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HEALTH AND SAFETY PLAN FOR MONITORED NATURAL ATTENUATION AT SITES 1388  
AND 351 NS MAYPORT FL  
4/1/2003  
TETRA TECH NUS

**Health and Safety Plan**  
for  
**Monitored Natural Attenuation at  
Sites 1388 and 351**

**Naval Station Mayport  
Mayport, Florida**



**Southern Division  
Naval Facilities Engineering Command  
Contract No. N62467-94-D-0888  
Contract Task Order 0308**

April 2003

**HEALTH AND SAFETY PLAN  
FOR  
MONITORED NATURAL ATTENUATION AT  
SITES 1388 AND 351**

**NAVAL STATION MAYPORT  
MAYPORT, FLORIDA**

**COMPREHENSIVE LONG-TERM  
ENVIRONMENTAL ACTION-NAVY (CLEAN) CONTRACT**

**Submitted to:  
Southern Division  
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**Submitted by:  
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**CONTRACT NUMBER N62467-94-D-0888  
CONTRACT TASK ORDER 0308**

**APRIL 2003**

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## **1.0 INTRODUCTION**

This Health and Safety Plan (HASP) has been written to encompass site activities that are to be conducted at the Naval Station (NS) Mayport, Mayport, Florida as part of Contract Task Order (CTO) 0308. Specifically, this HASP addresses activities conducted as part of the Site Assessment and Optimization of Natural Attenuation at Sites 351 and 1388 at NS Mayport. This HASP is being prepared for NS Mayport as part of an overall effort conducted under Comprehensive Long-term Environmental Action Navy (CLEAN) III contract administered through the United States Navy (Navy) Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), as defined under Contract Number N62467-94-D-0888. In addition to the HASP, a copy of the Tetra Tech NUS, Inc. (TtNUS) Environmental Health and Safety Guidance Manual must be present at the site during the performance of site activities. The Guidance Manual provides detailed information pertaining to the HASP, as well as TtNUS Standard Operating Procedures (SOPs). Both documents must be present at the site to comply with the requirements stipulated in the Occupational Safety and Health Administration (OSHA) Standard 29 Code of Federal Regulations (CFR) 1910.120.

This HASP has been developed using the latest available information regarding known or suspected chemical contaminants and potential physical hazards associated with the proposed work and site. The HASP will be modified if new information becomes available. Changes to the HASP will be made by the Project Health and Safety Officer (PHSO) and approved by the TtNUS Health and Safety Manager (HSM) and the Task Order Manager (TOM). The TOM will notify affected personnel of the changes.

The elements of this HASP are in compliance with the requirements established by OSHA 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response" (HAZWOPER), and sections of 29 CFR 1926, "Safety and Health Regulations for Construction." The information contained in this plan, as well as policies on conducting on-site operations, has been obtained from the TtNUS Health and Safety Program.

### **1.1 KEY PROJECT PERSONNEL AND ORGANIZATION**

This section defines responsibility for site safety and health for TtNUS and subcontractor employees engaged in on-site activities. Personnel assigned to these positions will exercise the primary responsibility for the on-site health and safety. These persons will be the primary points of contact for any questions regarding the safety and health procedures and the selected control measures that are to be implemented for on-site activities.

- The TtNUS TOM is responsible for the overall direction of health and safety for this project.
- The PHSO is responsible for developing this HASP in accordance with applicable OSHA regulations. Specific responsibilities include:
  - i. Providing information regarding site contaminants and physical hazards associated with the site.
  - ii. Establishing air monitoring and decontamination procedures.
  - iii. Assigning personal protective equipment (PPE) based on task and potential hazards.
  - iv. Determining emergency response procedures and emergency contacts.
  - v. Stipulating training requirements and reviewing appropriate training and medical surveillance certificates.
  - vi. Providing standard work practices to minimize potential injuries and exposures associated with hazardous waste work.
  - vii. Modifying this HASP, as it becomes necessary.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of the HASP with the assistance of an appointed Site Safety Officer (SSO). The FOL manages field activities, executes the work plan, and enforces safety procedures as applicable to the work plan.
- The SSO supports site activities by advising the FOL on the aspects of health and safety on site. These duties may include:
  - i. Coordinating the health and safety activities with the FOL.
  - ii. Selecting, applying, inspecting, and maintaining PPE.
  - iii. Establishing work zones and control points in areas of operation.
  - iv. Implementing air-monitoring programs for on-site activities.
  - v. Verifying training and medical clearance of on-site personnel status in relation to site activities.
  - vi. Implementing hazard communication, respiratory protection programs, and other associated health and safety programs as they may apply to site activities.
  - vii. Coordinating emergency services.
  - viii. Providing site-specific training for on-site personnel.
  - ix. Investigating accidents and injuries (see Attachment I - Illness/Injury Procedure and Report Form).

- x. Providing input to the PHSO regarding the need to modify this HASP or applicable health and safety associated documents as per site-specific requirements.
- xi. Assuring compliance with the requirements stipulated in this HASP is monitored by the SSO and coordinated through the TtNUS CLEAN HSM.

Note: In some cases one person may be designated responsibilities for more than one position. For example, at NS Mayport the FOL may also be responsible for SSO duties. This action will be performed only as credentials, experience, and availability permits.

## 1.2 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

**Site Name:** NS Mayport **Address:** Mayport, Florida  
**Navy Engineer-in-Charge:** Ms. Beverly Washington **Phone Number:** (843) 820-5581  
**Facility Contact:** Mr. Jan Bovier **Phone Number:** (904) 270-6730

**Purpose of Site Visit:** This activity is divided into a multi-task operation (see Section 4.0) monitored natural attenuation including groundwater sampling and other related activities.

**Proposed Dates of Work:** May 2003 until completion

### **Project Team:**

#### **TtNUS Personnel:**

Mark Peterson, P.G.

David Siefken

Matthew M. Soltis, CIH, CSP

Clyde J. Snyder

David Siefken

#### **Discipline/Tasks Assigned:**

Task Order Manager (TOM)

Field Operations Leader (FOL)

CLEAN Health and Safety Manager (HSM)

Project Health and Safety Officer (PHSO)

Site Safety Officer (SSO)

#### **Non-TtNUS Personnel:**

#### **Affiliation/Discipline/Tasks Assigned:**

TBD

\_\_\_\_\_

TBD

\_\_\_\_\_

Hazard Assessments (for purposes of 29 CFR 1910.132) and HASP preparation conducted by:

Clyde J. Snyder

TBD - To be determined

## **2.0 EMERGENCY ACTION PLAN**

### **2.1 INTRODUCTION**

This section is part of a planning effort to direct and guide field personnel in the event of an emergency. The site activities will be coordinated with NS Mayport Emergency Services prior to commencement. In the event of an emergency, which cannot be mitigated using on-site resources, personnel will evacuate to a safe place of refuge and the FOL will call the 911 emergency number to report the emergency. Site personnel may transport ill workers, or those who have non-serious injuries to medical facilities, provided that such transport can be done safely. The emergency response agencies listed in 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 area of site operations, which ensures adequate emergency response time. NS Mayport Emergency Services will be notified anytime that outside response agencies are required. This Emergency Action Plan conforms to the requirements of 29 CFR 1910.38(a), as allowed in 29 CFR 1910.120(l)(1)(ii).

TtNUS will, through necessary services, include initial response measures for incidents such as:

- Initial fire-fighting support and prevention.
- Initial spill control and containment measures and prevention.
- Removal of personnel from emergency situations.
- Provision of initial medical support for injury/illness 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, injury or illness resulting from exposure to chemical or physical hazards are the most probable emergencies that can be encountered during site activities. The SSO and/or the FOL are responsible for minimizing and eliminating these potential emergency situations. Pre-emergency planning activities associated with this project include the following.

- Coordinating response actions with NS Mayport Emergency Services personnel to ensure that TtNUS emergency action activities are compatible with existing Facility emergency response procedures.

- Establishing and maintaining information at the project staging area (Support Zone) for easy access in the event of an emergency. This information includes the following:
  - Chemical inventory (for substances used on site) with Material Safety Data Sheets (MSDSs).
  - On-site personnel medical records (medical data sheets).
  - A logbook identifying personnel on site each day.
  - Emergency notification phone numbers in the site vehicles.
- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures associated with planned activities at the site and providing early recognition and prevention, where possible.

