with the scope of work (SOW) as presented in Section 4.0. Should the proposed work site conditions and/or suspected hazards change, or if new information becomes available, this document will be modified. Changes to the HASP will be made with the approval of the Tetra Tech CLEAN Health and Safety Manager (HSM) and the Project Manager (PM). The PM will notify affected personnel of changes.

### **1.1 AUTHORITY**

This work is authorized under the Comprehensive Long-Term Environmental Action Navy (CLEAN) contract, administered through the U.S. Navy Naval Facilities Engineering Command Mid-Atlantic, as defined under Contract Number N62470-08-D-1001, Contract Task Order WE47.

### **1.2 KEY PROJECT PERSONNEL AND ORGANIZATION**

This section defines responsibilities for site safety and health for Tetra Tech and subcontractor employees performing project support. Personnel assigned to these positions shall exercise the primary responsibility for the on-site health and safety. These persons will be the primary point of contact for any questions regarding the safety and health procedures and the selected control measures.

- The Tetra Tech PM is responsible for the overall direction and implementation of health and safety for this work.

- The Tetra Tech Field Operations Leader (FOL) is responsible for implementation of this HASP. The FOL manages field activities, executes the work plan, and enforces safety procedures, as applicable to the work plan. Specifically, the FOL will:
  - Verify training and medical status of on-site personnel in relation to site activities.
  - Assist and represent Tetra Tech with emergency services (if needed)
  - Provide elements of site-specific training for on-site personnel.
  
- The Tetra Tech Site Safety Officer (SSO) or their representative supports the FOL concerning the aspects of health and safety including, but not limited to:
  - Coordinating the health and safety activities
  - Selecting, applying, inspecting, and maintaining personal protective equipment (PPE)
  - Establishing work zones and control points
  - Implementing air monitoring procedures
  - Implementing hazard communication, respiratory protection, and other associated safety and health programs
  - Coordinating emergency services
  - Providing elements of site-specific training
  
- Compliance with these requirements is monitored by the Project Health and Safety Officer (PHSO) and is coordinated through the HSM.

### **1.3 STOP WORK**

ALL employees are empowered, authorized, and responsible to STOP WORK at any time when an imminent and uncontrolled safety or health hazard is perceived. In a Stop Work event (immediately after the involved task has been shut down and the work area has been secured in a safe manner) the employee shall contact the Project Manager and the Corporate Health and Safety Manager. Through observations and communication, all parties involved shall then develop, communicate, and implement corrective actions necessary and appropriate to modify the task and to resume work.

**1.4 SITE INFORMATION AND PERSONNEL ASSIGNMENTS**

**Site Name:** Former NAWC - Trenton

**Address:** 1440 Parkway Avenue, Trenton NJ 08628

**U.S. Navy Remedial Project Manager:** Jeffrey M. Dale

**Site Point of Contact:** Willie Lin

**Address:** 4911 South Broad Street  
Philadelphia, Pennsylvania 19112

**Phone Number:** (215) 897-4904

**Purpose of Visit:** Conduct Groundwater Infiltration Investigation at Site 1

**Proposed Dates of Work:** July 2012 through completion

**Project Team:**

**Tetra Tech Personnel:**

Mary Mang

TBD

Matthew M. Soltis CIH, CSP

James K. Laffey

**Discipline/Tasks Assigned:**

PM

FOL/SSO

HSM

PHSO

**Subcontractor Personnel:**

Talon Drilling TBD

**Discipline/Tasks Assigned:**

Driller

Hazard Assessment (for purposes of 29 CFR 1910.132) for HASP preparation has been conducted by:

**Prepared by:** James K. Laffey

## **2.0 EMERGENCY ACTION PLAN**

### **2.1 INTRODUCTION**

This section has been developed as part of a planning effort to direct and guide field personnel in the event of an emergency. However, given the nature and scope of planned site activities, significant emergency situations are unlikely. In the event of an emergency, Tetra Tech personnel will provide emergency action support only to the capabilities of on-site personnel. Emergency situations that are beyond the capabilities of onsite Tetra Tech personnel will require assistance from outside emergency responders. In the event of emergencies that are beyond the capabilities of on-site personnel, an evacuation will be initiated. In an evacuation, site personnel will move to a safe place of refuge and the appropriate emergency response agencies will be notified. The emergency response agencies listed in Table 2-1 of this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the areas of site operations, which ensures adequate emergency response time. This emergency action plan conforms to the requirements of Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.38(a), as allowed in OSHA 29 CFR 1910.120(I)(1)(ii).

Tetra Tech personnel will provide incidental actions for incidents such as:

- Incipient fire and spill prevention and action
- Removal of personnel from emergency situations
- Provision of initial medical support for injury/illnesses requiring only first-aid level support
- Provision of site control and security measures, as necessary

### **2.2 EMERGENCY PLANNING**

Through the initial hazard/risk assessment effort, there is a minor potential for injury or illnesses resulting from exposure to chemical, physical, or other hazards, and little likelihood of emergency situations. To further minimize or eliminate potential emergency situations, pre-emergency planning activities will be implemented. The FOL is responsible for:

- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures with planned activities at the site, and providing early recognition and prevention information, where possible.

## **2.3 EMERGENCY RECOGNITION AND PREVENTION**

### **2.3.1 Recognition**

Foreseeable emergency situations that may be encountered during site activities will generally be recognizable by visual observation. Visual observation will be the principal method of identifying any hazards that may be associated with the proposed SOW. These potential hazards, the activities with which they have been associated, and the recommended control methods are discussed in detail in Sections 5.0 and 6.0 of this document.

### **2.3.2 Prevention**

Tetra Tech personnel will minimize the potential for emergencies by ensuring compliance with the HASP, the Tetra Tech HSGM, applicable OSHA regulations, and by following directions given by those persons responsible for the health, safety, and welfare of site personnel.

## **2.4 EVACUATION ROUTES, PROCEDURES, AND PLACES OF REFUGE**

An evacuation will be initiated whenever recommended hazard controls are insufficient to protect the health, safety or welfare of site workers. Specific examples of conditions that may initiate an evacuation include, but are not limited to the following: severe weather conditions; fire or explosion; monitoring instrumentation readings which indicate levels of contamination are greater than instituted action levels; and evidence of personnel overexposure to potential site contaminants.

In the event of an emergency requiring evacuation, personnel will immediately stop activities and report to the designated safe place of refuge unless doing so would pose additional risks. See Figure 2-1 for a recommended safe place of refuge. When evacuation to the primary place of refuge is not possible, personnel will proceed to a designated alternate location and remain until further notification from the Tetra Tech FOL/SSO. Safe places of refuge will be identified prior to the commencement of site activities by the FOL/SSO and will be conveyed to personnel as part of the pre-activities training session. This information will be given during daily safety meetings. Whenever possible, the safe place of refuge will also serve as the telephone communications point for that area. During an evacuation, personnel will remain at the refuge location until directed otherwise by the Tetra Tech FOL/SSO or the on-site Incident Commander of the Emergency Response Team. The FOL/SSO will perform a head count at this location to account for and to confirm the location of site personnel. Emergency response personnel will be immediately notified of any unaccounted personnel. The FOL/SSO will document the names of personnel onsite (on a daily basis) in the site Health and Safety Logbook. This information will be utilized to perform the head count in the event of an emergency.

**FIGURE 2-1  
SAFE PLACE OF REFUGE**



Evacuation procedures will be discussed during the pre-activities training session, prior to the initiation of project tasks. Evacuation routes from the site and safe places of refuge are dependent upon the location at which work is being performed and the circumstances under which an evacuation is required. Additionally, site location and meteorological conditions (i.e., wind speed and direction) will dictate evacuation routes. The assembly points will be selected and communicated to the workers, in the daily briefing, relative to the site location where work is being performed. Evacuation should always take place in an upwind direction from the site. Facility maps will be posted showing the locations of the work site(s).

**2.5 DECONTAMINATION PROCEDURES/EMERGENCY MEDICAL TREATMENT**

During any site evacuation, decontamination procedures will be performed only if doing so does not further jeopardize the welfare of site workers. Decontamination will be postponed if the incident warrants immediate evacuation. However, it is unlikely that an evacuation would occur which would require workers to evacuate the site without first performing the necessary decontamination procedures.

Tetra Tech personnel will perform rescue operations from emergency situations and are trained to provide initial medical support for injury/illnesses requiring "Basic First-Aid" level support. Basic First-Aid

is considered treatment that can be rendered by a trained first aid provider at the injury location (for example; minor cuts, bruises, stings, scrapes, and burns). At least one person on the field crew will have adult first-aid/CPR and blood borne pathogen training and will be on site when work is being performed to offer first-aid assistance. The on-site first-aid/CPR responders are trained to stop or control severe bleeding, immobilize potential fractures and provide CPR in the event a person stops breathing, as with electrical shock, until the local emergency responders arrive. Medical attention above First-Aid level support will require assistance from the designated emergency response agencies.

### **2.5.1 Medical Data Sheet**

Attachment I contains a Medical Data Sheet. Any pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets to be carried by each site worker. If an exposure to hazardous materials has occurred, provide information on the chemical, physical, and toxicological properties of the subject chemical(s) to medical service personnel. If needed and once completed, the appropriate personnel on the incident report form should be notified and their signatures obtained. This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible.

## **2.6 EMERGENCY ALERTING AND ACTION/ACTION PROCEDURES**

Since Tetra Tech personnel will be working in close proximity to each other, voice commands will comprise the mechanisms to alert site personnel of an emergency. If an incident occurs, site personnel will initiate the following procedures:

- Initiate incident alerting procedures verbally.
- Describe to the FOL (who will serve as the Incident Coordinator) what has occurred and provide as many details as possible.
- If the FOL determines that the situation is beyond the capabilities of the site personnel, local emergency services will be contact using the emergency reference information listed in Table 2-1.
- The situation will be explained to the emergency dispatcher and the appropriate emergency services will be dispatched.

**2.7 EMERGENCY CONTACTS**

Prior to performing work at the site, personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. As indicated earlier, Table 2-1 provides a list of emergency contacts and their corresponding telephone numbers. This table will be made readily available to site personnel and copies will be placed in each of the site vehicles.

**TABLE 2-1  
EMERGENCY REFERENCE  
FORMER NAWC TRENTON**

<b>AGENCY</b>	<b>TELEPHONE</b>
<b>EMERGENCY</b> Police, Fire/Hazardous Materials, EMS	<b>9-1-1</b>
Ewing Police Department (non-emergency)	(609) 882-1313
Capital Health System Mercer Campus	(609) 394-4010
Poison Control Center	(800) 222-1222
Chemtrec	(800) 424-9300
National Response Center	(800) 424-8802
NAVFAC Trenton RPM: Jeffrey M. Dale	(215) 897-4914-office (267) 347-2680-cell
Trenton POC: Willie Lin	(215) 897-4904
PM: Mary M. Mang, CHMM	(610) 382-1174
FOL/SSO: TBD	(610) 491-9688-office
CLEAN HSM: Matthew Soltis, CIH, CSP	(412) 921-8912
PHSO: James K. Laffey	(412) 921-8678-office (412) 370-6668-cell
Tetra Tech, King of Prussia Office (Location of PM and FOL/SSO)	(610) 491-9688
Tetra Tech, Pittsburgh Office (Location of HSM and PHSO)	(412) 921-7090

**2.8 EMERGENCY ROUTE TO HOSPITALS**

A map to the hospital is included in Figure 2-2

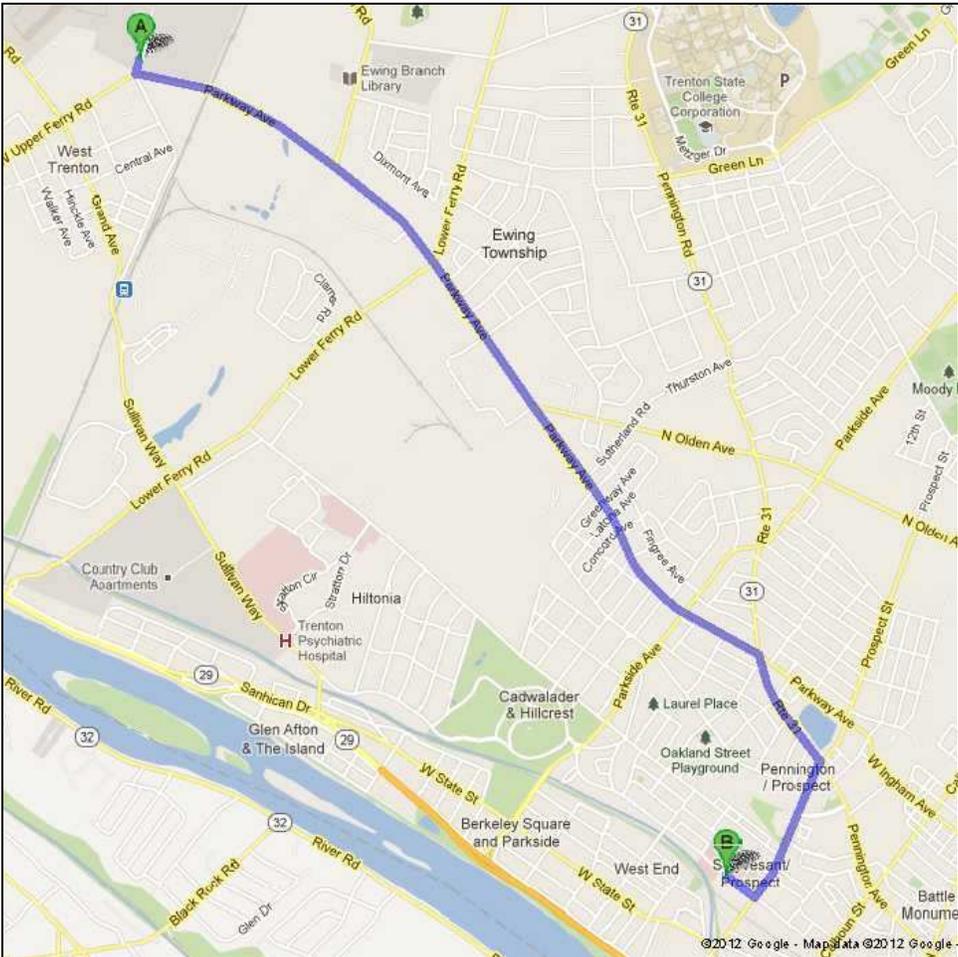
Capital Health System Mercer Campus  
446 Bellevue Ave  
Trenton, NJ 08618-4502  
(609) 394-4010

4 miles approximately 10 minutes

- Head south on Jack Stephan Way toward Parkway Ave 285 ft
- Turn left onto Parkway Ave 2.9 mi
- Slight right onto Pennington Ave 0.4 mi
- Turn right onto Prospect St 0.5 mi
- Turn right onto Bellevue Ave 0.1 m

Hospital on the right

**FIGURE 2-2  
ROUTE TO CAPITAL HEALTH SYSTEM  
MERCER CAMPUS**



## **2.9 EMERGENCY EQUIPMENT AND PPE**

First-aid kits, eye wash units (or bottles of disposable eyewash solution) and fire extinguishers will be maintained onsite and shall be immediately available for use in the event of an emergency. This equipment will be located in site vehicles. Personnel will only provide first-aid assistance to the level of their training. The following Level D equipment will be available on site:

- Coveralls (e.g., Tyvek)
- Safety toe boots/shoes
- Safety glasses
- Hearing protection
- Nitrile examination gloves
- Hard hat, if overhead hazard exists

## **2.10 INJURY/ILLNESS REPORTING**

If any Tetra Tech personnel are injured or develop an illness as a result of working on site, the Tetra Tech “Incident Report Form” (Attachment II) must be followed. Following this procedure is necessary for documenting of the information obtained at the time of the incident.

### **2.10.1 TOTAL Incident Reporting System**

TOTAL is Tetra Tech’s online incident reporting system. Site employees can use TOTAL to directly report health and safety incidents, notify key personnel, and initiate the process for properly investigating and addressing the causes of incidents, including near-miss events. An incident is considered any unplanned event. It may include several types of near misses, events where no loss was incurred, or incidents that resulted in injuries or illness, property or equipment damage, chemical spills, fires, or damage to motor vehicles.

TOTAL is an intuitive system that will guide you through the necessary steps to report an incident within 24 hours of its occurrence. TOTAL is maintained on the Tetra Tech Intranet site at <https://my.tetrattech.com/>

Once on the “My Tetrattech” site, TOTAL can be found under the Health and Safety tab, Incident Reporting section, select “Report an Incident (TOTAL)”. This will connect you directly to TOTAL. The TOTAL system can also be accessed directly from the internet using the following web address: <http://totalhs.tetrattech.com/>

**Note:** When using the system outside the Tetra Tech intranet system or when operating in a wireless mode, a VPN connection will be required. The speed of the application may be affected dependent upon outside factors such as connection, signal strength, etc. Enter the system using your network user name and password. The user name should be in the following format - TT\nickname.lastname.

## 3.0 SITE BACKGROUND

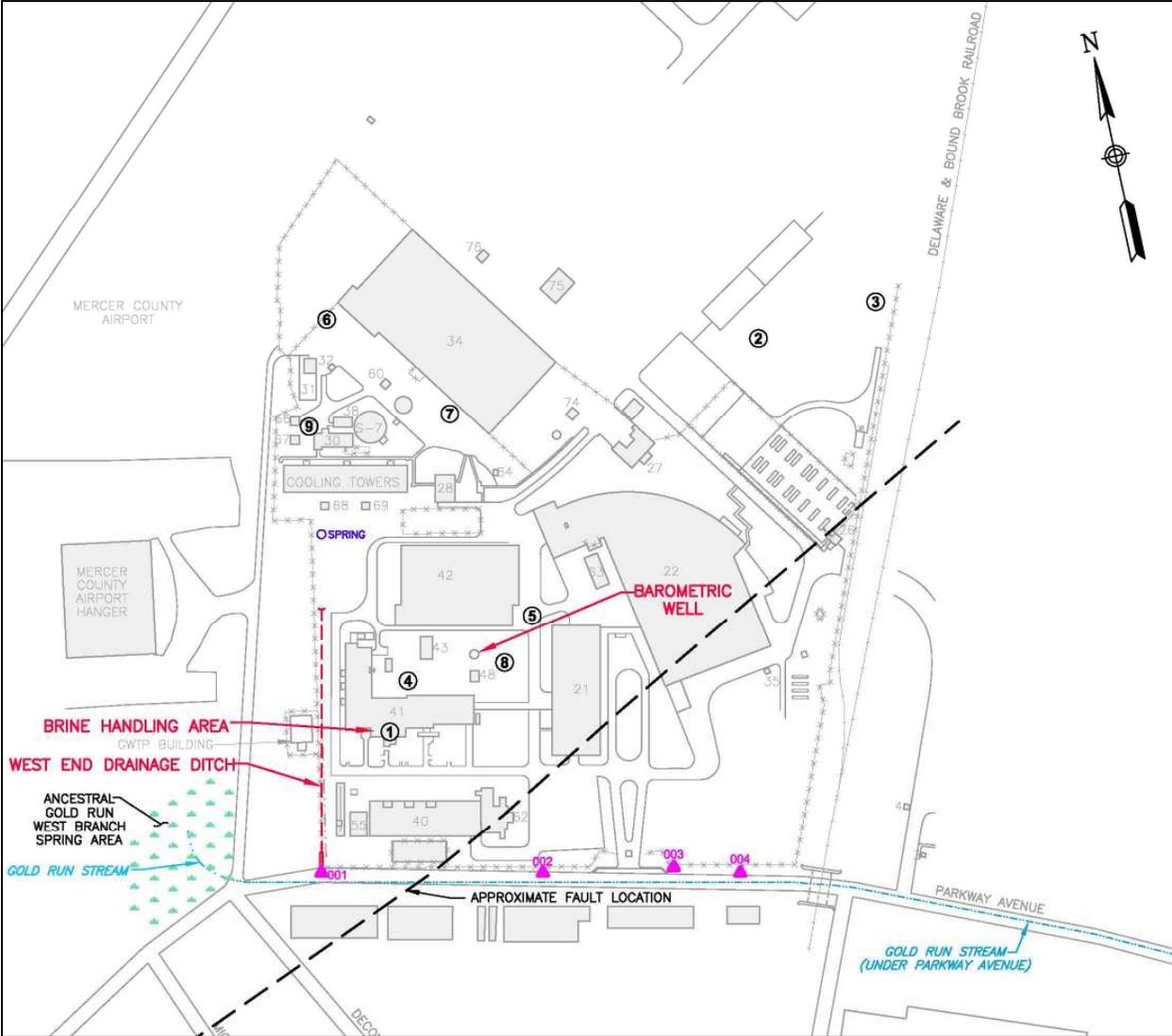
### 3.1 SITE DESCRIPTION

The former NAWC facility is located 5 miles northwest of Trenton, New Jersey in Ewing Township, Mercer County. The facility, when owned and operated by the Navy, consisted of approximately 67 acres. As shown on Figure 3-1, the Mercer County Airport borders most of the northern and western portions of the former NAWC Trenton property. An active rail line owned by CSX Transportation, Inc. borders the site on the east and separates Parcel C (former Buildings 1 and 2) from the remainder of the facility. Parkway Avenue abuts the southern boundary of the NAWC Trenton property. Across Parkway Avenue and east of the railroad is an empty parcel where General Motors Corporation (GMC)-Delphi Interior formerly operated a manufacturing facility. East of the former GMC site is Gold Run stream and three associated ponds which drain southwesterly to the Delaware River. South of Parkway Avenue and west of the railroad tracks are several small commercial facilities. Residential and light-industrial areas are located further south and southwest of the NAWC Trenton facility.

NAWC Trenton was commissioned in 1951 as the Naval Air Turbine Test Station. NAWC Trenton was primarily used as a testing facility for military aircraft engine performance under simulated high and low altitude conditions. Three large buildings formerly comprised the experimental engine laboratory. By the mid-1980s, construction of missile-related test equipment became a priority at the site. An on-site industrial wastewater treatment plant, three high-capacity water cooling towers, an automotive workshop, a machine shop, a woodworking shop, fuel and lubrication laboratories, a general chemistry laboratory, and various engineering and administrative offices were also located at the facility. Industrial wastewaters from former site operations were diverted through a central piping system to a 52-foot deep gravity basin, located between Buildings 41 and 42, known as the Barometric Well. The Navy decommissioned the Barometric Well in May 1998, at which time the concrete well vault was filled with gravel and capped with concrete, and the related piping was cut and sealed.

Operational closure of NAWC Trenton occurred on December 15, 1998 under the Base Realignment and Closure (BRAC) Act of 1993. Several large buildings currently remain in place; however, they were decommissioned and cleaned as necessary by the Navy as part of the 1998 closure activities and there are no active utility hookups between the various buildings that remain at the site. Former macadam paved areas and driveways remain. Overgrown bushes and grasses are present in those areas that were formerly grass-covered. The building housing the groundwater treatment plant equipment was added in 1995.

**FIGURE 3-1**  
**FACILITY**



## 4.0 SCOPE OF WORK

This section discusses the specific tasks that are to be conducted as part of this SOW at former NAWC Trenton. These tasks are the only ones addressed by this HASP. Any tasks to be conducted outside of the elements listed here will be considered a change in scope requiring modification of this document. The PM or a designated representative will submit the requested modifications to this document to the HSM.

Specific tasks to be conducted include, but are not necessarily limited to, the following:

- Mobilization/Demobilization
- Global Positioning System Locating
- Soil Boring using HSA or DPT
  - Piezometer Installation and Development
  - Subsurface Soil Sampling
- Groundwater Level Measurements
- Piezometer Development
- Groundwater Sampling
- Surface Water Sampling
- Decontamination Procedures
- Investigation-Derived Waste Management

For more detailed description of the associated tasks, refer to the Work Plan (WP).

## **5.0 IDENTIFYING AND COMMUNICATING TASK-SPECIFIC HAZARDS AND GENERAL SAFE WORK PRACTICES**

The purpose of this section is to identify the anticipated hazards and appropriate hazard prevention/hazard control measures that are to be observed for each planned task or operation. These topics have been summarized for each planned task through the use of task-specific Activity Hazard Analysis (AHA), which are to be reviewed in the field by the SSO with the task participants prior to initiating any task (see Attachment III). Additionally, potential hazard and hazard control matters that are relevant but are not necessarily task-specific are addressed in the following portions of this section.

Section 6.0 presents additional information on hazard anticipation, recognition, and control relevant to the planned field activities.

### **5.1 GENERAL SITE SAFE WORK PRACTICES**

In addition to the task-specific work practices and restrictions identified in the AHAs attached to this HASP, the following general safe work practices are to be followed when conducting work on-site.

- Eating, drinking, chewing gum or tobacco, taking medication, or smoking in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists is prohibited.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area.
- Rehearse unfamiliar operations prior to implementation.
- Buddies should maintain visual contact with each other and with other on-site team members by remaining in close proximity to assist each other in case of emergency.
- Establish appropriate decontamination procedures for leaving the site.
- Immediately report all injuries, illnesses, and unsafe conditions, practices, and equipment to the SSO.
- Observe co-workers for signs of toxic exposure and heat or cold stress.
- Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.

## 6.0 HAZARD ASSESSMENT

This section provides information regarding the chemical and physical hazards which may be associated with the Site and the activities that are to be conducted as part of the scope of work.

### 6.1 CHEMICAL HAZARDS

There has been some data from previous site investigations conducted at the former NAWC Trenton, and based on an evaluation of this data and historical information, the primary site chemicals of potential concern (COPCs) at Site 1 are volatile organic compounds (VOCs), specifically TCE, cis-1,2-DCE, and vinyl chloride. Table 6-1 shows a comparison of the maximum concentrations of the primary COPCs at the site, their worst-case scenario for the maximum concentrations that could be experienced in the air, and to the current Occupational Exposure Limits (OELs).

**TABLE 6-1  
COMPARISON OF CONCENTRATIONS  
WITH CURRENT OCCUPATIONAL EXPOSURE LIMITS**

COPC	Highest Concentration Previously Detected in Water	Worst-Case-Scenario Air Concentration	OEL
TCE	1,200 ug/l	202.41 ppm	ACGIH: 10 ppm - TWA <sub>8</sub> 25 ppm - STEL
cis-1,2-DCE	5,300 ug/l	63.2 ppm	ACGIH: 200 ppm - TWA <sub>8</sub>
Vinyl Chloride	2,440 ug/l	1,35.81 ppm	ACGIH: 1 ppm - TWA <sub>8</sub> OSHA: 5 ppm - STEL

Table Notes:

- TWA<sub>8</sub>: Average air concentration over an 8-hour work period that is not to be exceeded
- TCE OSHA STEL: Concentration in air that is not to be exceed for more than 5 minutes in any 3 hour period
- ACGIH STEL: Concentration in air that is not be exceeded for more than 15 minutes more than 4 times per day

Based on an analysis of the site data, it is possible that some of the COPCs would be present at concentrations above the current OELs. However, given the nature of the planned activities and that work will be conducted outside, it is highly unlikely that any appreciable airborne concentrations will be present. To assure that exposures are avoided and documented, direct reading instruments such as the

photoionization detector (PID) and explosive meter will be used to monitor worker exposures to chemical hazards present at the site.

### **6.1.1 Trichloroethene (TCE)**

Trichloroethylene is a chlorinated hydrocarbon commonly used as an industrial solvent. It is a clear non-flammable liquid with a sweet smell. Trichloroethylene is an effective solvent for a variety of organic materials. Other uses in the food industry included coffee decaffeination and the preparation of flavoring extracts from hops and spices. It was also used as a dry cleaning solvent. When inhaled, trichloroethylene, as with any anesthetic gas, depresses the central nervous system. Its symptoms are similar to those of alcohol intoxication, beginning with headache, dizziness, and confusion and progressing with increasing exposure to unconsciousness. Respiratory and circulatory depression from any anesthetic can result in death if administration is not carefully controlled. As mentioned above, cardiac sensitization to catecholamines such as epinephrine can result in dangerous cardiac arrhythmias. Caution should be exercised anywhere a high concentration of trichloroethylene vapors may be present; the drug can desensitize the nose to its scent, and it is possible to unknowingly inhale harmful or lethal amounts of the vapor.

### **6.1.2 1,2-Dichloroethylene (1,2-DCE)**

1,2-dichloroethylene (or 1,2-DCE) is a highly flammable, colorless liquid with a sharp, harsh odor. It is insoluble in water, but soluble in ethanol, diethyl ether, acetone, benzene, and chloroform. 1,2-DCE is toxic by ingestion, inhalation and intravenous exposure routes. It is irritating to the eyes, skin, respiratory tract and gastrointestinal tract. Signs and symptoms of exposure may include dizziness, drowsiness, headache, dyspnea and pneumonitis. Exposure to high concentrations can produce central nervous system depression and unconsciousness. Hepatic and renal dysfunction may result from chronic exposure. Eye contact may cause conjunctivitis and transient corneal injury.