It is the responsibility of the TtNUS FOL to ensure that this information is available and present at the site.

## **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. A clear knowledge of the signs and symptoms of overexposure to contaminants of concern (COCs) may alert personnel of the potential hazards concerning themselves or their fellow workers. 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. Additionally, early recognition will be supported by periodic site surveys to eliminate any conditions that may predispose site personnel or properties to an emergency. These surveys will consist of ensuring:

- Approach paths to monitoring wells are maintained (i.e., cleared, mowed, etc.).
- Monitoring well protective casings are cleared of spider and insect nests.

The FOL and the SSO will constitute the site evaluation committee responsible for these periodic surveys. A site survey will be conducted during the initiation of this effort. The survey will be documented.

### **2.3.2 Prevention**

TtNUS and subcontractor personnel will minimize the potential for emergencies by ensuring compliance with the HASP, the Health and Safety Guidance Manual, applicable OSHA regulations, and by following directions given by those persons responsible for the health, safety, and welfare of personnel.

#### **2.4 SAFE DISTANCES AND PLACES OF REFUGE**

In the event that the site must be evacuated, personnel will immediately stop activities and report to a pre-determined safe place of refuge. The safe place of refuge may also serve as the telephone communication point, as communication with emergency response agencies may be necessary. Telephone communication points and safe places of refuge will be determined prior to the commencement of site activities and will be conveyed to personnel as part of pre-site training. Upon reporting to the refuge location, personnel will remain there until directed otherwise by the TtNUS FOL or the On-Scene Incident Commander. The FOL will take a head count at this location to confirm the presence of site personnel. Emergency response agencies will be notified of any unaccounted for personnel.

#### **2.5 EVACUATION ROUTES AND PROCEDURES**

Once an evacuation is initiated, personnel will proceed immediately to the designated place of refuge, unless doing so would further jeopardize the welfare of workers. In such an event, personnel will proceed to a designated alternate location (to be identified) and remain there until further notification from the FOL. The use of these locations as assembly points provides communication and a direction point for emergency services, should they be needed.

Evacuation procedures will be discussed prior to the initiation of any work at the site. This will include identifying primary and secondary evacuation routes and assembly points. Evacuation routes from the site 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 influence the designation of evacuation routes. As a result, assembly points at NS Mayport will be selected and, in the event of an emergency, field personnel will proceed to these points by the most direct route possible without further endangering themselves.

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

Since TtNUS personnel will not always be working in the proximity of each other, hand signals, voice commands, air horns, and/or two-way radios may 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 (if needed) verbally, by air horn, or using two-way radios.
- Evacuate non-essential personnel.

- Initiate initial response procedures.
- Describe to the FOL (who will serve as the On-Scene Incident Commander) what has occurred in as much detail as possible.

In the event that site personnel cannot control the incident through offensive and/or defensive measures, the FOL and/or the SSO will enact the emergency notification procedure to secure additional outside assistance in the following manner:

- Report the emergency to the NS Mayport Emergency Services (see Table 2-1) by calling "911."
- Give the emergency operator the location of the emergency and a brief description of what has occurred.
- Stay on the phone; follow the instructions given by the operator. The appropriate agency will be notified and dispatched.
- Call the Navy On-Site Representative.
- Call the TOM.

If an incident occurs outside of the designated TtNUS operating areas impacting field personnel, the following procedures are to be initiated:

- Initiate an evacuation (if needed) by voice commands, hand signals, air horns, or two-way radio.
- Call the Navy On-Site Representative.
- Proceed to the assembly points as directed by NS Mayport or other Navy personnel.

## **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 incident. A cellular phone will be available at the site. Table 2-1 provides a list of emergency contacts and corresponding telephone numbers. These numbers will be used for the site to be visited during this project. This table must be readily available to personnel at the site.

**TABLE 2-1  
EMERGENCY CONTACTS  
NS MAYPORT**

| <b>AGENCY</b>   | <b>TELEPHONE</b>                    |
|---|-------------------------------------|
| NS Mayport Emergency Services   | <b>911</b>                          |
| EMERGENCY (outside services)<br>(Police, Fire, and Ambulance Services)  | 911 or<br>(904) 270-5333            |
| Base Security   | (904) 270-5583 or<br>(904) 270-5584 |
| Base Medical Center (for life threatening emergencies only)             | (904) 270-5444                      |
| Memorial Health Care Center (for other emergencies)                     | (904) 858-7500                      |
| Base Safety Department  | (904) 270-5218                      |
| Navy On-Site Representative, Mr. Jan Bovier                             | (904) 270-6730                      |
| Public Works Trouble Desk (for utility problems)                        | (904) 542-2122                      |
| Sunshine State Utility One-Call of Florida                              | (800) 432-4770                      |
| NS Mayport Operator (for information)                                   | (904) 270-5011                      |
| Poison Control Center   | (800) 222-1222                      |
| Chemtrec  | (800) 424-9300                      |
| National Response Center  | (800) 424-8802                      |
| TiNUS Jacksonville Office and Task Order Manager<br>Mark Peterson, P.G. | (904) 636-6125                      |
| CLEAN Health and Safety Manager Matthew M. Soltis, CIH, CSP             | (412) 921-8912                      |
| Project Health and Safety Officer Clyde J. Snyder                       | (412) 921-8904                      |
| Workcare  | (800)-455-6155<br>(extension 109)   |

Note: When calling base telephone numbers from within the Base (i.e., from an on-base telephone), dial a zero (0) and the last four digits of the telephone number. For example, to contact the Base Medical Clinic dial 05444.

## 2.8 ROUTE TO HOSPITALS

For emergency care only, non-Navy personnel are permitted to go to the Base Medical Center.

Branch Medical Center  
NS Mayport  
Mayport, FL 32228

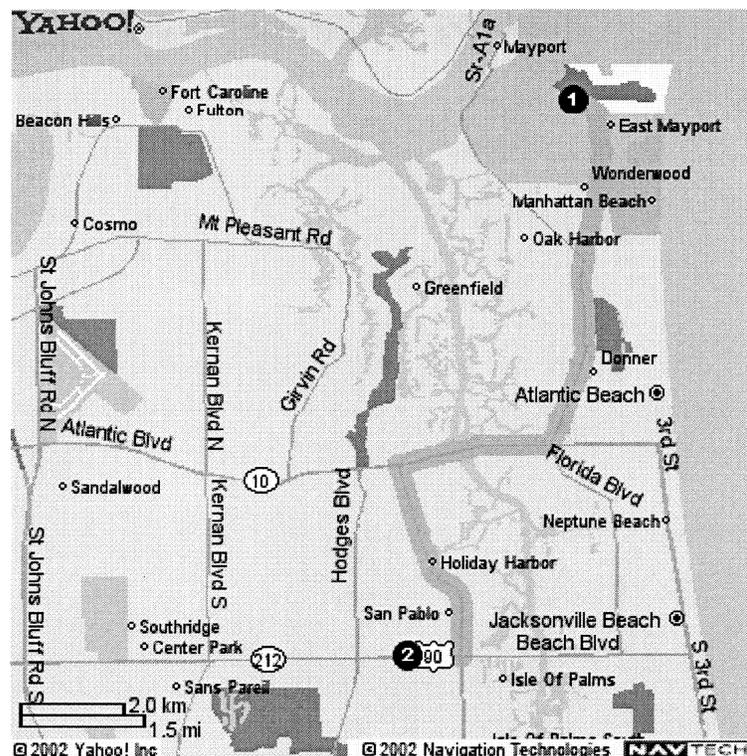
The Base Medical Center should be used for life-threatening emergencies only. It is located in Building 1363 on Massey Avenue.

For non-emergency care services:

Memorial Health Care Center  
14444 Beach Boulevard  
Jacksonville, Florida 32202  
(904) 858-7500

Memorial Health Care Center will be used for medical care beyond basic first aid treatment. Directions to the Center are as follows: Exit the Base and take Mayport Road (A1A) to Atlantic Boulevard. Take a right onto Atlantic Boulevard and cross the Intercoastal Waterway. At the first intersection, take a left onto San Pablo Boulevard. The Medical Center is at the intersection of San Pablo Boulevard and Beach Boulevard (14444 Beach Boulevard). See Figure 2-1, "Route to Memorial Health Care Center."