### **6.1.3 Vinyl Chloride**

Breathing high levels of vinyl chloride can cause you to feel dizzy or sleepy. Breathing very high levels can cause you to pass out, and breathing extremely high levels can cause death. Some people who have breathed vinyl chloride for several years have changes in the structure of their livers. People are more likely to develop these changes if they breathe high levels of vinyl chloride. Some people who work with vinyl chloride have nerve damage and develop immune reactions. The lowest levels that produce liver changes, nerve damage, and immune reaction in people are not known. Some workers exposed to very high levels of vinyl chloride have problems with the blood flow in their hands. Their fingers turn white and hurt when they go into the cold. The effects of drinking high levels of vinyl chloride are unknown. If

you spill vinyl chloride on your skin, it will cause numbness, redness, and blisters. Animal studies have shown that long-term exposure to vinyl chloride can damage the sperm and testes.

#### **6.1.4 Contact with VOCs**

Given the nature of planned activities and that work will be conducted outside in the open air, however, it is highly unlikely that any appreciable airborne concentrations will be present. It is anticipated that the greatest potential for exposure to site contaminants is during intrusive activities (i.e., groundwater sampling). Contaminants may be present as volatiles or bound to particulates. Exposure to contaminants bound to particulates is most likely to occur through ingestion of contaminated soil or water, or hand-to-mouth contact during site activities. For this reason, PPE and basic hygiene practices (washing face and hands before leaving site) will be extremely important.

The likelihood of worker exposure concerns through these two routes are also considered very unlikely, provided that workers follow good personal hygiene and standard good sample collection/sample handling practices, and wear appropriate PPE as specified in the AHA for each task. Examples onsite practices that are to be observed that will protect workers from exposure via ingestion or skin contact include the following:

- No hand-to-mouth activities on site (eating, drinking, smoking, etc.)
- Washing hands upon leaving the work area and prior to performing any hand to mouth activities
- Wearing surgeon's-style gloves whenever handling potentially-contaminated media, including influent groundwater and sample containers.

#### **6.2 PHYSICAL HAZARDS**

The following is a list of physical hazards that may be encountered at the site or may be present during the performance of site activities:

- Slip, trips, and falls
- Strain/muscle pulls from heavy lifting
- Heat Stress
- Pinch/compression points

These hazards are discussed further below, and are presented relative to each task in the task-specific AHAs.

### **6.2.1 Slips, Trips, and Falls**

During various site activities there is a potential for slip, trip, and fall hazards associated with wet, steep, or unstable work surfaces. To minimize hazards of this nature, personnel required to work in and along areas prone to these types of hazards will be required to exercise caution, and use appropriate precautions (restrict access, guardrails, life lines and/or safety harnesses) and other means suitable for the task at hand. Site activities will be performed using the buddy system.

### **6.2.2 Strain/Muscle Pulls from Heavy Lifting**

During execution of planned activities there is some potential for strains, sprains, and/or muscle pulls due to the physical demands and nature of this site work. To avoid injury during lifting tasks personnel are to lift with the force of the load carried by their legs and not their backs. When lifting or handling heavy material or equipment use an appropriate number of personnel. Keep the work area free from ground clutter to avoid unnecessary twisting or sudden movements while handling loads.

### **6.2.3 Heat Related Disorders**

Work performed when ambient temperatures exceed 70°F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on factors similar to those presented above for cold stress.

#### **6.2.3.1 Heat Rash**

Also known as prickly heat, this condition affects the skin. It occurs in situations where the skin remains wet most of the time. The sweat ducts become plugged and a skin rash soon appears.

**Signs and Symptoms** – A skin rash will appear on affected areas of the body with a tingling or prickling sensation.

#### **6.2.3.2 Heat Cramps**

Heat cramps are muscle pains, usually in the lower extremities, the abdomen, or both, that occur after profuse sweating with accompanying salt depletion. Heat cramps most often afflict people in good physical condition, who overwork in conditions of high temperature and humidity. Untreated, heat cramps may progress to heat exhaustion.

**Signs and Symptoms** - Cramps in the extremities and abdomen that begin suddenly during vigorous activity. Heat cramps can be mild with only slight abdominal cramping and tingling in the extremities, but more commonly present intense and incapacitating pain in the abdomen and extremities.

- Respiration rate will increase, decreasing after the pain subsides.
- Pulse rate will increase
- Skin is pale and moist.
- Body temperature are normal
- Generalized weakness is noted as the pain subsides.
- Loss of consciousness and airway maintenance are seldom problems with this condition.

Treatment for heat cramps is aimed at eliminating the exposure and restoring the loss of salt and water.

#### **6.2.3.3 Heat Exhaustion**

Heat exhaustion is a more severe response to salt and water loss, as well as an initial disturbance in the body's heat-regulations system. Like heat cramps, heat exhaustion tends to occur in people working in hot environments. Heat exhaustion may progress to heat stroke. Treatment for heat exhaustion is similar in principle to that for heat cramps.

**Signs and Symptoms** - Heat exhaustion may be accompanied present by a headache, fatigue, dizziness, or nausea with occasional abdominal cramping. More severe cases of heat exhaustion may result in partial or complete temporary loss of respiration and circulation due to cerebral ischemia.

- Sweating is profuse.
- Pulse rate are rapid and weak.
- Respiration rate are rapid and shallow.
- The skin are pale and clammy
- The body temperature is normal or decreased.
- The person could be irritable and restless.

#### **6.2.3.4 Heat Stroke**

Heat stroke is a true medical emergency. It caused by a severe disturbance in the body's heat-regulating system and is a profound emergency: The mortality rate ranges from 25 to 50 percent. It can also occur to people of any age having too much exposure to the sun or prolonged confinement in a hot atmosphere. Heat stroke comes on suddenly. As the sweating mechanism fails, the body temperature begins to rise precipitously, reaching 106°F (41°C) or higher within 10 to 15 minutes. If the situation is not corrected

corrected rapidly, the body cells -- especially have very vulnerable cells to the brain--are literally cooked, and the central nervous system is irreversibly damaged. The treatment for heat stroke is aimed at maintaining vital functions and causing as rapid a decrease of body temperature as possible.

**Signs and Symptoms** – Symptoms of heat stroke can sometimes mimic those of heart attack or other conditions. Sometimes a person experiences symptoms of heat exhaustion before progressing to heat stroke:

- The person's pulse is strong and bounding.
- The skin is hot, dry, and flushed.
- The worker may experience headache, dizziness, and dryness of mouth
- Seizures and coma can occur.
- Loss of consciousness and airway maintenance problems can occur.

#### **6.2.4 Controlling Heat Stress**

The following control measures are only guidelines for heat related emergencies. Actual training in emergency medical care or basic first aid is recommended. Site employees will monitor one another for signs of heat stress. If indications supporting potential heat stress occur, the following corrective measures are performed.

- Inform affected workers of the signs and symptoms of heat stress and encourage co-worker observations.
- Schedule tasks that are physically-demanding in early morning and late afternoon timeframes when heavy loads would be less of an issue.
- The work regime may have to be altered so that enough time is provided for adequate rest periods for cooling down.
- Consume adequate liquids to replace water lost from sweating.
- Drink more water than the amount required to satisfy thirst.
  - Thirst satisfaction is a poor indicator of adequate fluid replacement.
- Approximately 1 cup of cool water every 20 minutes is recommended.
- Replacement fluids, such as Gatorade<sup>®</sup>, can be used with water
- Move affected persons into a shaded cool rest area (Below 77°F is best).
- Remove impermeable protective garments during rest periods.
- Do not be performing other tasks during rest periods.

### **6.2.5 Biological Monitoring**

One of the following procedures will be followed if the work place temperature is 80°F or above, and/or at the SSO's discretion, to make sure the work/rest regimen is providing proper personal protection and to document exposure.

- Heart rate (HR) will be measured by the pulse for 30 seconds as early as possible in the resting period.
  - The HR at the beginning of the rest period should not exceed 110 beats per minute.
  - If the HR is higher, the next work period should be shortened by 10 minutes (or 33 percent), while the length of rest stays the same.
  - If the pulse rate is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33 percent.
  
- Body temperature will be measured orally with a clinical thermometer as early as possible in the resting period.
  - Oral temperature (OT) at the beginning of the rest period should not exceed 99oF.
  - If it does, the next work period should be shortened by 10 minutes (or 33 percent), while the length of the rest period stays the same.
  - However, if the OT exceeds 99.8oF at the beginning of the next rest period, the following work cycle should be further shortened by 33 percent.
  - The worker's OT should be measured at the end of the rest period to make sure that it has decreased to less than 99oF.
  - At no time will any worker be permitted to begin work with an OT greater than 99oF.

### **6.2.6 Pinch/Compression Points**

Handling of tools, machinery, and other equipment on site may expose personnel to pinch/compression point hazards during normal work activities. Where applicable, equipment will have intact and functional guarding to prevent personnel contact with hazards. Personnel will exercise caution when working around pinch/compression points, using additional tools or devices (e.g., pinch bars) to assist in completing activities.

## **6.3 NATURAL HAZARDS**

Natural hazards such as poisonous plants, bites from poisonous or disease carrying animals or insects (e.g., snakes, ticks, mosquitoes) are often prevalent at sites that are being investigated as part of hazardous waste site operations. To minimize the potential for site personnel to encounter these

hazards, nesting areas in and about work areas will be avoided to the greatest extent possible. Work areas will be inspected to look for any evidence that dangerous animals may be present.

During warm months (spring through early fall), tick-borne Lyme Disease may pose a potential health hazard. The longer a disease carrying tick remains attached to the body, the greater the potential for contracting the disease. Wearing long sleeved shirts and long pants (tucked into boots and taped) will prevent initial tick attachment, while performing frequent body checks will help prevent long term attachment. Site first aid kits should be equipped with medical forceps and rubbing alcohol to assist in tick removal. For information regarding tick removal procedures and symptoms of exposure, consult Section 4.0 of the HSGM.

West Nile Virus (WNV) and other mosquito-borne diseases may occur when an infected mosquito sucks blood from a person. About one in 150 people infected with WNV will develop severe illness. Severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent. Up to 20 percent of the people who become infected have symptoms such as fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days, though even healthy people have become sick for several weeks. Approximately 80 percent of people (about 4 out of 5) who are infected with WNV will not show any symptoms at all.

Although no longer common in the United States, malaria may occur when a mosquito or other infected insect sucks blood from an infected person, and the insect becomes the carrier to infect other hosts. The parasite reproduces within the mosquito, and is then passed on to another person through the biting action. Acute symptoms include chills accompanied by fever and general flu-like symptoms. This generally terminates in a sweating stage. These symptoms may recur every 48 to 72 hours.

Contact with poisonous plants and bites or stings from poisonous insects are other potential natural hazards. Long sleeved shirts and long pants (tucked into boots), and avoiding potential nesting areas, will minimize the potential for exposure. Additionally, insect repellents may be used by site personnel. Personnel who are allergic to stinging insects (such as bees, wasps and hornets) must be particularly careful since severe illness and death may result from allergic reactions. As with any medical condition or allergy, information regarding the condition must be listed on the Medical Data Sheet (see Attachment I of this HASP), and the FOL or SSO notified.

In general, avoidance of areas of known infestation or growth will be the preferred exposure control for insects/animals and poisonous plants. Specific discussion on principle hazards of concern follows.

### **6.3.1 Inclement Weather**

Project tasks under this SOW will be performed outdoors. As a result, inclement weather may be encountered. In the event that adverse weather conditions arise (electrical storms, strong wind, hail, etc.), the FOL and/or the SSO will be responsible for temporarily suspending or terminating activities until hazardous conditions no longer exist.

## **7.0 HAZARD MONITORING – TYPES AND ACTION LEVELS**

To assure that exposures are avoided and documented, direct reading instruments will be used to monitor worker exposures to chemical hazards present at the site.

### **7.1 PHOTOIONIZATION DETECTOR**

To detect VOCs a photoionization Detector (PID) will be used to monitor air during intrusive site activities.

#### **7.1.1 Instrument Action Level:**

Four exposures of 5 minutes at 10 ppm in any in ANY ONE work day.

#### **7.1.2 Instrument Overview and Use**

The PID will be used primarily to monitor source points and worker breathing zone areas, while observing instrument action levels. The SSO shall obtain and document the daily background (BG) reading at an upwind, unaffected area and observe for readings above that BG level. The SSO shall monitor source areas (e.g., piping hook-ups and sampling areas) for the presence of any reading above the daily-established BG level. If the appropriate instrument Action Level is exceeded (see above), the following process will be followed:

- The SSO shall order all personnel to stop work and retreat upwind to a safe, unaffected area, where they will remain until further directed by the SSO.
- The SSO shall allow at least 5 minutes to pass so that the work area can ventilate, and will then re-approach the work area while continuously monitoring the BZ areas.
- Only when BG levels are regained in BZ areas will work be permitted to resume.
- If BG levels are not regained, the SSO will contact the HSM for additional direction.

### **7.3 INSTRUMENTS MAINTENANCE AND CALIBRATION**

Hazard monitoring instruments will be maintained and pre-field calibrated. Operational checks and field calibration will be performed on site instruments each day prior to their use. Field calibration will be performed on instruments according to manufacturer's recommendations. These operational checks and calibration efforts will be performed in a manner that complies with the employees health and safety training, the manufacturer's recommendations, and with the applicable manufacturer standard operating

procedure (which the SSO must assure are included with the instrument upon its receipt onsite). Field calibration efforts must be documented. Figure 7-1 is provided for documenting these calibration efforts. This information may instead be recorded in a field operations logbook, provided that the information specified in Figure 7-1 is recorded. This required information includes the following:

- Date calibration was performed
- Individual calibrating the instrument
- Instrument name, model, and serial number
- Any relevant instrument settings and resultant readings (before and after) calibration
- Identification of the calibration standard (lot no., source concentration, supplier)
- Any relevant comments or remarks

#### **7.4 DOCUMENTING INSTRUMENT READINGS**

The SSO is responsible for ensuring that air monitoring instruments are used in accordance with the specifications of this HASP and with manufacturer's specifications/recommendations. In addition, the SSO is also responsible for ensuring that all instrument use is documented. This requirement can be satisfied either by recording instrument readings on pre-printed sampling log sheets or in a field log book. This includes the requirement for documenting instrument readings that indicate no elevated readings above noted daily background levels (i.e., no-exposure readings). At a minimum, the SHSO must document the following information for each use of an air monitoring device:

- Date, time, and duration of the reading
- Site location where the reading was obtained
- Instrument used (e.g., PID, etc.)
- Personnel present at the area where the reading was noted
- Other conditions that are considered relevant to the SSO (such as weather conditions, possible instrument interferences, etc.)



## **8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS**

### **8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING**

Tetra Tech and subcontractor personnel who will engage in field associated activities as described in this HASP must have:

- Completed 40 hours of introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e).
- Completed 8-Hour Refresher Training, if the identified persons had introductory training more than 12 months prior to site work.
- Completed 8-hour Supervisory training in accordance with 29 CFR 1910.120(e)(4), if their assigned function will involve the supervision of subordinate personnel.

Documentation of introductory training or equivalent work experience, supervisory, and refresher training as well as site-specific training will be maintained at the site. Copies of certificates or other official documentation will be used to fulfill this requirement.

### **8.2 SITE-SPECIFIC TRAINING**

Tetra Tech will provide site-specific training to Tetra Tech employees and subcontractor personnel who will perform work on this project.

Figure 8-1 will be used to document the provision and content of the project-specific and associated training. Site personnel will be required to sign this form prior to commencement of site activities.

Tetra Tech will conduct a pre-activities training session prior to initiating site work. Additionally, a brief meeting will be held daily to discuss operations planned for that day. At the end of the workday, a short meeting may be held to discuss the operations completed and any problems encountered.

### **8.3 MEDICAL SURVEILLANCE**

Tetra Tech and subcontractor personnel participating in project field activities will have had a physical examination by a board certified occupational health physician. Physical examinations shall meet the minimum requirements of paragraph (f) of OSHA 29 CFR 1910.120. The physical examinations will be performed to ensure that personnel are medically qualified to perform hazardous waste site work using respiratory protection.

Documentation for medical clearances will be maintained at the job site and made available, as necessary. Subcontractor personnel may use an alternative documentation for this purpose. The "Subcontractor Medical Approval Form" can be used to satisfy this requirement, or a letter from an officer of the company. The letter should state that the persons listed in the letter participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of CFR Part 1910.120, entitled "Hazardous Waste Operations and Emergency Response." The letter should further state the following:

- The persons listed have had physical examinations under this program within the frequency as determined sufficient by their occupational health care provider
- Date of the exam
- The persons identified have been cleared, by a licensed physician, to perform hazardous waste site work.

A sample Subcontractor Medical Approval Form and form letter have been provided to eligible subcontractors in the Bid Specification package.



## **9.0 SPILL PREVENTION AND CONTAINMENT PROGRAM**

### **9.1 SCOPE AND APPLICATION**

It is anticipated that quantities of bulk potentially hazardous materials (greater than 55-gallons) will not be handled during the site activities. It is possible, however, that as the job progresses disposable PPE and other non-reusable items may be generated. As needed, 55-gallon drums will be used to contain unwanted items generated during sampling activities. The drum(s) will be labeled with the site name and address, the type of contents, and the date the container was filled as well as an identified contact person. As warranted, samples will be collected and analyzed to characterize the material and determine appropriate disposal measures. Once characterized the drum(s) will be removed from the staging area and disposed of in accordance with Federal, State and local regulations. Given the likely solid nature of drum contents, a comprehensive Spill Containment Program is not necessary. The following discussion is provided as contingency information only.

### **9.2 POTENTIAL SPILL AREAS**

Potential spill areas will be periodically monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Currently, limited areas are vulnerable to this hazard including:

- Sampling location
- Waste transfer
- Central staging

It is anticipated that the IDW generated as a result of this SOW will be containerized, labeled, and staged to await further analyses. The results of these analyses will determine the method of disposal.

### **9.3 LEAK AND SPILL DETECTION**

To establish an early detection of potential spills or leaks, periodic inspections by the SSO will be conducted during working hours to visually determine that containers are not leaking. If a leak is detected, the first approach will be to transfer the container contents using a hand pump into a new container. Other provisions for the transfer of container contents will be made and appropriate emergency contacts will be notified, if necessary. In most instances, leaks will be collected and contained using absorbents such as Oil-dry, vermiculite, and/or sand, which may be stored at the staging area in a conspicuously marked drum. This material too, will be containerized for disposal pending analyses. Inspections will be documented in the Project Logbook.

#### **9.4 PERSONNEL TRAINING AND SPILL PREVENTION**

Site personnel will be instructed on the procedures for spill prevention, containment, and collection of hazardous materials in the site-specific training. The FOL and/or the SSO will serve as the Spill Response Coordinator for this operation should the need arise.

#### **9.5 SPILL PREVENTION AND CONTAINMENT EQUIPMENT**

The following represents the types of equipment that may be maintained at the staging area for the purpose of supporting this Spill Containment Program (depending on the likelihood that drums and/or liquid wastes are generated):

- Sand, clean fill, vermiculite, or other noncombustible absorbent (oil-dry);
- Drums (55-gallon U.S. Department of Transportation [DOT] 1A1 or 1A2)
- Shovels, rakes, and brooms
- Labels

#### **9.6 SPILL CONTROL PLAN**

This section describes the procedures the Tetra Tech field crewmembers will employ upon the detection of a spill or leak.

- Notify the SSO or FOL immediately.
- Take immediate actions to stop the leak or spill by plugging or patching the drum or raising the leak to the highest point. Avoid contacting drum contents. Spread the absorbent material in the area of the spill covering completely.

It is not anticipated that a spill will occur in which the field crews cannot handle. Should this occur; however, the FOL or SSO will notify appropriate emergency response agencies.

#### **9.7 NATIONAL RESPONSE CENTER**

The National Response Center (NRC) is the sole Federal point of contact for reporting hazardous spills and discharges, whether they are oil, chemical, radioactive, or other types. The NRC gathers information about the emergency and coordinates the response by government officials. For example, depending on the nature of the spill or environmental hazard, the NRC typically contacts the EPA for inland oil spills and the United States Coast Guard for marine oil spills. The Hotline is staffed 24-hours a day. If Tetra Tech or subcontractor personnel are involved in or witness an environmental emergency that presents a sudden threat to public health, the National Response Center must be called at (800) 424-8802.

## **10.0 SITE OPERATIONS AND CONTROL**

This section outlines the means by which Tetra Tech will delineate work zones and use these work zones in conjunction with decontamination procedures to prevent the spread of contaminants into previously unaffected areas of the site. It is anticipated that a fractured three-zone approach will be used during work at this site. This three zone approach will utilize an exclusion zone, a contamination reduction zone, and a support zone. It is also anticipated that this control measure will be used to control access to site work areas. Use of such controls will restrict the general public, minimize the potential for the spread of contaminants, and protect individuals who are not cleared to enter work areas.

### **10.1 EXCLUSION ZONE**

The exclusion zone will be considered the areas of the site of known or suspected contamination. It is anticipated that the areas around intrusive field activities will have the potential for contaminants to be brought to the surface. These areas will be marked and personnel will maintain safe distances. Once intrusive field activities have been completed and any surface contamination has been removed, the potential for exposure is again diminished and the area can then be reclassified as part of the contamination reduction zone. Therefore, the exclusion zones for this project will be limited to those areas of the site where intrusive field activities are being performed plus a designated area of at least 15 feet surrounding the work area. Exclusion zones will be delineated as deemed appropriate by the FOL, through means such as erecting visibility fencing, barrier tape, cones, and/or postings to inform and direct personnel.

Subsurface activities will proceed only when utility clearance has been obtained. In the event that a utility is struck during a subsurface investigative activity, the emergency numbers provided in Section 2.0, Table 2-1, will be notified.

### **10.2 CONTAMINATION REDUCTION ZONE**

The contamination reduction zone (CRZ) will be a buffer area between the exclusion zone and any area of the site where contamination is not suspected. This area will also serve as a focal point in supporting exclusion zone activities. This area will be delineated using barrier tape, cones, and postings to inform and direct facility personnel. Decontamination will be conducted at a central location. Equipment potentially contaminated will be bagged and taken to that location for decontamination.

### **10.3 SUPPORT ZONE**

The support zone for this project will include a staging area where site vehicles will be parked, equipment will be unloaded, and where food and drink containers will be maintained. The support zones will be established at areas of the site where exposure to site contaminants would not be expected during normal working conditions or foreseeable emergencies.

### **10.4 ACTIVITY HAZARD ANALYSIS**

The work conducted in support of this project will be performed using AHAs (see Attachment III) to guide and direct field crews on a task by task basis. It is the FOL/SSO responsibility to review the AHAs with the task participants as part of a pre-task tail gate briefing session. This ensures that site-specific considerations and changing conditions are appropriately incorporated into the AHA, provide the SSO with a structured format for conducting the tail gate sessions, as well will also give personnel an opportunity to ask questions and make suggestions.

### **10.5 SITE VISITORS**

Potential site visitors that may be encountered during the performance of the field work could include the following:

- Personnel invited to observe or participate in operations by Tetra Tech.
- Regulatory personnel (i.e., Department of Defense [DOD], U.S. EPA, OSHA, etc.)
- Navy personnel
- Other authorized visitors

Non-DOD personnel working on this project are required to gain initial access to the site by coordinating with the Tetra Tech PM or designee and following established site access procedures.

Once access to the site is obtained, personnel who require access to Tetra Tech work sites (areas of ongoing operations) will be required to obtain permission from the FOL and the Site Contact. Upon gaining access to the work site, site visitors wishing to observe operations in progress will be required to meet the minimum requirements as stipulated below.

- Site visitors will be routed to the FOL, who will sign them into the field logbook. Information to be recorded in the logbook will include the individuals name (proper identification required), who they represent, and the purpose for the visit.

- The FOL is responsible for ensuring that site visitors are always escorted while on site.
- Site visitors will be required to produce the necessary information supporting clearance on to the site. This includes information attesting to applicable training (40-hours of HAZWOPER training required for Navy Personnel), and medical surveillance as stipulated in Section 8.3, of this document.
- In addition, to enter the sites operational zones during planned activities, visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this HASP.

Once the site visitors have completed the above items they will be permitted to enter the site and applicable operational areas. Visitors are required to observe the protective equipment and site restrictions in effect at the work areas visited. Any visitors not meeting the requirements as stipulated in this plan for site clearance will not be permitted to enter the site operational zones during planned activities. Any incidence of unauthorized site visitation will cause on-site activities to be terminated until that visitor can be removed. Removal of unauthorized visitors will be accomplished with support from the Site Contact, if necessary. At a minimum, the Site Contact will be notified of any unauthorized visitors.

#### **10.6 SITE SECURITY**

Site security will be accomplished using Tetra Tech field personnel. Security at this site will take place at the work site. Visitors and other parties will be referred to the FOL and Site Contact.

Security at the work areas will be accomplished using field personnel. This is a multiple person operation, involving multiple operational zones. Tetra Tech personnel will retain complete control over active operational zones. The Site Contact will serve as the focal point for site personnel and interested parties and will serve as the primary enforcement contact.

#### **10.7 BUDDY SYSTEM**

Personnel engaged in site activities will practice the "buddy system" to ensure the safety of the personnel involved in this operation. To comply with this provision when only one person visits the site, it is their responsibility to inform the PM of their arrival and departure from the site.

#### **10.8 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS**

Tetra Tech and subcontractor personnel will provide MSDSs for the chemicals brought on site. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances prior to any actual use or application of the substances on site.

A chemical inventory of the chemicals used on site will be developed using the HSGM. The MSDSs will then be maintained in a central location (i.e., temporary office) and will be available for anyone to review upon request.

## **10.9      COMMUNICATION**

As personnel will be working in proximity to one another during field activities, a supported means of communication between field crew members will not be necessary.

External communication will be accomplished by using cellular telephones at approved locations. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of activities at the site, it is strongly recommended that cell signal strength be checked in the work areas and the relevant project phone numbers are programmed on site worker cell phones.

Emergency numbers listed in Table 2-1 should be entered into site cell phones prior the beginning of work. The FOL will determine and arrange for telephone communication procedures.

## **11.0 CONFINED SPACE ENTRY**

It is not anticipated, under the proposed SOW, that confined space and permit-required confined space activities will be conducted. Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter confined spaces.

For further information on confined space, consult the HSGM or call the PHSO. If confined space operations are to be performed as part of the scope of work, detailed procedures and training requirements will have to be addressed, and the HSM will have to be notified.

## 12.0 MATERIALS AND DOCUMENTATION

The Tetra Tech Field Operations Leader (FOL) shall ensure the following materials/documents are taken to the project site and used when required.

- A complete copy of this HASP
- HSGM
- Incident Reports
- Medical Data Sheets
- Material Safety Data Sheets for chemicals brought on site, including decontamination solutions, fuels, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (posted in the site trailer), see Attachment V
- Training/Medical Surveillance Documentation Form (Blank)
- First-Aid Supply Usage Form
- Emergency Reference Form (Section 2.0, extra copy for posting)
- Directions to the Hospital

### 12.1 MATERIALS TO BE POSTED OR MAINTAINED AT THE SITE

The following documentation is to be posted or maintained at the site for quick reference purposes. In situations where posting these documents is not feasible, (such as no office trailer), these documents should be separated and immediately accessible.

**Chemical Inventory Listing (posted)** - This list represents the chemicals brought on-site, including decontamination solutions, sample preservations, fuel, etc. This list should be posted in a central area.

**Material Safety Data Sheets (MSDS) (maintained)** - The MSDSs should also be in a central area accessible to the site personnel. These documents should match the listings on the chemical inventory list for the substances employed on-site. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.

**The OSHA Job Safety & Health Protection Poster (posted)** - this poster, as directed by 29 CFR 1903.2 (a)(1), should be conspicuously posted in places where notices to employees are normally posted. Each FOL shall ensure that this poster is not defaced, altered, or covered by other material.

**Site Clearance (maintained)** - This list is found within the training section of the HASP (See Figure 8-1). It identifies site personnel, dates of training (including site-specific training), and medical surveillance. It

also indicates clearance as well as status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

**Emergency Phone Numbers and Directions to the Hospital(s) (posted)** - This list of numbers and directions will be maintained at the phone communications points and in each site vehicle.

**Medical Data Sheets/Cards (maintained)** - Medical Data Sheets will be filled out by on-site personnel and filed in a central location. The Medical Data Sheet will accompany any injury or illness requiring medical attention to the medical facility.