**Figure 2-1**  
**Route to Memorial Health Care Center**



## **2.9 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 not be performed 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.

TtNUS personnel will perform removal of personnel from emergency situations and may provide initial medical support for injury/illnesses requiring only first-aid level support. Medical attention above that level will require assistance and support from the designated emergency response agencies. **If the emergency involves personnel exposures to chemicals, follow the steps provided in Figure 2-2.**

## **2.10 INJURY/ILLNESS REPORTING**

If any TtNUS personnel are injured or develop an illness as a result of working at the site, the TtNUS "Injury/Illness Procedure" (Attachment I) must be followed. Following this procedure is necessary for documenting the information obtained at the time of the incident.

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical service personnel. This information is listed on Medical Data Sheets (Attachment II) filed on site. 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.

## **FIGURE 2-2 EMERGENCY RESPONSE PROTOCOL**

The purpose of this protocol is to provide guidance for the medical management of exposure situations.

In the event of a personnel exposure to a hazardous substance or agent:

- Rescue, when necessary, employing proper equipment and methods.
- Give attention to emergency health problems such as breathing, cardiac functions, bleeding, and shock.
- Transfer the victim to the medical facility designated in this HASP by suitable and appropriate conveyance (i.e., ambulance for serious events).
- Obtain as much exposure history as possible (a Potential Exposure report is attached).
- If the exposed person is a TtNUS employee, call the medical facility and advise them that the patient(s) is/are being sent and that they can anticipate a call from the WorkCare physician. WorkCare will contact the medical facility and request specific testing that may be appropriate. WorkCare physicians will monitor the care of the victim. Site officers and personnel should not attempt to get this information, as this activity leads to confusion and misunderstanding.
- Call WorkCare at (800) 455-6155. Enter extension 109 or follow the voice prompt for after hours and weekend notification and be prepared to provide the following:
  - Any known information about the nature of the exposure.
  - As much of the exposure history as was feasible to determine in the time allowed.
  - Name and phone number of the medical facility to which the victim(s) has/have been taken.
  - Name(s) of the exposed TtNUS employee(s).
  - Name and phone number of an informed site officer who will be responsible for further investigations.
- Fax appropriate information (e.g., MSDS) to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) at (800) 245-2730.
- Contact Corporate Human Resources Manager (Marilyn Duffy) at (412) 921-8475.

As environmental data is gathered and the exposure scenario becomes more clearly defined, this information should be forwarded to WorkCare. WorkCare will compile the results of the data and provide a summary report of the incident. A copy of this report will be placed in each victim's medical file, in addition to being distributed to appropriately designated company officials. Each involved worker will receive a letter describing the incident, deleting any personal or individual comments. This generalized summary will be accompanied by a personalized letter describing the individual's findings/results. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

**FIGURE 2-2 (Continued)**  
**POTENTIAL EXPOSURE REPORT**

Name: \_\_\_\_\_ Date of Exposure: \_\_\_\_\_

Social Security No.: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: \_\_\_\_\_

Client Contact: \_\_\_\_\_ Phone No.: \_\_\_\_\_

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

**I. Exposing Agent**

Name of Product or Chemicals (if known): \_\_\_\_\_

Characteristics (if the name is not known)

Solid          Liquid          Gas          Fume          Mist          Vapor

**II. Dose Determinants**

What was individual doing? \_\_\_\_\_

How long did individual work in area before signs/symptoms developed? \_\_\_\_\_

Was protective gear being used? If yes, what was the PPE? \_\_\_\_\_

Was there skin contact? \_\_\_\_\_

Was the exposing agent inhaled? \_\_\_\_\_

Were other persons exposed? If yes, did they experience symptoms? \_\_\_\_\_

**III. Signs and Symptoms** (check off appropriate symptoms)

**Immediately With Exposure:**

Burning of eyes, nose, or throat  
Tearing  
Headache  
Cough  
Shortness of breath

Chest Tightness / Pressure  
Nausea / Vomiting  
Dizziness  
Weakness

**Delayed Symptoms:**

Weakness  
Nausea / Vomiting  
Shortness of breath  
Cough

Loss of appetite  
Abdominal Pain  
Headache  
Numbness / Tingling

**IV. Present Status of Symptoms** (check off appropriate symptoms)

Burning of eyes, nose, or throat  
Tearing  
Headache  
Cough  
Shortness of breath  
Chest tightness / Pressure  
Cyanosis

Nausea / Vomiting  
Dizziness  
Weakness  
Loss of appetite  
Abdominal pain  
Numbness / Tingling

Have symptoms: (please check off appropriate response and give duration of symptoms)

Improved: \_\_\_\_\_ Worsened: \_\_\_\_\_ Remained Unchanged: \_\_\_\_\_

**V. Treatment of Symptoms** (check off appropriate response)

None: \_\_\_\_\_ Self-Medicating: \_\_\_\_\_ Physician Treated: \_\_\_\_\_

### **3.0 SITE BACKGROUND**

#### **3.1 NS MAYPORT**

NS Mayport is located within the corporate limits of the City of Jacksonville, Duval County, Florida and is approximately 12 miles to the northeast of downtown Jacksonville and adjacent to the Town of Mayport. The station complex is located on the northern end of a peninsula bounded by the Atlantic Ocean to the east and the St. Johns River to the north and west.

#### **3.2 SITE 351**

Building 351 (Tank N1388) is the site of a 3,000 gallon fuel oil underground storage tank (UST). A release occurred on July 1, 1999. Twenty-three drums of contaminated soil were removed, and the broken pipe was repaired, abating the source. Approximately 500 gallons of free-product was recovered during an Interim Removal Action in 1999.

#### **3.3 SITE 1388**

Building 1388 is the former site of a 1,000 gallon UST that contained fuel oil and was removed in June 1995 when strong petroleum odors were reported to exist in the groundwater. A site investigation conducted in July 1999 confirmed that the groundwater was contaminated. The soil on the site, however, did not appear to be impacted.

#### 4.0 SCOPE OF WORK

The field investigation will consist of natural attenuation monitoring for groundwater contamination at Sites 351 and 1388. Three wells at Site 351 (MW-04, MW-05, and RW-01) will be monitored for volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), total recoverable petroleum hydrocarbons (TRPH), ethylene dibromide, and lead. Four wells at Site 1388 (MW-1, MW-2, MW-4, and MW-6) will be monitored for PAHs and TRPH. All wells will be monitored at varying times over a 61-week period.

To summarize, the following activities are covered in this HASP for the CTO 0308 project:

- Mobilization/Demobilization
- Groundwater sampling
- Decontamination
- Investigative-derived waste (IDW) management

Any tasks to be conducted outside of the elements listed here will be considered a change in scope requiring modification of this document. The requested modifications to this document will be submitted to the HSM by the TOM or a designated representative.

## **5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION**

### **5.1 TABLE 5-1 INFORMATION AND USE**

Table 5-1 of this section serves as the primary portion of the site-specific HASP, which identifies the tasks that are to be performed as part of the scope of work. This table will be modified and incorporated into this document as new or additional tasks are performed at the site. The anticipated hazards, recommended control measures, air-monitoring recommendations, PPE, and decontamination measures for each site task are discussed in detail. This table and the associated control measures will be changed if the scope of work, COCs, or other conditions change.

Through using the table, site personnel can determine which hazards are associated with each task at each site and what associated control measures are necessary to minimize potential exposure or injuries related to those hazards. The table also assists field team members in determining which PPE and decontamination procedures are to be used based on proper air monitoring techniques and site-specific conditions.

A Health and Safety Guidance Manual accompanies this table and HASP. The manual is designed to further explain supporting programs and elements for other site-specific aspects as required by 29 CFR 1910.120. The Health and Safety Guidance Manual should be referenced for additional information regarding air monitoring instrumentation, decontamination activities, emergency response, hazard assessments, hazard communication and hearing conservation programs, medical surveillance, PPE, respiratory protection, site control measures, standard work practices, and training requirements. Many of TtNUS' SOPs are also provided in the Health and Safety Guidance Manual.

The FOL and/or the SSO will complete the Safe Work Permits and will add additional site-specific information. In situations where the Safe Work Permit is more conservative than the direction provided in Table 5-1 due to the incorporation of site-specific elements, the Safe Work Permit will be followed. Partially completed Safe Work Permits are included in Attachment III of this HASP.