**Hearing Conservation Standard (29 CFR 1910.95) (posted)** - this standard will be posted anytime hearing protection or other noise abatement procedures are employed.

**Personnel Monitoring (maintained)** - The results generated through personnel sampling (levels of airborne toxins, noise levels, etc.) will be posted to inform individuals of the results of that effort.

**Placards and Labels (maintained)** - Where chemical inventories have been separated because of quantities and incompatibilities, these areas will be conspicuously marked using DOT placards and acceptable (Hazard Communication 29 CFR 1910.1200(f)) labels.

The purpose of maintaining or posting this information, as stated above, is to allow site personnel quick access. Variations concerning location and methods of presentation are acceptable, providing the objection is accomplished.

### 13.0 ACRONYMS / ABBREVIATIONS

AHA	Activity Hazard Analysis
BG	Background
BZ	Breathing Zone
C	Centigrade
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CLEAN	Comprehensive Long Term Environmental Action Navy
COC	Contaminant of Concern
CPG	Certified Professional Geologist
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
dBA	Decibel
DOD	Department of Defense
DOT	Department of Transportation
DRI	Direct Reading Instrument
EPA	Environmental Protection Agency
eV	Electron Volts
PID	Flame Ionization Detector
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
LEL/LFL	Lower Explosive Limits / Lower Flammable Limits
MSDS	Material Safety Data Sheet
NAWC	Naval Air Warfare Center
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PG	Professional Geologist
PHSO	Project Health and Safety Officer
PM	Project Manager
PPE	Personal Protective Equipment
SOW	Scope of Work
SSO	Site Safety Officer
SVOCs	Semi-volatile Organic Compounds
TBD	To be determined

US EPA  
WP

United States Environmental Protection Agency  
Work Plan

**ATTACHMENT I**

**MEDICAL DATA SHEET**

## MEDICAL DATA SHEET

This Medical Data Sheet must be completed by on-site personnel and kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project \_\_\_\_\_

Name \_\_\_\_\_ Home Telephone \_\_\_\_\_

Address \_\_\_\_\_

Age \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_

Person to notify in the event of an emergency: Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Drug or other Allergies: \_\_\_\_\_

Particular Sensitivities : \_\_\_\_\_

Do You Wear Contacts? \_\_\_\_\_

What medications are you presently using? \_\_\_\_\_

Name, Address, and Phone Number of personal physician: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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### **Note: Health Insurance Portability and Accountability Act (HIPAA) Requirements**

HIPAA took effect April 14, 2003. Loosely interpreted, HIPAA regulates the disclosure of Protected Health Information (PHI) by the entity collecting that information. PHI is any information about health status (such as that you may report on this Medical Data Sheet), provision of health care, or other information. HIPAA also requires Tetra Tech to ensure the confidentiality of PHI. This Act can affect the ability of the Medical Data Sheet to contain and convey information you would want a Doctor to know if you were incapacitated. So before you complete the Medical Data Sheet understand that this form will not be maintained in a secure location. It will be maintained in a file box or binder accessible to other members of the field crew so that they can accompany an injured party to the hospital.

DO NOT include information that you do not wish others to know, only information that may be pertinent in an emergency situation or treatment.

---

Name (Print clearly) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

**ATTACHMENT II**

**INCIDENT REPORT FORM**

<b>Report Date</b>	<b>Report Prepared By</b>	<b>Incident Report Number</b>
<b>INSTRUCTIONS:</b>		
All incidents (including those involving subcontractors under direct supervision of Tetra Tech personnel) must be documented on the IR Form.		
Complete any additional parts to this form as indicated below for the type of incident selected.		
<b>TYPE OF INCIDENT (Check all that apply)</b>	<b>Additional Form(s) Required for this type of incident</b>	
Near Miss (No losses, but could have resulted in injury, illness, or damage)	<input type="checkbox"/>	Complete IR Form Only
Injury or Illness	<input type="checkbox"/>	Complete Form IR-A; Injury or Illness
Property or Equipment Damage, Fire, Spill or Release	<input type="checkbox"/>	Complete Form IR-B; Damage, Fire, Spill or Release
Motor Vehicle	<input type="checkbox"/>	Complete Form IR-C; Motor Vehicle
<b>INFORMATION ABOUT THE INCIDENT</b>		
<b>Description of Incident</b>		
<hr/> <hr/> <hr/>		
<b>Date of Incident</b>	<b>Time of Incident</b>	
	_____ AM <input type="checkbox"/> PM <input type="checkbox"/> OR Cannot be determined <input type="checkbox"/>	
<b>Weather conditions at the time of the incident</b>	<b>Was there adequate lighting?</b>	
	_____ Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>Location of Incident</b>		
_____ Was location of incident within the employer's work environment? Yes <input type="checkbox"/> No <input type="checkbox"/>		
<b>Street Address</b>	<b>City, State, Zip Code and Country</b>	
<b>Project Name</b>	<b>Client:</b>	
<b>Tt Supervisor or Project Manager</b>	<b>Was supervisor on the scene?</b>	
	Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>WITNESS INFORMATION (attach additional sheets if necessary)</b>		
<b>Name</b>	<b>Company</b>	
<b>Street Address</b>	<b>City, State and Zip Code</b>	
<b>Telephone Number(s)</b>		

CORRECTIVE ACTIONS				
<b>Corrective action(s) immediately taken by unit reporting the incident:</b>				
<hr/> <hr/> <hr/> <hr/>				
<b>Corrective action(s) still to be taken (by whom and when):</b>				
<hr/> <hr/> <hr/> <hr/>				
ROOT CAUSE ANALYSIS LEVEL REQUIRED				
Root Cause Analysis Level Required: Level - 1 <input type="checkbox"/> Level - 2 <input type="checkbox"/> None <input type="checkbox"/>				
Root Cause Analysis Level Definitions				
<b>Level - 1</b>	<p><b>Definition:</b> A Level 1 RCA is conducted by an individual(s) with experience or training in root cause analysis techniques and will conduct or direct documentation reviews, site investigation, witness and affected employee interviews, and identify corrective actions. Activating a Level 1 RCA and identifying RCA team members will be at the discretion of the Corporate Administration office.</p> <p>The following events may trigger a Level 1 RCA:</p> <ul style="list-style-type: none"> <li>▪ Work related fatality</li> <li>▪ Hospitalization of one or more employee where injuries result in total or partial permanent disability</li> <li>▪ Property damage in excess of \$75,000</li> <li>▪ When requested by senior management</li> </ul>			
<b>Level - 2</b>	<p><b>Definition:</b> A Level 2 RCA is self performed within the operating unit by supervisory personnel with assistance of the operating unit HSR. Level 2 RCA will utilize the 5 Why RCA methodology and document the findings on the tools provided.</p> <p>The following events will require a Level 2 RCA:</p> <ul style="list-style-type: none"> <li>▪ OSHA recordable lost time incident</li> <li>▪ Near miss incident that could have triggered a Level 1 RCA</li> <li>▪ When requested by senior management</li> </ul>			
<b>Complete the Root Cause Analysis Worksheet and Corrective Action form. Identify a corrective action(s) for each root cause identified within each area of inquiry.</b>				
NOTIFICATIONS				
Title	Printed Name	Signature	Telephone Number	Date
Project Manager or Supervisor				
Site Safety Coordinator or Office H&S Representative				
Operating Unit H&S Representative				
Other: _____				

The signatures provided above indicate that appropriate personnel have been notified of the incident.



**INSTRUCTIONS:**

Complete all sections below for incidents involving injury or illness.  
Do NOT leave any blanks.  
Attach this form to the IR FORM completed for this incident.

Incident Report Number: (From the IR Form)

**EMPLOYEE INFORMATION**

**Company Affiliation**

Tetra Tech Employee?  TetraTech subcontractor employee (directly supervised by Tt personnel)?

Full Name

Company (if not Tt employee)

Street Address, City, State and Zip Code

Address Type

Home address (for Tt employees)

Business address (for subcontractors)

**Telephone Numbers**

Work: \_\_\_\_\_ Home: \_\_\_\_\_ Cell: \_\_\_\_\_

Occupation (regular job title)

Department

Was the individual performing regular job duties?

Yes  No

Time individual began work

\_\_\_\_\_ AM  PM  OR Cannot be determined

**Safety equipment**

Provided? Yes  No

Used? Yes  No  If no, explain why

- Type(s) provided:
- Hard hat
  - Protective clothing
  - Gloves
  - High visibility vest
  - Eye protection
  - Fall protection
  - Safety shoes
  - Machine guarding
  - Respirator
  - Other (list)

**NOTIFICATIONS**

Name of Tt employee to whom the injury or illness was first reported

Was H&S notified within one hour of injury or illness?

Yes  No

Date of report

H&S Personnel Notified

Time of report

Time of Report

If subcontractor injury, did subcontractor's firm perform their own incident investigation?

Yes  No  If yes, request a copy of their completed investigation form/report and attach it to this report.



INJURY / ILLNESS DETAILS

What was the individual doing just before the incident occurred? Describe the activity as well as the tools, equipment, or material the individual was using. Be specific. Examples: "Climbing a ladder while carrying roofing materials"; "Spraying chlorine from a hand sprayer"; "Daily computer key-entry"

Three horizontal lines for text entry.

What Happened? Describe how the injury occurred. Examples: "When ladder slipped on wet floor and worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; Worker developed soreness in wrist over time"

Four horizontal lines for text entry.

Describe the object or substance that directly harmed the individual: Examples: "Concrete floor"; "Chlorine"; "Radial Arm Saw". If this question does not apply to the incident, write "Not Applicable".

Two horizontal lines for text entry.

MEDICAL CARE PROVIDED

Was first aid provided at the site: Yes [ ] No [ ] If yes, describe the type of first aid administered and by whom?

One horizontal line for text entry.

Was treatment provided away from the site: Yes [ ] No [ ] If yes, provide the information below.

Table with 2 columns: Name of physician or health care professional, Facility Name, Street Address, City State and Zip Code, Telephone Number, Type of Care? (Was individual treated in emergency room?, Was individual hospitalized overnight as an in-patient?, Did the individual die?, Will a worker's compensation claim be filed?)

NOTE: Attach any police reports or related diagrams to this report.

SIGNATURES

I have reviewed this report and agree that all the supplied information is accurate

Table with 4 columns: Affected individual (print), Affected individual (signature), Telephone Number, Date

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.



**INSTRUCTIONS:**

Complete all sections below for incidents involving property/equipment damage, fire, spill or release. Do NOT leave any blanks. Attach this form to the IR FORM completed for this incident.

Incident Report Number: (From the IR Form)

**TYPE OF INCIDENT (Check all that apply)**

Property Damage  Equipment Damage  Fire or Explosion  Spill or Release

**INCIDENT DETAILS**

Results of Incident: Fully describe damages, losses, etc.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response Actions Taken:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Responding Agency(s) (i.e. police, fire department, etc.)

Agency(s) Contact Name(s)

\_\_\_\_\_  
\_\_\_\_\_

**DAMAGED ITEMS (List all damaged items, extent of damage and estimated repair cost)**

Item:	Extent of damage:	Estimated repair cost

**SPILLS / RELEASES (Provide information for spilled/released materials)**

Substance	Estimated quantity and duration	Specify Reportable Quantity (RQ)
		_____ Exceeded? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>

**FIRES / EXPLOSIONS (Provide information related to fires/explosions)**

Fire fighting equipment used? Yes  No  If yes, type of equipment: \_\_\_\_\_

**NOTIFICATIONS**

Required notifications	Name of person notified	By whom	Date / Time
Client: _____ Yes <input type="checkbox"/> No <input type="checkbox"/>			
Agency: _____ Yes <input type="checkbox"/> No <input type="checkbox"/>			
Other: _____ Yes <input type="checkbox"/> No <input type="checkbox"/>			

Who is responsible for reporting incident to outside agency(s)? Tt  Client  Other  Name: \_\_\_\_\_

Was an additional written report on this incident generated? Yes  No  If yes, place in project file.



INSTRUCTIONS:

Complete all sections below for incidents involving motor vehicle accidents. Do NOT leave any blanks. Attach this form to the IR FORM completed for this incident.

Form with sections: Incident Report Number, INCIDENT DETAILS (Name of road, County, City, State, Police/Ambulance response), VEHICLE INFORMATION (Vehicle 1 and 2 details), and Insurance information.



DRIVER INFORMATION						
Vehicle Number 1 – Tetra Tech Vehicle				Vehicle Number 2 – Other Vehicle		
Driver's Name				Driver's Name		
Driver's Address				Driver's Address		
Phone Number				Phone Number		
Date of Birth				Date of Birth		
Driver's License #				Driver's License #		
Licensing State				Licensing State		
Gender		Male <input type="checkbox"/> Female <input type="checkbox"/>		Gender		Male <input type="checkbox"/> Female <input type="checkbox"/>
Was traffic citation issued to Tetra Tech driver? Yes <input type="checkbox"/> No <input type="checkbox"/>				Was traffic citation issued to driver of other vehicle? Yes <input type="checkbox"/> No <input type="checkbox"/>		
Citation #				Citation #		
Citation Description				Citation Description		
PASSENGERS IN VEHICLES (NON-INJURED)						
<p>List all non-injured passengers (excluding driver) in each vehicle.            Driver information is captured in the preceding section.            Information related to persons injured in the accident (non-Tt employees) is captured in the section below on this form.            Injured Tt employee information is captured on FORM IR-A</p>						
Vehicle Number 1 – Tetra Tech Vehicle				Vehicle Number 2 – Other Vehicle		
How many passengers (excluding driver) in the vehicle? ____				How many passengers (excluding driver) in the vehicle? ____		
Non-Injured Passenger Name and Address				Non-Injured Passenger Name and Address		
Non-Injured Passenger Name and Address				Non-Injured Passenger Name and Address		
Non-Injured Passenger Name and Address				Non-Injured Passenger Name and Address		
INJURIES TO NON-TETRATECH EMPLOYEES						
Name of injured person 1				Address of injured person 1		
Age	Gender	Car No.	Location in Car	Seat Belt Used?	Ejected from car?	Injury or Fatality?
	Male <input type="checkbox"/> Female <input type="checkbox"/>			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Injured <input type="checkbox"/> Died <input type="checkbox"/>
Name of injured person 2				Address of injured person 2		
Age	Gender	Car No.	Location in Car	Seat Belt Used?	Ejected from car?	Injury or Fatality?
	Male <input type="checkbox"/> Female <input type="checkbox"/>			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Injured <input type="checkbox"/> Died <input type="checkbox"/>
OTHER PROPERTY DAMAGE						
Describe damage to property other than motor vehicles						
Property Owner's Name				Property Owner's Address		



TETRA TECH, INC.

*Safety Excellence*

TETRA TECH, INC.  
INCIDENT FORM IR-C

COMPLETE AND SUBMIT DIAGRAM DEPICTING WHAT HAPPENED

A large, empty rectangular area with a black border, intended for drawing a diagram depicting what happened during an incident.

**ATTACHMENT III**

**ACTIVITY HAZARD ANALYSIS**

### ACTIVITY HAZARD ANALYSIS

<b>Activity/Work Task:</b> Site Mobilization/Demobilization and GPS System Locating		Overall Risk Assessment Code (RAC) (Use highest code)			<b>M</b>		
<b>Project Location:</b> Former NAWC-Trenton Site 1		<b>Risk Assessment Code (RAC) Matrix</b>					
<b>Contract Number:</b> WE47		<b>Severity</b>	<b>Probability</b>				
Date Prepared: July 10, 2012			Frequent	Likely	Occasional	Seldom	Unlikely
<b>Prepared by:</b> J. Laffey		Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
		Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
<b>Reviewed by:</b> C. Snyder		Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
		Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
<b>Notes: (Field Notes, Review Comments, etc.)</b>		Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
		"Probability" is the likelihood to cause an incident, near miss, or accident and Identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
		"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E= Extremely High Risk</b>	
		Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H= High Risk</b>	
				<b>M= Moderate Risk</b>			
				<b>L= Low Risk</b>			
JOB STEPS	HAZARDS	CONTROLS				RAC	
<ul style="list-style-type: none"> <li>• Assembling equipment and supplies</li> <li>• Performing initial/exit inspections of the intended work areas</li> <li>• Arranging for utilities, site access, notifying appropriate client contacts</li> <li>• Performing equipment inspections of vehicles and equipment arriving/preparing to depart the site</li> <li>• Conducting site geographic surveys</li> </ul>	1. Heavy Equipment	1. Conduct heavy initial site acceptance inspection prior to performing any work at this site. 2. Use the equipment inspection checklist for drill rigs in Attachment IV. 3. Once the equipment passes inspection the AHA for Soil Boring with DPT or DPT will be followed.				<b>L</b>	
	2. Minor cuts, abrasions or contusions	1. Wear cut-resistant gloves when handling items with sharp or rough edges.				<b>M</b>	
	3. Heavy lifting (muscle strains and pulls)	1. Practice safe lifting techniques. 2. Use mechanical lifting devices such as a hand cart or dolly when possible 3. Ensure clear path of travel. 4. Have a good grasp on object. 5. Perform "test lift" to gauge ability to safely make the lift. 6. Lift with legs not back. 7. Obtain help when needed to lift large, bulky, or heavy items).				<b>M</b>	
	4. Vehicular traffic when moving large equipment to the support area	1. Designate and mark vehicle and equipment staging areas. 2. Inform the site personnel of heavy equipment areas and of their responsibility to stay clear of moving vehicles. 3. In high traffic areas, wear a high-visibility vest, shirt or jacket.				<b>M</b>	
	5. Slips, Trips, Falls	1. Watch for tree branches, roots, weeds, limbs and other ground hazards. 2. Wear appropriate foot protection to prevent slips and trips.				<b>M</b>	

**ACTIVITY HAZARD ANALYSIS**

**Site Mobilization/Demobilization and GPS System Locating**

JOB STEPS	HAZARDS	CONTROLS	RAC
		3. Use caution when working on uneven and wet ground surfaces.	
	6. Intermittent high noise levels	1. Site personnel are to wear hearing protection if noise levels are such that they must raise their voice in order to communicate with someone who is within arm's reach (approximately 2 feet) of them. 2. SSO is responsible for determining and designating when hearing protection is required. 3. Hearing protection is to consist of either ear muffs or plugs that have a noise reduction rating (NRR) of at least 25 decibels (dB).	L
	7. Inclement weather	1. The FOL and/or the SSHO will temporarily suspend outside activities in the event of electrical storms or high winds. 2. It is preferred that supported systems such as lightning detection devices or emergency weather broadcasts are employed. 3. When this is not possible field personnel should use the 30/30 Rule: <i>"If there is less than 30 seconds between thunder and lightning go inside and stay inside for at least 30 minutes after the last thunder."</i>	M
	8. Implement Site Specific Hazard Communication Program	1. Complete the chemical inventory for the project. 2. Procure Material Safety Data Sheets (MSDSs) for chemicals used exclusively on this project. 3. Label containers used onsite for hazardous materials. 4. Identification of any additional hazard communication training requirements.	L
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS	
Hand tools (dollies, hand carts, hand knives, etc.)	Visual inspection prior to use by user.	Review of AHA during pre-task tailgate safety briefing with the intended task participants.	
<b>Personal Protective Equipment</b> <b>Minimum:</b> Safety toe boots, safety glasses. Optional items: Hardhat, hearing protection. <b>HTRW:</b> None anticipated for this task.	Initial PPE inspection performed by SSO. Ongoing (prior to each use) inspections responsibilities of PPE users.	PPE training in proper use, care, storage, and limitations. It is anticipated that this has been covered in employees' 40 hour HAZWOPER training, which is to be verified by the SSO through initial training documentation and review prior to permitting personnel to participate in any onsite activities, and will be confirmed by visual observations of worker activities.	

**ACTIVITY HAZARD ANALYSIS**  
**Site Mobilization/Demobilization and GPS System Locating**  
**Page 3 of 3**

I have read and understand this AHA:

<b>Name (Printed)</b>	<b>Signature</b>	<b>Date</b>

### ACTIVITY HAZARD ANALYSIS

<b>Activity/Work Task:</b> Soil borings using HSA or DPT; subsurface soil sampling; piezometer installation	Overall Risk Assessment Code (RAC) (Use highest code)	<b>H</b>	
Project Location: Former NAWC-Trenton Site 1	<b>Risk Assessment Code (RAC) Matrix</b>		
Contract Number: WE47	<b>Severity</b>	<b>Probability</b>	
Date Prepared: July 10, 2012		Frequent      Likely      Occasional      Seldom      Unlikely	
Prepared by: J. Laffey	Catastrophic	<b>E</b> <b>E</b> <b>H</b> <b>H</b> <b>M</b>	
Reviewed by: C. Snyder	Critical	<b>E</b> <b>H</b> <b>H</b> <b>M</b> <b>L</b>	
	Marginal	<b>H</b> <b>M</b> <b>M</b> <b>L</b> <b>L</b>	
	Negligible	<b>M</b> <b>L</b> <b>L</b> <b>L</b> <b>L</b>	
<b>Notes: (Field Notes, Review Comments, etc.)</b>	Step 1: Review each <b>"Hazard"</b> with identified safety <b>"Controls"</b> and determine RAC (See above)		
	"Probability" is the likelihood to cause an incident, near miss, or accident and Identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.		
	<b>RAC Chart</b>		
	"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible		
		<b>E= Extremely High Risk</b>	
		<b>H= High Risk</b>	
		<b>M= Moderate Risk</b>	
		<b>L= Low Risk</b>	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.		
<b>JOB STEPS</b>	<b>HAZARDS</b>	<b>CONTROLS</b>	<b>RAC</b>
DPT/HAS Rig set up and operation  • Positioning Unit (engaging outriggers. etc.)  • Assembling equipment and supplies	1. DPT rig set up and positioning	1. Tetra Tech Standard Operating Procedure (SOP) Utility Locating and Excavation Clearance (HSGM Section 4.0) will be followed	<b>L</b>
	2. Struck By	1. Hard hats and high visibility vests for personnel in work area. 2. Control work area (use flaggers, signage, barricades, and/or other means) and restrict non-essential personnel from the area. 3. Inspect rig and ensure that the equipment, augers, rods and tools will be properly secured during transport.	<b>M</b>
	3. Tip Over	1. Do not permit rig to attempt to traverse severely sloping terrain. 2. Use a ground guide along with a functioning back-up alarm during equipment backing. 3. Once rig is sited, deploy outriggers to properly block and level the rig and secure parking brake.	<b>M</b>
	4. Intermittent high noise levels	1. Site personnel are to wear hearing protection if noise levels are such that they must raise their voice in order to communicate with someone who is within arm's reach (approx. 2') of them. 2. SSO is responsible for determining and designating when hearing protection is required. 3. Hearing protection is to consist of either ear muffs or plugs that have a noise reduction rating (NRR) of at least 25 dB.	<b>M</b>
	5. Slips, Trips, Falls	1. Clear trees, roots, weeds, limbs and other ground hazards from the drill location. 2. Practice good housekeeping to keep the ground around the drill site clear of obstructions, equipment and other tripping hazards. 3. Wear appropriate foot protection to prevent slips and trips. Use caution when	<b>M</b>

**ACTIVITY HAZARD ANALYSIS**  
**Soil Borings Using HSA or DPT, Subsurface Soil Sampling, Piezometer Installation**  
Page 2 of 5

JOB STEPS	HAZARDS	CONTROLS	RAC
		working on uneven and wet ground surfaces.	
	6. Minor cuts, or abrasions	1. When handling equipment and tools wear cut-resistant gloves when handling items with sharp or rough edges.	<b>M</b>
	7. Heavy lifting (muscle strains and pulls)	1. Practice safe lifting techniques (use mechanical lifting devices such as a dolly whenever possible. 2. Ensure clear path of travel, good grasp on object, perform "test lift" to gauge ability to safely make the lift. 3. Lift with legs, obtain help to lift large, bulky, or heavy items.	<b>L</b>
	8. Insect bites	1. Shake out boots before donning. 2. Use insect repellants (products containing DEET should be applied to exposed skin, products containing Permethrin should be applied to clothing only. Follow manufacturer's recommendations for application). 3. Tape up pants leg to work boot joints with duct tape. 4. Wear light-colored clothing to better see and remove any insects. 5. Perform close body inspections at least daily upon leaving the site.	<b>L</b>
	9. Inclement weather	1. If electrical storms or inclement weather are in the area, as determined through local forecasting or weather alerts issued, the SSO will suspend outside activities. 2. The 30-30 rule shall be applied, which is "if a time interval of 30 seconds or less is between lightning and its thunder, go inside (building/vehicle) and stay inside for at least 30 minutes." 3. If no additional lightning and/or thunder is noted within this 30 minutes, work may resume at the SSO's direction. 4. Personnel will be directed to seek suitable shelter that will provide adequate protection from the elements.	<b>M</b>
DPT/HSA Operations	1. Intermittent high noise levels	1. Operators/nearby personnel are to wear hearing protection if noise levels are such that they must raise their voice in order to communicate with someone who is within arm's reach (approx. 2') of them. 2. FOL/SSO responsible for determining and designating when hearing protection is required. 3. Hearing protection is to consist of either ear muffs or ear plugs that have an NRR of at least 25 dB.	<b>L</b>
	2. Contact with equipment moving parts	1. Ensure that workers are thoroughly trained and competent to perform their assigned task with the equipment used in investigation. 2. Ensure that back-up alarms are functional on equipment. 3. The equipment operators and Site Supervisors are responsible to ensure that the equipment is properly inspection prior to being permitted onsite. (see Equipment	

**ACTIVITY HAZARD ANALYSIS**  
**Soil Borings Using HSA or DPT, Subsurface Soil Sampling, Piezometer Installation**  
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JOB STEPS	HAZARDS	CONTROLS	RAC
		Inspection Checklist) 4. Ensure that all moving parts are guarded if such parts are exposed. Check/test all emergency stop controls.	
	3. Contact/striking underground or overhead utilities	1. Movement of rig with mast raised will be strictly prohibited. 2. Inspect for buried and overhead utilities in the vicinity of the Drill/DPT location. 3. Verify the location of utility lines in accordance with the Tetra Tech SOP Utility Location and Excavation Clearance. 4. Location and Excavation Clearance. 5. Plan the move with the local utility companies if utility lines must be moved. 6. Pre-survey the height of equipment and height of utility lines to determine which lines must be removed or raised. 7. Equipment should not come within 20 feet of existing overhead utility lines.	L
	4. Pressurized hydraulic lines could rupture, causing release of hot hydraulic fluid.	1. Inspect all hydraulic lines before placing rig in service. 2. Any damaged hoses or connections must be replaced before unit is used. 3. Immediately shut down equipment if lines rupture. 4. If rupture occurs, as quickly as possible, berm the liquid to minimize the area over which the liquid spreads. 5. Ensure that all pressurized lines have whip checks.	L
	4. Trip and fall by the borehole	1. Cap and flag open boreholes. 2. If left unattended, protect all open boreholes as any open excavation.	L
Handling drill rods and augers	1. Struck by/entanglement	1. Be prepared for sudden shifting when removing rod sections. 2. Restrict non-essential personnel from approaching working area.	L
	2. Overhead hazards	1. Clear trees, roots, weeds, limbs and other ground hazards from the location. 2. Practice good housekeeping to keep the ground around the site clear of obstructions, equipment and other tripping hazards. 3. Wear appropriate foot protection to prevent slips and trips. 4. Use caution when working on uneven and wet ground surfaces. 5. Keep a wide base and assure secure footing while attempting to handler auger flights and tooling.	L
	3. Slips, Trips, Falls	1. Clear trees, roots, weeds, limbs and other ground hazards from the location. 2. Practice good housekeeping to keep the ground around the site clear of obstructions, equipment and other tripping hazards. 3. Wear appropriate foot protection to prevent slips and trips. Use caution when working on uneven and wet ground surfaces. Keep a wide base and assure secure footing while attempting to handler auger flights and tooling.	L
	4. Contusions, cuts, or abrasions	1. When handling auger flights and tools, wear cut-resistant heavy cotton or leather work gloves when handling items with sharp or rough edges.	M