### **5.2 GENERAL SAFE WORK PRACTICES**

In addition to the task-specific work practices identified on Table 5-1, the following safe work practices are to be followed when conducting work on site. These safe work practices address a pattern of general precautions and measures for reducing risks associated with site operations. This is a partial list and may be amended as necessary.

- Eating, drinking, chewing (gum/tobacco), taking medication, or smoking in contaminated or potentially contaminated areas where the possibility for the transfer of contamination exists is prohibited.
- A thorough shower and washing must be conducted as soon as possible if excessive skin contamination occurs.
- Avoid contact with potentially contaminated substances. Avoid puddles, pools, mud, or other such areas. Avoid, whenever possible, kneeling on the ground or leaning or sitting on equipment. Keep monitoring equipment away from potentially contaminated surfaces.
- Attend briefings on anticipated hazards, equipment requirements, Safe Work Permits, emergency procedures, and communication methods before going on-site.
- Plan and mark entrance, exit, and emergency escape routes.
- Buddies should maintain visual or communicative 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 Safety Zones including Support, Contamination Reduction, and Exclusion Zones.
- Establish appropriate decontamination procedures for leaving the site.
- Immediately report injuries, illnesses, unsafe conditions, unsafe practices, defective equipment, and potential exposure incidents to the SSO.
- Observe coworkers for signs of exposure and heat or cold stress.
- Watch for potential symptoms of illness such as headaches, dizziness, nausea, or blurred vision.

**TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES  
NS MAYPORT, FLORIDA – CTO 0308**

| Tasks/Operation/<br>Locations  | Anticipated Hazards  | Recommended Control Measures   | Hazard Monitoring   | Personal Protective Equipment<br><i>(Items in italics are deemed optional as conditions or the FOL or SSO require.)</i>  | Decontamination Procedures  |
|--|--|--|---|--|---|
| Mobilization/<br>Demobilization.                                     | <p><b>Chemical hazards:</b></p> <p>1) Exposure to potential site contaminants is not anticipated during this activity. However, chemicals brought on site in support of field activities are to be identified, inventoried, accompanied by an appropriate MSDS, properly stored, and evaluated for purposes of hazard communication.</p> <p><b>Physical hazards:</b></p> <p>2) Lifting (strain/muscle pulls).<br/>3) Pinches and compressions.<br/>4) Slip, trips, and falls.<br/>5) Heavy equipment hazards (i.e., rotating equipment, hydraulic lines, etc.).<br/>6) Vehicular and foot traffic.<br/>7) Ambient temperature extremes (heat stress).</p> <p><b>Natural hazards:</b></p> <p>8) Insect/animal bites and stings.</p>   | <p>1) To eliminate potential chemical hazards associated with this task, ensure the following:</p> <ul style="list-style-type: none"> <li>- A chemical inventory list must be generated and maintained for chemicals brought on site. (Complete Section 5.0 of the TtNUS Health and Safety Guidance Manual.)</li> <li>- MSDSs must be available for chemicals brought on site.</li> <li>- Materials are to be stored in accordance with recommended practices and according to compatibility. (See MSDS for storage and compatibility recommendations.)</li> </ul> <p>2) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>3) Keep any machine guarding in place. Avoid moving parts. Use tools or equipment where necessary to avoid contacting pinch points.</p> <p>4) Preview work locations for unstable/uneven terrain.</p> <p>5) Equipment will be</p> <ul style="list-style-type: none"> <li>- Inspected in accordance with OSHA and manufacturer's design.</li> <li>- Operated by knowledgeable operators and knowledgeable ground crew.</li> </ul> <p>6) Traffic and equipment considerations are to include the following:</p> <ul style="list-style-type: none"> <li>- Establish safe zones of approach [i.e., boom + 3 feet (ft)].</li> <li>- Secure loose articles to avoid possible entanglement.</li> <li>- Heavy equipment will be equipped with movement warning systems.</li> <li>- Activities are to be conducted consistent with the Base requirements.</li> </ul> <p>7) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews. Additional information regarding cold/heat stress concerns is provided in Section 4 of the TtNUS Health and Safety Guidance Manual.</p> <p>8) Avoid nesting areas and use repellents. Report potential hazards to the SSO. Follow guidance presented in Section 4 of the Health and Safety Guidance Manual.</p>  | Not required.   | <p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> <li>- Standard field attire (i.e., sleeved shirt, long pants).</li> <li>- Steel toe safety shoes.</li> <li>- <i>Safety glasses.</i></li> <li>- <i>Hardhat (when overhead hazards exists or identified as a operation requirement).</i></li> <li>- <i>Reflective vest for high traffic areas.</i></li> <li>- <i>Hearing protection for high noise areas or as directed on an operation by operation scenario.</i></li> </ul> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each task to address the work planned for that task. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>  | Not required.   |
| Groundwater sampling.<br>Also included in this task is IDW sampling. | <p><b>Chemical hazards:</b></p> <p>1) Based on the site history and analytical results from past sampling activities, benzene, toluene, ethylbenzene, and xylenes (BTEX) and PAHs are the primary COCs. Exposure to site contaminants is most likely to occur as a result of inhalation of vapors or contact with the skin. Contaminants may be bound to particulates (i.e., dusts, soils, etc.) and contact should be avoided whenever possible. Adequate decontamination and personal hygiene practices will minimize the potential for exposure via ingestion. See Table 6-1 for more information on the COCs.</p> <p>2) Transfer of contamination into clean areas.</p> <p><b>Physical hazards:</b></p> <p>3) Noise in excess of 85 decibels.<br/>4) Lifting (i.e., strain/muscle pulls).<br/>5) Pinches and compressions.<br/>6) Slip, trips, and falls.<br/>7) Ambient temperature extremes (i.e., heat stress).<br/>8) Vehicular and foot traffic.</p> <p><b>Natural hazards:</b></p> <p>9) Insect/animal bites and stings.</p> | <p>1) Use real-time monitoring instrumentation, action levels, and identified PPE to control exposures to potentially contaminated media (i.e., air, water, soils, etc.). Avoid contact with any free product (fuel oil) that may be encountered during groundwater sampling.</p> <p>2) Establish the Exclusion Zone for this activity at 10 ft surrounding the well head and discharge collection container. Decontaminate sampling equipment that comes into contact with contaminated media [photoionization detector (PID) excluded] between sampling locations and prior to leaving the site.</p> <p>3) Sampling in high noise areas.</p> <p>4) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>5) Keep any machine guarding in place. Avoid moving parts. Use tools or equipment, where necessary, to avoid contacting pinch points.</p> <p>6) Preview work locations for unstable/uneven terrain.</p> <p>7) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews. Additional information regarding cold/heat stress concerns is provided in Section 4 of the TtNUS Health and Safety Guidance Manual.</p> <p>8) Traffic and equipment considerations are to include the following:</p> <ul style="list-style-type: none"> <li>- Heavy equipment will be equipped with movement warning systems.</li> <li>- Activities are to be conducted consistent with the Base requirements.</li> </ul> <p>9) Avoid potential nesting areas of biting/stinging insects and snakes. Use commercially available insect repellents. Wear appropriate clothing, including snake chaps where warranted. Tape ankle and wrist areas to prevent ticks, chiggers, etc. from attaching themselves to skin. Wear light colored clothing so that biting insects can be easily visible and be removed. Follow directions as specified in Section 6.3 of this HASP and Section 4.0 of the Health and Safety Guidance Manual concerning natural hazards.</p> | <p>A direct reading instrument, such as PID with an 10.6 electron volt (eV) source (or higher) or flame ionization detector (FID), will be used as a general screening instrument to detect VOCs and to evaluate airborne concentrations of potential site contaminants:</p> <p>Source areas (i.e., sample locations) will be monitored using a PID or FID. Monitoring will be performed at beginning and periodically during sampling event. Any positive sustained results at a source or downwind location(s) which may impact operations crew will require the following actions:</p> <p>Monitor the breathing zone of at-risk and downwind employees. Any sustained reading (greater than 1 minute in duration) above 10 part per million (ppm) in worker breathing zones requires site activities to be suspended and site personnel to report to an unaffected area.</p> <p>Work may only resume if airborne readings in worker breathing zones return to below 10 ppm. If readings do not subside, contact the PHSO for further guidance.</p> <p>Site contaminants may adhere to or be part of airborne dusts or particulates generated during site activities. Generation of dusts should be minimized to avoid inhalation of contaminated dusts or particulates. Evaluation of dust concentrations will be performed by observing work conditions for visible dust clouds. Potential exposure to contaminated dust will be controlled using water suppression, by avoiding dust plumes, or evacuating the operation area until dust subsides.</p> | <p>Level D protection will be utilized for the initiation of sampling activities.</p> <p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> <li>- Standard field attire (i.e., sleeved shirt, long pants).</li> <li>- Steel toe safety shoes.</li> <li>- Safety glasses.</li> <li>- Surgical style gloves (double-layered if necessary).</li> <li>- Reflective vest for high traffic areas.</li> <li>- <i>When sampling wells away from insect infested areas and when the temperatures exceed 80°F short pants may be worn.</i></li> <li>- <i>Hardhat (when overhead hazards exists or identified as an operation requirement).</i></li> <li>- <i>Tyvek coveralls if surface contamination is present and if the potential for soiling work attire exists.</i></li> <li>- <i>Hearing protection for high noise areas, or as directed on an operation by operation scenario.</i></li> </ul> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each task to address the work planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p> | <p><b>Personnel Decontamination</b> will consist of a removal and disposal of non-reusable PPE (i.e., gloves, coveralls, etc., as applicable). The decontamination function will take place at an area adjacent to the site activities. This procedure will consist of:</p> <ul style="list-style-type: none"> <li>- Equipment drop.</li> <li>- Outer coveralls, boot covers, and/or outer glove removal (as applicable).</li> <li>- Removal, segregation, and disposal of non-reusable PPE in bags/containers provided.</li> <li>- Soap/water wash and rinse of reusable PPE (i.e., hardhat) if potentially contaminated.</li> <li>- Wash hands and face; leave contamination reduction zone.</li> </ul> |

**TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES  
NS MAYPORT, FLORIDA – CTO 0308**

| Tasks/Operation/Locations                             | Anticipated Hazards   | Recommended Control Measures   | Hazard Monitoring   | Personal Protective Equipment<br><i>(Items in italics are deemed optional as conditions or the FOL or SSO require.)</i>   | Decontamination Procedures  |
|---|---|--|---|---|---|
| Decontamination of Sampling Equipment.                | <p><b>Chemical hazards:</b></p> <p>1) Based on the site history and analytical results from past sampling activities, BTEX and PAHs are the primary COCs. Exposure to site contaminants is most likely to occur as a result of inhalation of vapors or contact with the skin. Contaminants may be bound to particulates (i.e., dusts, soils, etc.) and contact should be avoided whenever possible. Adequate decontamination and personal hygiene practices will minimize the potential for exposure via ingestion. See Table 6-1 for more information on the COCs.</p> <p>2) Decontamination fluids - Liquinox (detergent), acetone, or isopropanol.</p> <p><b>Physical hazards:</b></p> <p>3) Lifting (i.e., strain/muscle pulls).<br/>           4) Noise in excess of 85 decibels.<br/>           5) Flying projectiles.<br/>           6) Vehicular and foot traffic.<br/>           7) Slips, trips, and falls.<br/>           8) Ambient temperature extremes (heat stress).</p>   | <p>1) and 2) Employ protective equipment to minimize contact with site contaminants and hazardous decontamination fluids. Establish the Exclusion Zone for this activity at least 10 ft surrounding the decontamination area. Obtain manufacturer's MSDS for any decontamination solvents used on-site. Use appropriate PPE as identified on MSDS. Chemicals used must be listed on the Chemical Inventory for the site, and site activities must be consistent with the Hazard Communication section of the Health and Safety Guidance Manual (Section 5).</p> <p>3) Use multiple persons where necessary for lifting and handling sampling equipment for decontamination purposes.</p> <p>4) Wear hearing protection when operating pressure washer.</p> <p>5) Use eye and face protective equipment when operating pressure washer. Other personnel must be restricted from the area.</p> <p>6) Traffic and equipment considerations are to include the following:<br/>           - Establish safe zones of approach (i.e., decontamination area plus 10 ft).<br/>           - Secure loose articles to avoid possible entanglement.<br/>           - Equipment will be equipped with movement warning systems.<br/>           - Activities are to be conducted consistent with the Base requirements.</p> <p>7) Preview work locations for unstable/uneven terrain.</p> <p>8) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews. Additional information regarding heat stress concerns is provided in Section 4 of the TtNUS Health and Safety Guidance Manual.</p> | <p>Use visual observation and real-time monitoring instrumentation to ensure equipment has been properly cleaned of contamination and dried.</p>  | <p>For sampling equipment (i.e., pumps, bailers, etc.), the following PPE is required:</p> <p>Level D Minimum requirements -<br/>           - Standard field attire (i.e., long sleeve shirt, long pants).<br/>           - Safety shoes (steel toe/shank).<br/>           - Surgical outer gloves.<br/>           - Safety glasses.</p> <p>In the event of overspray of chemical decontamination fluids, employ polyvinyl chloride (PVC) rainsuits or protective equipment or PVC-coated Tyvek as necessary.</p> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>                                       | <p><b>Personnel Decontamination</b> will consist of a soap/water wash and rinse for reusable outer protective equipment (i.e., boots, gloves, and PVC splash suits as applicable). The decontamination function will take place at an area adjacent to the site activities. This procedure will consist of:<br/>           - Equipment drop.<br/>           - Soap/water wash and rinse of outer boots and gloves, as applicable.<br/>           - Soap/water wash and rinse of the outer splash suit, as applicable.<br/>           - Disposable PPE will be removed and bagged.</p> <p><b>Sampling Equipment Decontamination</b></p> <p>Sampling equipment will be decontaminated as per the requirements in the Sampling and Analysis Plan and/or Work Plan.</p> <p>MSDS for any decon solutions (i.e., Alconox, isopropanol, etc.) will be obtained and used to determine proper handling /disposal methods and protective measures (i.e., PPE, first-aid, etc.).</p> <p>Equipment used in the Exclusion Zone will require a complete decontamination between locations and prior to removal from the site.</p> <p>The FOL or the SSO will be responsible for evaluating equipment arriving on-site and leaving the site. No equipment will be authorized access or exit without this evaluation.</p> |
| IDW management and moving IDW drums to storage areas. | <p><b>Chemical hazards:</b></p> <p>1) Based on the site history and analytical results from past sampling activities, BTEX and PAHs are the primary COCs. Exposure to site contaminants is most likely to occur as a result of inhalation of vapors or contact with the skin. Contaminants may be bound to particulates (i.e., dusts, soils, etc.) and contact should be avoided whenever possible. Adequate decontamination and personal hygiene practices will minimize the potential for exposure via ingestion. See Table 6-1 for more information on the COCs.</p> <p>2) Transfer of contaminants to unaffected areas.</p> <p><b>Physical hazards:</b></p> <p>3) Noise in excess of 85 decibels.<br/>           4) Lifting (i.e., strain/muscle pulls).<br/>           5) Pinches and compressions.<br/>           6) Slip, trips, and falls.<br/>           7) Vehicular and foot traffic.<br/>           8) Ambient temperature extremes (i.e., heat stress).</p> <p><b>Natural hazards:</b></p> <p>9) Insect/animal bites and stings.</p> | <p>1) Employ real-time monitoring instrumentation, action levels, and identify PPE to control exposures to potentially contaminated media (i.e., air, water, and soils).</p> <p>2) An IDW area will be constructed and barricaded. Only authorized personnel will be allowed access. Decontaminate equipment and supplies, if they become contaminated, between locations and prior to leaving the site.</p> <p>3) When working near heavy equipment, use hearing protection.</p> <p>4) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>5) Keep any machine guarding in place. Avoid moving parts. Use tools or equipment where necessary to avoid contacting pinch points.</p> <p>6) Preview work locations for unstable/uneven terrain.</p> <p>7) Traffic and equipment considerations are to include the following:<br/>           - Establish safe zones of approach (i.e., Storage area plus 3 ft).<br/>           - Secure loose articles to avoid possible entanglement.<br/>           - Equipment will be equipped with movement warning systems.<br/>           - Activities are to be conducted consistent with the Base requirements.</p> <p>8) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews. Additional information regarding heat stress concerns is provided in Section 4 of the TtNUS Health and Safety Guidance Manual.</p> <p>9) Avoid nesting areas and use repellents. Report potential hazards to the SSO. Follow guidance presented in Section 4 of the Health and Safety Guidance Manual.</p>    | <p>A direct reading instrument, such as PID with an 10.6 eV source (or higher) or FID, will be used as a general screening instrument to detect VOCs and to evaluate airborne concentrations of potential site contaminants unless the field crew has process knowledge that excessive contamination is not present at the site.</p> <p>Source areas IDW containers/drums will be monitored using a PID or FID. Any positive sustained results at a source or downwind location(s), which may impact operations crew will require the following actions:</p> <p>Monitor the breathing zone of at-risk and downwind employees. Any sustained reading (greater than 1 minute in duration) above 10 ppm in worker breathing zones requires site activities to be suspended and site personnel to report to an unaffected area.</p> <p>Work may only resume if airborne readings in worker breathing zones return to below 10 ppm. If readings do not subside, contact the PHSO for further guidance.</p> <p>Site contaminants may adhere to or be part of airborne dusts or particulates generated during site activities.</p> | <p>Level B protection will be utilized for the initiation of sampling activities.</p> <p>Level B - (Minimum Requirements)<br/>           - Standard field attire (i.e., long sleeve shirt, long pants).<br/>           - If necessary, Nitrile or cotton/leather work gloves with surgical style inner gloves.<br/>           - Safety steel toe shoes.<br/>           - Safety glasses.<br/>           - <i>Hardhat (when overhead hazards exists or identified as an operation requirement).</i><br/>           - <i>Reflective vest for high traffic areas.</i><br/>           - <i>Tyvek coveralls and disposable boot covers if surface contamination is present and if the potential for soiling work attire exists.</i><br/>           - <i>Hearing protection for high noise areas or as directed on an operation by operation scenario.</i><br/>           - <i>Work/rest regimen.</i></p> | <p><b>Personnel Decontamination</b> will consist of a soap/water wash and rinse for reusable outer protective equipment (i.e., boots, gloves, and PVC splash suits as applicable). The decontamination function will take place at an area adjacent to the site activities. This procedure will consist of:<br/>           - Equipment drop.<br/>           - Soap/water wash and rinse of outer boots and gloves as applicable.<br/>           - Soap/water wash and rinse of the outer splash suit as applicable.<br/>           - Disposable PPE will be removed and bagged.</p>   |