**ACTIVITY HAZARD ANALYSIS**  
**Soil Borings Using HSA or DPT, Subsurface Soil Sampling, Piezometer Installation**  
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JOB STEPS	HAZARDS	CONTROLS	RAC
	5. Heavy lifting (muscle strains and pulls).	<ol style="list-style-type: none"> <li>1. Practice safe lifting techniques by using mechanical lifting devices such as a two-wheeled cart or dolly whenever possible.</li> <li>2. Ensure clear path of travel</li> <li>3. Have a good grasp on object.</li> <li>4. Perform "test lift" to gauge ability to safely make the lift.</li> <li>5. Lift with legs not back.</li> <li>6. Obtain help when needed to lift large, bulky, or heavy items</li> </ol>	<b>L</b>
Soil and groundwater sampling	1. Chemical exposure	<ol style="list-style-type: none"> <li>1. Wear surgeons' gloves when handling potentially-contaminated media and samples.</li> <li>2. Avoid contact with potentially-contaminated media to the extent possible.</li> <li>3. Practice good personal hygiene (hands and face washing) when exiting work area.</li> <li>4. Hand-to-mouth activities in the work area are prohibited (eating, drinking, smoking).</li> <li>5. Exposure via dermal contact and ingestion represent some limited concern during this task.</li> <li>6. Periodically screen sample with monitoring equipment.</li> <li>7. If readings above daily-established background levels (BGLs) are noted in borehole, monitor worker breathing zone (BZ) areas.</li> <li>8. If readings in worker BZ areas exceed the action level: <ul style="list-style-type: none"> <li>• After at least 5 minutes, FOL/SSO will approach from upwind direction screening BZ areas.</li> </ul> Work may resume when readings in the BZ return to BGLs. </li> <li>9. For metals area wetting methods will be employed to suppress dust.</li> <li>10. For VOC's, SVOCs a PID with a 10.6ev lamp will be used to monitor the breathing zone. <ul style="list-style-type: none"> <li>• PID Action Level: 10 ppm above BG in BZ areas for 4 exposures of no more than 5 minutes in any one work day.</li> </ul> </li> </ol>	<b>L</b>
	2. Cuts and lacerations – when cutting acetate liners without the proper material handling devices.	<ol style="list-style-type: none"> <li>1. Always cut away from yourself and others.</li> <li>2. Do not place items to be cut in your hand or on your knee.</li> <li>3. Change blades as necessary to maintain a sharp cutting edge as many accidents result dull cutting attachments.</li> <li>4. Wear cut-resistant gloves (leather or heavy cotton) at least on the non-knife/saw hand, where possible.</li> <li>5. When cutting acetate liners use the tubing retention tub to secure the tube.</li> <li>6. Use the knife intended for that purpose. (Geoprobe® makes a kit for this purpose).</li> </ol>	<b>M</b>

**ACTIVITY HAZARD ANALYSIS**  
**Soil Borings Using HSA or DPT, Subsurface Soil Sampling, Piezometer Installation**  
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EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>HSA Drill Rig, bore rods, auger flights, sharp knives, hand tools (dollies, hand carts, etc.), ventilation fan</p> <p><b>Safety Equipment:</b></p> <ul style="list-style-type: none"> <li>• A 20-pound dry chemical ABC fire extinguisher readily available.</li> <li>• Spill-control kit available at drilling location.</li> <li>• First-aid kit, eyewash, and an emergency air horn nearby.</li> <li>• Portable eye wash bottle.</li> </ul> <p><b>Monitoring Instruments:</b> none</p>	<p>Visual inspection prior to use by user.</p>	<ol style="list-style-type: none"> <li>1. Review of AHA during pre-task tailgate safety briefing with the intended task participants.</li> <li>2. Personnel must be trained in use of drilling equipment.</li> <li>3. The drill operator must have current certifications to operate the equipment.</li> <li>4. Review operating manuals of monitoring instruments.</li> </ol>
<p><b>Personal Protective Equipment: <u>Minimum:</u></b> Safety toe boots, safety glasses, work gloves. <b><u>Optional items:</u></b> Hardhat, hearing protection. nitrile surgeon's style gloves and Tyvek if there is a change to soil clothing. <b><u>HTRW:</u></b> VOCs</p>	<p>Initial PPE inspection performed by SSO. Ongoing (prior to each use) inspections responsibilities of PPE users.</p>	<p>PPE training in proper use, care, storage, and limitations. It is anticipated that this has been covered in employees' 40 hour HAZWOPER training, which is to be verified by the SSO through initial training documentation and review prior to permitting personnel to participate in any onsite activities, and will be confirmed by visual observations of worker activities.</p>

I have read and understand this AHA:

Name (Printed)	Signature	Date

### ACTIVITY HAZARD ANALYSIS

<b>Activity/Work Task:</b> Groundwater Level Measurements; Groundwater sampling; Surface water sampling and piezometer development	Overall Risk Assessment Code (RAC) (Use highest code)				<b>M</b>	
<b>Project Location:</b> Former NAWC-Trenton Site 1	<b>Risk Assessment Code (RAC) Matrix</b>					
<b>Contract Number:</b> WE47	<b>Severity</b>	<b>Probability</b>				
<b>Date Prepared:</b> July 10, 2012		Frequent	Likely	Occasional	Seldom	Unlikely
<b>Prepared by:</b> J. Laffey	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
<b>Reviewed by:</b> C. Snyder	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
<b>Notes: (Field Notes, Review Comments, etc.)</b>	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and Identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
	"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E= Extremely High Risk</b>	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H= High Risk</b>	
		<b>M= Moderate Risk</b>			<b>L= Low Risk</b>	
<b>JOB STEPS</b>	<b>HAZARDS</b>	<b>CONTROLS</b>			<b>RAC</b>	
Site Set Up	1. Inclement weather	1. If electrical storms or inclement weather are in the area, as determined through local forecasting or weather alerts issued, the SSO will suspend outside activities. 2. The 30-30 rule shall be applied, which is "if a time interval of 30 seconds or less is between lightning and its thunder, go inside (building/vehicle) and stay inside for at least 30 minutes." 3. If no additional lightning and/or thunder is noted within this 30 minutes, work may resume at the SSO's direction. 4. Personnel will be directed to seek suitable shelter that will provide adequate protection from the elements.			<b>M</b>	
	2. Minor cuts abrasions handling equipment and tools	1. Wear cut-resistant gloves when handling items with sharp or rough edges.			<b>L</b>	
	3. Slips, Trips, Falls	1. Clear intended work areas and walking paths of roots, weeds, limbs and other ground hazards. 2. Practice good housekeeping to keep the site clear of obstructions, materials, equipment and other tripping hazards. 3. Ensure that work boots have adequately-aggressive sole design. 4. Use caution when working on uneven and wet ground.			<b>L</b>	
	4. Insect bites, snake bites, and contact with poisonous plants.	1. Shake out boots before donning. 2. Use insect repellants. Products containing DEET should be applied to exposed skin. Products containing Permethrin should be applied to clothing only. Follow manufacturer's recommendations.			<b>L</b>	

**ACTIVITY HAZARD ANALYSIS**

**Groundwater Level Measurements, Groundwater Sampling**

JOB STEPS	HAZARDS	CONTROLS	RAC
		<ol style="list-style-type: none"> <li>3. Tape up pants leg to work boot joints with duct tape and wear light-colored clothing to better see and remove any insects.</li> <li>4. Avoid potential nesting areas (brush, deadfall, etc.) where insects or snakes may be present. Perform close body inspections at least daily upon leaving the site.</li> </ol>	
<p>Piezometer development</p> <p>Groundwater sampling using a small battery-operated pump and placing into sample containers</p>	<ol style="list-style-type: none"> <li>1. Exposure to contaminants of concern</li> </ol>	<ol style="list-style-type: none"> <li>1. Wear surgeon's gloves when handling potentially-contaminated media and samples.</li> <li>2. Avoid contact with potentially-contaminated media to the extent possible.</li> <li>3. Follow good decontamination and practice good personal hygiene (hands and face washing) when exiting work area.</li> <li>4. Hand-to-mouth activities in the work area will be prohibited (eating, drinking, smoking, etc.).</li> <li>5. Exposure via dermal contact and ingestion represent some limited concern during this task.</li> </ol>	<b>L</b>
<p>Surface water sampling from storm sewer manholes and downstream at the outfall to Gold Run and moving upstream with a pole and a disposable collection bottle</p>	<ol style="list-style-type: none"> <li>1. Slips, trips, falls</li> </ol>	<ol style="list-style-type: none"> <li>1. Avoid tree roots, snags and large rocks</li> <li>2. Practice good housekeeping to keep the site clear of obstructions, materials, equipment and other tripping hazards.</li> <li>3. Ensure that work boots have adequately-aggressive sole design.</li> <li>4. Use caution when working on uneven and wet ground.</li> </ol>	<b>M</b>
	<ol style="list-style-type: none"> <li>2. Heavy lifting (muscle strains and pulls)</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify an escape route in order to evacuate immediately if/when strong odors or irritation noted.</li> <li>2. Use appropriate mechanical assistance and tools to pry and lift off covers.</li> <li>3. Wear activity appropriate PPE such as leather gloves, to lift manhole cover.</li> <li>4. Use proper ergonomics when lifting heavy objects</li> <li>5. Lift with legs</li> <li>6. Use caution when opening manhole covers, watch for biting insects.</li> <li>7. Use long handle sampling device or a sampling line to attach to collection bottle.</li> <li>8. Do not break the plane enter the manhole with any part of the body.</li> </ol>	<b>M</b>
	<ol style="list-style-type: none"> <li>3. Traffic</li> </ol>	<ol style="list-style-type: none"> <li>1. Be alert, secure area from through traffic with safety cones, tape and signs</li> <li>2. Wear high visibility clothing</li> <li>3. Prior to removing manhole covers, coordinate with local road department to determine local regulations on the appropriate signage, barricades, and traffic.</li> </ol>	<b>M</b>
	<ol style="list-style-type: none"> <li>4. Chemical exposure to</li> </ol>	<ol style="list-style-type: none"> <li>1. Wear surgeons gloves when handling potentially-contaminated media and</li> </ol>	<b>L</b>

**ACTIVITY HAZARD ANALYSIS**

**Groundwater Level Measurements, Groundwater Sampling**

JOB STEPS	HAZARDS	CONTROLS		RAC
	low concentrations of COCs.	samples 2. Avoid contact with potentially-contaminated media to the extent possible 3. Follow good decontamination and practice good personal hygiene (hands and face washing) when exiting work area 4. Hand-to-mouth activities in the work area are prohibited (eating, drinking, smoking, etc.). 5. Exposure via dermal contact and ingestion represent some limited concern during this task. 6. Use PPE to control this hazard. 7. Periodically screen sample with monitoring equipment. 8. If readings above daily-established background levels (BGLs) are noted in borehole, monitor worker breathing zone (BZ) areas. 9. If readings in worker BZ areas exceed the action level: 10. After at least 5 minutes, FOL/SSO will approach from upwind direction screening BZ areas. 11. Work may resume when readings in the BZ return to BGLs. 12. For metals area wetting methods will be employed to suppress dust. 13. For VOC's, SVOCs a PID with a 10.6ev lamp will be used to monitor the breathing zone. 14. PID Action Level: 10 ppm above BG in BZ areas for 4 exposures of no more than 5 minutes in any one work day.		
<b>EQUIPMENT</b>		<b>INSPECTION</b>	<b>TRAINING</b>	
Crow bars, lifting hooks, sample collection tools and containers (jars, spatulas, spoons, etc.) <b>Safety Equipment:</b> Portable eye wash bottle <b>Monitoring Instruments:</b> none		Visual inspection prior to use by user.	Training/experience in proper sample collection, handling and chain of custody requirements.	
<b>Personal Protective Equipment: <u>Minimum:</u></b> nitrile surgeon's type gloves, safety toe boots, safety glasses <b><u>Optional items:</u></b> Hardhat, hearing protection. If sampling done concurrently with DPT, observe DPT AHA PPE as well. If contact with contaminants is likely, wear chemical-resistant coveralls (e.g., Tyvek) or aprons and surgeon's		Initial PPE inspection performed by SSO. Ongoing (prior to each use) inspections responsibilities of PPE users.	OSHA 40 hour HAZWOPER training, plus appropriate 8-hour annual refresher training for the task participants. Supervisors must have completed additional 8 hours of HAZWOPER training. ALSO: Review of AHA during pre-task tailgate safety briefing with the intended task participants.  PPE training in proper use, care, storage, and limitations. It is anticipated that this has been covered in employees' 40 hour	

**ACTIVITY HAZARD ANALYSIS**

**Groundwater Level Measurements, Groundwater Sampling**

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<b>EQUIPMENT</b>	<b>INSPECTION</b>	<b>TRAINING</b>
nitrile gloves under leather/cotton work gloves. <u>HTRW</u> : VOCs		HAZWOPER training, which is to be verified by the SSO through initial training documentation and review prior to permitting personnel to participate in site activities, and will be confirmed by visual observations of worker activities.

I have read and understand this AHA:

<b>Name (Printed)</b>	<b>Signature</b>	<b>Date</b>

## ACTIVITY HAZARD ANALYSIS

<b>Activity/Work Task:</b> Decontamination		Overall Risk Assessment Code (RAC) (Use highest code)				<b>L</b>	
<b>Project Location:</b> Former NAWC-Trenton Site 1		<b>Risk Assessment Code (RAC) Matrix</b>					
<b>Contract Number:</b> WE47		<b>Severity</b>	<b>Probability</b>				
<b>Date Prepared:</b> July 10, 2012			Frequent	Likely	Occasional	Seldom	Unlikely
<b>Prepared by:</b> J. Laffey		Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
<b>Reviewed by:</b> C. Snyder		Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
		Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
<b>Notes: (Field Notes, Review Comments, etc.)</b>		Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
		Step 1: Review each <b>"Hazard"</b> with identified safety <b>"Controls"</b> and determine RAC (See above) <b>"Probability"</b> is the likelihood to cause an incident, near miss, or accident and Identified as: Frequent, Likely, Occasional, Seldom, or Unlikely. <b>"Severity"</b> is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each <b>"Hazard"</b> on AHA. Annotate the overall highest RAC at the top of AHA.					<b>RAC Chart</b> <b>E= Extremely High Risk</b> <b>H= High Risk</b> <b>M= Moderate Risk</b> <b>L= Low Risk</b>
JOB STEPS	HAZARDS	CONTROLS					RAC
Personal Decontamination  • Equipment drop • Segregated removal of PPE (wash and rinse reusable items, dispose of non-reusable items)	1. Slips, Trips, Falls	1. Clear intended decon area location of ground hazards. 2. Practice good housekeeping to keep the site clear of obstructions, materials, equipment and other tripping hazards. 3. Wear appropriate foot protection to prevent slips and trips. 4. Use caution when working on uneven and wet surfaces					<b>L</b>
	2. Exposure to contaminated media	1. Follow good decontamination practices (work from top down and outside in). 2. Nitrile gloves are to be the last item of PPE removed. 3. Wash hands and face following personal decontamination and prior to performing any hand-to-mouth activity.					<b>L</b>
Decontamination heavy equipment and large tools (e.g., vehicles, etc.) using pressure washer	1. Noise	1. Pressure washer operator must wear hearing protection (muffs or plugs with NRR of at least 25 dB)					<b>L</b>
	2. Flying projectiles	1. Restrict other personnel from decon pad during pressure washing operations. 2. Pressure washer operator must exercise care when directing the wand so that it is not pointing at himself/herself or at any other worker. 3. Pressure washer operator must wear full face shield over safety glasses with side shields and brow protection. 4. At SSO discretion, additional PPE consisting of hardhat, rainsuit, apron, and or boot covers may be required during decon operations - depending on observations indicating that significant contact with decon overspray and/or windy conditions during washing activities.					<b>L</b>

**ACTIVITY HAZARD ANALYSIS**

**Decontamination**

JOB STEPS	HAZARDS	CONTROLS	RAC
	3. Falling objects	1. Place items to be decontaminated on ground or on washing/drying racks in a manner that they are secure and will not fall. 2. Wear safety toe safety footwear.	L
	4. Strains/sprains from heavy lifting	1. Practice safe lifting techniques (use mechanical lifting devices such as a dolly whenever possible, ensure clear path of travel, good grasp on object, perform "test lift" to gauge ability to safely make the lift, lift with legs not back, obtain help when needed to lift large, bulky, or heavy items).	L
	5. Slips/trips/falls	1. Keep decon areas orderly, maintain good housekeeping, spread light coating of sand on decon pad liner to increase traction.	L
	6. Exposure to contaminated media	1. Follow good decontamination practices (work from top down and outside in). Surgeon's gloves are to be the last item of PPE removed. 2. Wash hands and face following personal decontamination and prior to performing any hand-to-mouth activity.	L
EQUIPMENT	INSPECTION	TRAINING	
Hand tools (hand brushes, garden sprayers, etc.)  Pressure washer	Visual inspection prior to use by user. Check wooden handles for cracks or splinters.  Inspect pressure washer prior to putting into service to ensure that it is in good working order, and ensure that fittings are secure.	None required.  Review manufacturer's instructions and safety guidelines prior to use.	
<b>Personal Protective Equipment:</b> <b>Minimum:</b> Safety toe boots, safety glasses <b>Optional items:</b> Hardhat, hearing protection. Decontamination pad pressure washer operators are to wear full face shield over safety glasses with side shields and brow protection, hearing protection, and nitrile gloves. If contact with overspray cannot be avoided, rain suit or moisture-repellant disposable coveralls may be specified	Initial PPE inspection performed by SSO. Ongoing (prior to each use) inspections responsibilities of PPE users.	Initial site specific H&S training to cover review of the APP and SSHP. Daily tail-gate and pre-task briefings to review appropriate AHAs and other relevant topics. OSHA 40 hour HAZWOPER training, plus appropriate 8-hour annual refresher training for the task participants. Supervisors must have completed additional 8 hours of HAZWOPER training. Also Review of AHA during tailgate safety briefing with the intended task participants.  PPE training in proper use, care, storage, and limitations. It is anticipated that this has been covered in employees' 40 hour HAZWOPER training, which is to be verified by the SSO	

**ACTIVITY HAZARD ANALYSIS**  
**Decontamination**  
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EQUIPMENT	INSPECTION	TRAINING
by the SSO. <b>HTRW:</b> VOCs		through initial training documentation and review prior to permitting personnel to participate in site activities, and will be confirmed by visual observations of worker activities.

I have read and understand this AHA:

Name (Printed)	Signature	Date

### ACTIVITY HAZARD ANALYSIS

<b>Activity/Work Task:</b> Investigative Derived Waste (IDW) Management	Overall Risk Assessment Code (RAC) (Use highest code)	<b>L</b>				
<b>Project Location:</b> Former NAWC-Trenton Site 1	<b>Risk Assessment Code (RAC) Matrix</b>					
<b>Contract Number:</b> WE47	<b>Severity</b>	<b>Probability</b>				
<b>Date Prepared:</b> July 10, 2012		Frequent      Likely      Occasional      Seldom      Unlikely				
<b>Prepared by:</b> J. Laffey	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
<b>Reviewed by:</b> C. Snyder	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
<b>Notes: (Field Notes, Review Comments, etc.)</b>	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and Identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
	"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E= Extremely High Risk</b>	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H= High Risk</b>	
		<b>M= Moderate Risk</b>				
		<b>L= Low Risk</b>				
<b>JOB STEPS</b>	<b>HAZARDS</b>	<b>CONTROLS</b>				<b>RAC</b>
Filling, moving 55-gallon drums of IDW	1. Heavy lifting	1. Practice safe lifting techniques (use mechanical lifting devices such as a dolly whenever possible, ensure clear path of travel, good grasp on object, perform "test lift" to gauge ability to safely make the lift, lift with legs not back, obtain help when needed to lift large, bulky, or heavy items).				<b>L</b>
	2. Struck by/pinches compressions	2. Exercise caution when handling drums. Position drums so that there is adequate room between them for placement and repositioning.				<b>L</b>
	3. Falling objects (drums)	3. Do not stack drums on top of each other. Do not place more than 4 drums to a pallet. Leave at least 4 feet of clearance between pallets for clear access.				<b>L</b>
	4. Slips, Trips, Falls	4. Maintain good housekeeping in IDW storage areas, keeping it clear of loose debris and other potential tripping hazards. Wear appropriate foot protection to prevent slips and trips. Use caution when working on uneven and wet ground surfaces.				<b>L</b>
	5. Foot hazards	5. Safety toe foot protection will be required for IDW container handling activities.				<b>L</b>
	6. Strains/sprains due to heavy lifting	7. Practice safe lifting techniques (use mechanical lifting devices such as a dolly whenever possible, ensure clear path of travel, good grasp on object, lift with legs not back, and obtain help when needed to lift large, bulky, or heavy items).				<b>L</b>
	8. Minor contusions, abrasions, cuts	1. Wear cut-resistant gloves when handling items with sharp or rough edges.				<b>L</b>
	<b>EQUIPMENT</b>		<b>INSPECTION</b>		<b>TRAINING</b>	
Hand tools (drum dollies, wrenches, etc.)		Visual inspection prior to use by user. Check wooden handles for cracks or splinters.		All personnel participating in this activity must be current with HAZWOPER training requirements.		

**ACTIVITY HAZARD ANALYSIS**  
**Investigative Derived Waste Management**  
**Page 2 of 2**

EQUIPMENT	INSPECTION	TRAINING
<p><b>Personal Protective Equipment:</b>  <b>Minimum:</b> Safety toe boots, safety glasses  <b>Optional items:</b> Hardhat, cotton or leather work gloves.</p> <p><b>HTRW:</b> If contact with IDW is likely, wear chemical-resistant coveralls (e.g., surgeon's nitrile gloves under leather/cotton work gloves).</p>	<p>Initial PPE inspection performed by SSO. Ongoing (prior to each use) inspections responsibilities of PPE users.</p>	<p>Initial site specific H&amp;S training to cover review of the APP and SSHP. Daily tail-gate and pre-task briefings to review appropriate AHAs and other relevant topics.</p> <p>PPE training in proper use, care, storage, and limitations. It is anticipated that this has been covered in employees 40 hour HAZWOPER training, which is to be verified by the SSO through initial training documentation and review prior to permitting personnel to participate in site activities, and will be confirmed by visual observations of worker activities.</p>

I have read and understand this AHA:

Name (Printed)	Signature	Date

**ATTACHMENT IV**

**EQUIPMENT CHECKLIST**

### Equipment Inspection Checklist for Drill Rigs

Company: \_\_\_\_\_

Unit/Serial No#: \_\_\_\_\_

Inspection Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Time: \_\_\_\_ : \_\_\_\_

Equipment Type: \_\_\_\_\_  
(e.g, Drill Rigs Hollow Stem, Mud Rotary, Direct Push, HDD)

Project Name: \_\_\_\_\_

Project No#: \_\_\_\_\_

Yes	No	NA	Requirement	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Emergency Stop Devices	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Emergency Stop Devices (At points of operation)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Have all emergency shut offs identified been communicated to the field crew?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Has a person been designated as the Emergency Stop Device Operator?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Highway Use	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Cab, mirrors, safety glass?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Turn signals, lights, brake lights, etc. (front/rear) for equipment approved for highway use?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Seat Belts?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Is the equipment equipped with audible back-up alarms and back-up lights?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Horn and gauges</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Brake condition (dynamic, park, etc.)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Tires (Tread) or tracks</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Windshield wipers</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Exhaust system</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Steering (standard and emergency)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Wheel Chocks?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Are tools and material secured to prevent movement during transport? Especially those within the cab?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Are there flammables or solvents or other prohibited substances stored within the cab?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Are tools or debris in the cab that may adversely influence operation of the vehicle (in and around brakes, clutch, gas pedals)</li> </ul>	

**Equipment Inspection Checklist for Drill Rigs**

Company: \_\_\_\_\_

Unit/Serial No#: \_\_\_\_\_

Inspection Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Time: \_\_\_\_ : \_\_\_\_

Page 2

Yes	No	NA	Requirement	Comments
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>Fluid Levels:</b> <ul style="list-style-type: none"> <li>• Engine oil</li> <li>• Transmission fluid</li> <li>• Brake fluid</li> <li>• Cooling system fluid</li> <li>• Hoses and belts</li> <li>• Hydraulic oil</li> </ul>	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>High Pressure Hydraulic Lines</b> <ul style="list-style-type: none"> <li>• Obvious damage</li> <li>• Operator protected from accidental release</li> <li>• Coupling devices, connectors, retention cables/pins are in good condition and in place</li> </ul>	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>Mast Condition</b> <ul style="list-style-type: none"> <li>• Structural components/tubing</li> <li>• Connection points</li> <li>• Pins</li> <li>• Welds</li> <li>• Outriggers</li> <li>• Operational</li> <li>• Plumb (when raised)</li> </ul>	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>Hooks</b> <ul style="list-style-type: none"> <li>• Are the hooks equipped with Safety Latches?</li> <li>• Does it appear that the hook is showing signs of wear in excess of 10% original dimension?</li> <li>• Is there a bend or twist exceeding 10% from the plane of an unbent hook?</li> <li>• Increase in throat opening exceeding 15% from new condition</li> <li>• Excessive nicks and/or gouges</li> <li>• Clips</li> <li>• Number of U-Type (Crosby) Clips                      (cable size 5/16 - 5/8 = 3 clips minimum)                      (cable size 3/4 - 1 inch = 4 clips minimum)                      (cable size 1 1/8 - 1 3/8 inch = 5 clips minimum)</li> </ul>	

**Equipment Inspection Checklist for Drill Rigs**

Company: \_\_\_\_\_

Unit/Serial No#: \_\_\_\_\_

Inspection Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Time: \_\_\_\_ : \_\_\_\_

Page 3

Yes	No	NA	Requirement	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Power cable and/or hoist cable <ul style="list-style-type: none"> <li>Reduction in Rope diameter π (5/16 wire rope &gt; 1/64 reduction nominal size -replace) (3/8 to 1/2 wire rope &gt; 1/32 reduction nominal size-replace) (9/16 to 3/4 wire rope &gt; 3/64 reduction nominal size-replace)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Number of broken wires (6 randomly broken wires in one rope lay) (3 broken wires in one strand)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Number of wire rope wraps left on the Running Drum at nominal use (≥3 required)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Lead (primary) sheave is centered on the running drum</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Lubrication of wire rope (adequate?)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Kinks, bends - Flattened to &gt; 50% diameter</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hemp/Fiber rope (Cathead/Split Spoon Hammer) <ul style="list-style-type: none"> <li>Minimum 3/4; maximum 1 inch rope diameter (Inspect for physical damage)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Rope to hammer is securely fastened</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safety Guards <ul style="list-style-type: none"> <li>Around rotating apparatus (belts, pulleys, sprockets, spindles, drums, flywheels, chains) all points of operations protected from accidental contact?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Hot pipes and surfaces exposed to accidental contact?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>High pressure lines</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Nip/pinch points</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operator Qualifications <ul style="list-style-type: none"> <li>Does the operator have proper licensing where applicable, (e.g., CDL)?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Does the operator, understand the equipment's operating instructions?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Is the operator experienced with this equipment?</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Is the operator 21 years of age or more?</li> </ul>	

**Equipment Inspection Checklist for Drill Rigs**

Company: \_\_\_\_\_

Unit/Serial No#: \_\_\_\_\_

Inspection Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Time: \_\_\_\_ : \_\_\_\_

Page 4

Yes	No	NA	Requirement	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PPE Required for Drill Rig Exclusion Zone <ul style="list-style-type: none"> <li>• Hardhat</li> <li>• Safety glasses</li> <li>• Work gloves</li> <li>• Chemical resistant gloves _____</li> <li>• Steel toed Work Boots</li> <li>• Chemical resistant Boot Covers</li> <li>• Apron</li> <li>• Coveralls Tyvek, Saranex, cotton) _____</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other Hazards <ul style="list-style-type: none"> <li>• Excessive Noise Levels? _____ dBA</li> <li>• Chemical hazards (Drilling supplies - Sand, bentonite, grout, fuel, etc.)                             <ul style="list-style-type: none"> <li>- MSDSs available?</li> </ul> </li> <li>• Will On-site fueling occur                             <ul style="list-style-type: none"> <li>- Safety cans available?</li> <li>- Fire extinguisher (Type/Rating - _____)</li> </ul> </li> </ul>	

Approved for Use     Yes     No     See Comments

\_\_\_\_\_  
Site Health and Safety Officer

\_\_\_\_\_  
Operator

**ATTACHMENT V**

**OSHA POSTER**

# Job Safety and Health

## It's the law!

# OSHA

Occupational Safety  
and Health Administration  
U.S. Department of Labor

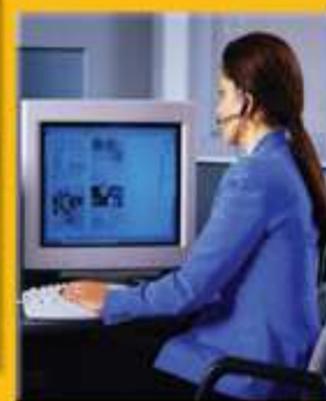
### EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the *OSH Act* that apply to your own actions and conduct on the job.

### EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the *OSH Act*.

This free poster available from OSHA –  
*The Best Resource for Safety and Health*



Free assistance in identifying and correcting hazards or complying with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

1-800-321-OSHA  
[www.osha.gov](http://www.osha.gov)