## 6.0 HAZARD ASSESSMENT

The following section provides information regarding the chemical, physical, and natural hazards associated with the site to be investigated and the activities that are to be conducted as part of the scope of work. Table 6-1, which is included as part of this HASP, provides various information, exposure limits, symptoms of exposure, physical properties, and air monitoring and sampling data. Section 6.1 provides general information regarding the contaminants that may be present at the site.

### 6.1 CHEMICAL HAZARDS

The potential health hazards associated with work to be conducted at Building 351 and Site 1388 at NS Mayport include inhalation, ingestion, and dermal contact of various contaminants that may be present in groundwater. The following will be considered as the primary classes of contaminants on site:

- BTEX
- PAHs related to fuel oil.

Contaminants that have been previously detected include PAHs and BTEX. Table 6-1 provides additional information on specific COCs that present the most significant exposure potential to site workers. Included is information on the toxicological, chemical, and physical properties of these substances. Certain information on this table (such as glove selection) is based on clinical information regarding pure chemicals. Assessment of hazards and recommended control measures (such as nitrile surgeon's gloves) within this HASP, however, are based on the diluted nature of media to be sampled and the limited anticipated contact.

Semivolatile organic compounds, such as PAHs, are less likely to be present at airborne concentrations than VOCs, such as BTEX compounds. The greatest potential for exposure to these chemicals is most likely to occur through inhalation of airborne vapors generated during soil boring activities or through hand-to-mouth contact after handling contaminated media. Based on available analytical data from previous site investigations, hazardous airborne concentrations in worker breathing zones are unlikely to be present. However, air monitoring will be used to detect potential airborne vapors, and the use of PPE and basic hygiene practices (washing face and hands before leaving site) will be required to minimize the potential for exposure to site contaminants.

**TABLE 6-1  
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**

| Substance                  | CAS No.  | Air Monitoring/Sampling Information   |  | Exposure Limits   | Warning Property Rating  | Physical Properties   | Health Hazard Information   |
|----------------------------|----------|---|--|---|--|---|---|
| Benzene                    | 71-43-2  | PID: I.P 9.24 eV, 100% response with PID and 10.2 eV lamp.<br><br>FID: 150% relative response ratio with FID. | Air sample using charcoal tube; carbon disulfide desorption; Sampling and analytical protocol in accordance with OSHA 07 or NIOSH Method Number 1500.  | OSHA:<br>1 ppm<br><br>ACGIH:<br>10 ppm<br><br>NIOSH:<br>0.1 ppm<br><br>IDLH:<br>500 ppm         | Inadequate - Odor threshold 34-199 ppm. OSHA accepts the use of air-purifying respirators with organic vapor cartridge up to 10 ppm despite the inadequate warning properties providing cartridges are changed at the beginning of each shift.<br><br><b>Recommended gloves:</b><br>Butyl/neoprene blend - >8.00 hrs;<br>Silver shield as a liner - >8.00 hrs;<br>Viton - >8.00 hrs. | <b>Boiling Pt:</b> 176°F; 80°C<br><b>Melting Pt:</b> 42°F; 5.5°C<br><b>Solubility:</b> 0.07%<br><b>Flash Pt:</b> 12°F; -11°C<br><b>LEL/LFL:</b> 1.3%<br><b>UEL/UFL:</b> 7.9%<br><b>Vapor Density:</b> 2.77<br><b>Vapor Pressure:</b> 75 mmHg<br><b>Specific Gravity:</b> 0.88<br><b>Incompatibilities:</b> Strong oxidizers, fluorides, perchlorates, and acids<br><b>Appearance and Odor:</b> Colorless to a light yellow liquid with an aromatic odor | Overexposure may result in irritation to the eyes, nose, throat, and respiratory system. CNS effects include giddiness, lightheadedness, headaches, staggered gait, fatigue, and lassitude and depression. Additional effects may include nausea. Long duration exposures may result in respiratory collapse. Regulated as an OSHA carcinogen. May cause damage to the blood forming organs and may cause a form of cancer called leukemia. |
| Ethylbenzene               | 100-41-4 | PID: I.P 8.76, High response with PID and 10.2 eV lamp.<br><br>FID: 100% response with FID.                   | Air sample using charcoal tube; carbon disulfide desorption; GC/FID detection. Sampling and analytical protocol in accordance with OSHA Method Number 07 or NIOSH Method Number 1501 Aromatic Hydrocarbon. | ACGIH and NIOSH:<br>100 ppm;<br>125 ppm<br>STEL<br><br>OSHA:<br>100 ppm<br><br>IDLH:<br>800 ppm | Adequate - Can use air-purifying respirator with organic vapor cartridge up to 1,000 ppm.<br><br><b>Recommended gloves:</b><br>Neoprene or nitrile w/ silver shield when potential for saturation;<br>Teflon >3.00 hrs.  | <b>Boiling Pt:</b> 277°F; 136°C<br><b>Melting Pt:</b> -139°F; -95°C<br><b>Solubility:</b> 0.01%<br><b>Flash Pt:</b> 55°F; 13°C<br><b>LEL/LFL:</b> 1.0%<br><b>UEL/UFL:</b> 6.7%<br><b>Vapor Density:</b> 3.66<br><b>Vapor Pressure:</b> 10 mmHg @ 79°F; 26 °C<br><b>Specific Gravity:</b> 0.87<br><b>Incompatibilities:</b> Strong oxidizers<br><b>Appearance and odor:</b> Colorless liquid with an aromatic odor. Odor threshold of 0.092-0.60.        | Regulated primarily because of its potential to irritate the eyes and respiratory system.<br><br>In addition, effects of overexposure may include headaches, narcotic effects, CNS changes (i.e., coordination impairment, impaired reflexes, and tremoring), difficulty in breathing, possible chemical pneumonia, and potentially respiratory failure or coma.  |
| See notes at end of table. |          |   |  |   |  |   |   |

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**TABLE 6-1 (Continued)**  
**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**

| Substance                          | CAS No.   | Air Monitoring/Sampling Information   |  | Exposure Limits  | Warning Property Rating  | Physical Properties   | Health Hazard Information  |
|------------------------------------|-----------|---|--|--|--|---|--|
| Toluene                            | 108-88-3  | PID: I.P. 8.82 eV, High response with PID and 10.2 eV lamp.<br><br>FID: 110% response with FID. | Air sample using charcoal tube; carbon disulfide desorption. Sampling and analytical protocol will proceed in accordance with OSHA Method Number 07 or NIOSH Method Number 1500. | OSHA:<br>200 ppm<br>300 ppm (Ceiling)<br><br>ACGIH:<br>50 ppm (skin)<br><br>NIOSH:<br>100 ppm<br>150 ppm<br>STEL<br><br>IDLH:<br>500 ppm | Adequate - Odor threshold 1.6 ppm is considered good. Can use air-purifying respirator with organic vapor cartridge up to 1,000 ppm.<br><br><b>Recommended gloves:</b> Teflon >15.00 hrs; Viton >16.00 hrs; silver shield >6,00 hrs; supported nitrile (Useable time limit 0.5 hr, complete submersion or the nitrile selection); PV alcohol >25.00 hrs.     | <b>Boiling Pt:</b> 232°F; 111°C<br><b>Melting Pt:</b> -139°F; -95°C<br><b>Solubility:</b> 0.05% (61°F;16°C)<br><b>Flash Pt:</b> 40°F; 4°C<br><b>LEL/LFL:</b> 1.2%<br><b>UEL/UFL:</b> 7.1%<br><b>Vapor Density:</b> 3.14<br><b>Vapor Pressure:</b> 20 mmHg @ 65°F; 18 °C<br><b>Specific Gravity:</b> 0.87<br><b>Incompatibilities:</b> Strong oxidizers.<br><b>Appearance and odor:</b> Colorless liquid with a sweet pungent aromatic odor.                                 | Overexposure to this substance may result in mild to moderate irritation at the points of contact and CNS changes including euphoria, confusion, nervousness, and possibly paresthesia characterized by an abnormal burning sensation, pricking, or numbness.<br><br>At 200-500 ppm, exposure has resulted in headaches, nausea, eye irritation, loss of appetite, bad taste, impair coordination, fatigue, and weariness. Chronically, toluene overexposure may result in dermatitis, liver, and kidney damage. |
| Xylene<br>All isomers<br>o-,m-, p- | 1330-20-7 | PID: I.P. 8.56 eV, High response with PID and 10.2 eV lamp.<br><br>FID: 110% response with FID. | Air sample using charcoal tube; carbon disulfide desorption; GC/FID detection. Sampling and analytical protocol will proceed in accordance with OSHA 07 or NIOSH Method 1500.    | ACGIH and NIOSH:<br>100 ppm and<br>150 ppm<br>STEL<br><br>OSHA:<br>100 ppm<br><br>IDLH:<br>900 ppm                                       | Adequate - Odor thresholds for the following isomers: 0.6 m-; 5.4 p-; 20 o- ppm. Can use air-purifying respirator with organic vapor cartridge up to 1,000 ppm concentrations.<br><br><b>Recommended gloves:</b> PV Alcohol >12.67 hrs; Viton >8.00 hrs; CPE >1.00 hr; Butyl 0.87 hrs; Nitrile is acceptable for limited operations and contact (>0.20 hrs). | <b>Boiling Pt:</b> 269-281°F; 132-138°C<br><b>Melting Pt:</b> -130/-54m/56p°F; -25o/-48m/13p °C<br><b>Solubility:</b> 0.02 %<br><b>Flash Pt:</b> 81-90°F;27-32°C<br><b>LEL/LFL:</b> 0.9%<br><b>UEL/UFL:</b> 7.0%<br><b>Vapor Density:</b> 3.66<br><b>Vapor Pressure:</b> 7-9 mmHg @ 70°F; 21°C<br><b>Specific Gravity:</b> 0.86-0.88<br><b>Incompatibilities:</b> Strong oxidizers and strong acids.<br><b>Appearance and odor:</b> Colorless liquid with an aromatic odor. | Effects of overexposure include irritation at the points of contact, CNS changes (i.e., dizziness, excitement, drowsiness, incoherent, and staggering gait), difficulty in breathing, pulmonary edema, and possibly respiratory failure.<br><br>Chronic effects may include dermatitis and cornea vacuolization.   |
| See notes at end of table.         |           |   |  |  |  |   |  |

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**TABLE 6-1 (Continued)  
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**

| Substance   | CAS No.   | Air Monitoring/Sampling Information   |  | Exposure Limits  | Warning Property Rating  | Physical Properties   | Health Hazard Information   |
|---|---|---|--|--|--|---|---|
| General PAHs / Coal Tar Pitch Volatiles / Creosote / cresol (fluoranthene, pyrene, benzo(a)anthracene, benzo(a)pyrene, benzo(f)fluoranthene, benzo(k)fluoranthene, etc.)  | (CAS Numbers vary depending on specific compound) | PID: I.P. of 8.97 eV, relative response ratio unknown.<br><br>FID: Response factor unknown, but given the substances flammability, detection by FID can be anticipated. | Refer to NIOSH methods for each specific compound for appropriate air sampling protocols.<br><br>Many PAHs can be sampled using NIOSH Method 5506 or 5515 - Teflon filter with support ring - High pressure liquid chromatography with UV detector.<br><br>For cresol (a major constituent of creosote) by silica gel or xad-7 sorbent tube: Acetone desorption and analysis by GC/FID or high-pressure liquid chromatography. (NIOSH Method Number 2001 or OSHA Method Number 32) | <b>General PAHs:</b><br>Most PAHs have no established exposure limits. Other Coal Tar Pitch Volatiles/PAHs, such as chrysene and benzo(a)pyrene, have an exposure limit of :<br>OSHA: 0.2 mg/m <sup>3</sup><br>ACGIH: Exposure by all routes should be carefully controlled to levels as low as possible.<br>NIOSH: 0.1 mg/m <sup>3</sup><br><br><b>Creosote / Cresol:</b><br>OSHA; ACGIH: 5 ppm - 22 mg/m <sup>3</sup><br>NIOSH: 2.3 ppm - 10 mg/m <sup>3</sup><br>IDLH: 80 mg/m <sup>3</sup> | Adequate - Can use full-face air-purifying respirator with organic vapor / dust /mist cartridge up to 25C ppm. Cresol has an Ocor threshold of 0.00005-0.0079 ppm.<br><br><b>Recommended gloves:</b> Viton >96.00 hrs;<br>butyl rubber >90.00 hrs;<br>neoprene >4.50 hrs | Properties of various PAHs/Coal Tar Pitch Volatiles vary depending upon the specific compound.<br><br><i>For Creosote/Cresol:</i><br><b>Boiling Pt:</b> 376-397°F; 191-203°C<br><b>Melting Pt:</b> 52-96°F; 10.9-35.5°C<br><b>Solubility:</b> Insoluble<br><b>Flash Pt:</b> 178°F; 81°C<br><b>LEL/LFL:</b> Not available<br><b>UEL/UFL:</b> Not available<br><b>Vapor Density:</b> 3.72<br><b>Vapor Pressure:</b> 1 mmHg @ 100-127°F; 38-53°C<br><b>Specific Gravity:</b> 1.030-1.038<br><b>Incompatibilities:</b> Nitric acid, olæum, chlorosulfonic acid, oxidizers.<br><b>Appearance and Odor:</b> Yellowish or colorless, flammable, oily liquid (often brownish because of impurities or oxidation). | Regulated based on effects on respiratory tract and skin irritation Other effects may include eye irritation and CNS disturbances. Acute exposures may result in difficulty breathing, respiratory failure, and skin and eye irritation, and burns. Chronic exposure may damage the liver, kidneys, lungs and skin, and cause photosensitivity.<br><br>IARC, NTP, NIOSH, ACGIH, and the USEPA list some PAHs such as benzo(a)pyrene as a potential carcinogen (ARC 2A, NTP-2, ACGIH TLV-A2, NIOSH-X, EPA-B2). |
| <p>Notes:<br/>                     I.P = Ionization Potential<br/>                     ACGIH = American Conference of Governmental Industrial Hygienists<br/>                     °C = Degrees Celsius<br/>                     IDLH = Immediate Dangerous to Life or Health<br/>                     UV = Ultraviolet</p> <p>                     USEPA = United States Environmental Protection Agency<br/>                     NIOSH = National Institute for Occupational Safety and Health<br/>                     °F = Degrees Fahrenheit<br/>                     GC = Gas Chromatography<br/>                     mg/m<sup>3</sup> = Milligrams per Cubic Meter</p> <p>                     mmHg = Millimeters of Mercury<br/>                     CNS = Central Nervous System<br/>                     NTP = National Toxicity Program</p> |   |   |  |  |  |   |   |

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## **6.2 PHYSICAL HAZARDS**

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

- Slip, trip, and fall hazards.
- Strain/muscle pulls from manual lifting.
- Entanglement or contact with moving or rotating equipment/machinery.
- Contact with energized sources (above ground and underground).
- Heat stress.
- Cuts and lacerations.

### **6.2.1 Cuts and Lacerations**

The potential exists for workers to suffer cuts or lacerations given the use of heavy equipment, hand tools, knives, and the handling and assembly of sampling/drilling equipment. Keeping hands, fingers, and other body parts away from pinch points, moving parts, and other sharp surfaces is the primary control method to prevent cuts and lacerations. Leather work gloves and other protective equipment can also be used to prevent injuries. Cuts or lacerations often occur while using box cutters or other cutting devices when slicing Teflon or silicon tubing used in groundwater sampling apparatus or when opening or sealing boxes and sampling coolers. In order to minimize injury, use the following precautions:

- Always cut away from the body and others.
- Never use your thumb to put pressure on tubing while cutting from the opposite side.
- Change the knife blades frequently. Many accidents result from struggling with a dull cutting edge.

## **6.3 NATURAL HAZARDS**

Some of the proposed sample areas appear to be in maintained areas, often grassy areas. Although not anticipated to be a significant problem, insect/animal bites and stings and inclement weather are natural hazards that may be present given the location of activities to be conducted. In general, avoidance of areas of known infestation or growth will be the preferred exposure control for insects/animals. Specific discussions on principle hazards of concern are discussed below.

### **6.3.1 Insect/Animal Bites and Stings**

Various insects and animals may be present and should be considered. For example, fire ants present a unique situation when working outdoors in Florida. Their aggressive behavior and their ability to sting repeatedly can pose a unique health threat. The sting injects venom (formic acid) that causes an extreme burning sensation. Pustules form, which can become infected if scratched. Allergic reactions of people sensitive to the venom include dizziness, swelling, shock, and in extreme cases unconsciousness and death. People exhibiting such symptoms should see a physician. Fire ants can be identified by their habitat. They build mounds in open sunny areas, sometimes supported by a wall or shrub. The mound has no external opening. The size of the mound can range from a few inches across to some which are in excess of 2 ft or more in height and diameter. When disturbed, they defend the mound by swarming out and over it, even running up grass blades and sticks.

Also, areas to be investigated could be prime nesting and/or hiding locations for snakes and other insects. Personnel should avoid reaching into areas that are not visibly clear of snakes or insects. Snake chaps will be worn in areas of known or anticipated snake infestation. Site 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 and the FOL and SSO notified.

### **6.3.2 Inclement Weather**

Project tasks under this scope of work will be performed outdoors and near water. As a result, inclement weather may be encountered. In the event that adverse weather conditions arise (i.e., electrical storms, hurricanes, etc.), the FOL and/or the SSO will be responsible for temporarily suspending or terminating activities until hazardous conditions no longer exist.

#### **Tropical Storms and Hurricanes**

NS Mayport is located in an area that may receive tropical storms and hurricane activity. The following information is supplied to explain the potential severity of these natural hazards. The decision to curtail operations and evacuate the area should be made by the FOL, TOM, and the HSM.

During the early summer to late fall months, typically from the first of June through the end of November, disturbances migrating off the West Coast of Africa move into the Atlantic Ocean and develop into tropical cyclones known as tropical storms and hurricanes. Many of these cyclones become strong enough to

threaten life and property along the Eastern Seaboard and Gulf Coast. There are three main threats associated with tropical storms and hurricanes:

- High winds
- Excessive rainfall
- Storm surge

The impacts of high winds and excessive rainfall occur hours, maybe days, before the tropical storm or hurricane makes landfall. However, the storm surge accompanies the storm or hurricane at the time that landfall occurs.

### High Winds

Sustained winds vary greatly from storm to storm, but can range from 39 to 73 miles per hour (mph) (wind speeds associated with a tropical storm) to greater than 74 mph (minimal wind speed for a Category 1 hurricane). Table 6-2 compares the type of storm or hurricane and the corresponding wind speed.

**TABLE 6-2  
TROPICAL STORM/HURRICANE RATING SCALE**

| TYPE                | CATEGORY* | WINDS (MPH) |
|---------------------|-----------|-------------|
| Tropical Depression | NA        | >35 – 38    |
| Tropical Storm      | NA        | 39 – 73     |
| Hurricane           | 1         | 74 – 95     |
| Hurricane           | 2         | 96 – 110    |
| Hurricane           | 3         | 111 – 130   |
| Hurricane           | 4         | 131 – 155   |
| Hurricane           | 5         | >155        |

\*Based on the Saffir-Simpson scale  
NA – Not Applicable

In addition to strong winds, there is the threat of debris (i.e., building material, trees, etc.) becoming airborne projectiles as they are carried by the high winds. Thunderstorms and tornadoes embedded within the tropical storm or hurricane can further increase the wind speeds on a localized level.

### Excessive Rainfall

Heavy rains associated with tropical storms and hurricanes also vary greatly from storm to storm. On average, an inch of rainfall an hour is not uncommon with major hurricanes; somewhat lesser amounts with

tropical storms. However, the primary threat is not the intensity of rain, but the duration of rainfall. Since many tropical storms and hurricanes are slow-movers, they are capable of producing sustained heavy rainfall over a long period of time. It is not uncommon for an area to receive nearly 20 inches of rain in 24 hours. Under these conditions, street, stream, and creek flooding is inevitable only to be exacerbated by locally heavier rains from thunderstorms.

### Storm Surge

The storm surge is an abnormal rise in sea level accompanying a hurricane or tropical storm. The height of the storm surge (usually measured in ft) is the difference in sea level from the observed level (during the storm) and the level that would have occurred in the absence of the storm or hurricane. The more intense the storm or hurricane, the higher the storm surge. Storm surges become even higher if they occur during periods of high tide. Table 6-3 defines some of the terminology and possible calls to action regarding tropical cyclones.

**TABLE 6-3  
TROPICAL STORM/HURRICANE  
WATCH AND WARNING**

| <b>STORM DESCRIPTION</b> | <b>DEFINITION</b>   | <b>CALL TO ACTION</b>  |
|--------------------------|---|--|
| Tropical Storm Watch     | Tropical storm conditions are possible in the specified area of the watch, usually within 36 hours.   | Weather conditions should be monitored for further advisories.<br><br>Prepare for possible evacuation by local officials.  |
| Tropical Storm Warning   | Tropical storm conditions are expected in the specified area of the warning, usually within 24 hours. | Work should be suspended in areas where lightning, high winds, and rainfall could pose a threat to life.<br><br>Local officials may enforce mandatory evacuations. |
| Hurricane Watch          | Hurricane conditions are possible in the specified area of the watch, usually within 36 hours.        | Weather conditions should be monitored for further advisories.<br><br>Prepare for possible evacuation by local officials   |
| Hurricane Warning        | Hurricane conditions are expected in the specified area of the warning, usually within 24 hours.      | Local officials will most likely enforce mandatory evacuations.  |

A National Oceanic and Atmospheric Administration (NOAA) Weather Radio is the best means to receive watches and warnings from the National Weather Service. The National Weather Service continuously broadcasts updated hurricane advisories that can be received by widely available NOAA Weather Radios.

### 6.3.3 Heat Stress

Given the geographic location of the site and the project schedule, overexposure to high ambient temperatures (heat stress) may exist during performance of this work depending on the project schedule. Work performed when ambient temperatures exceed 70°F may result in varying levels of heat stress (i.e., heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content. Additionally, workload and level of protective equipment will affect the degree of exposure. Site personnel will be encouraged to drink plenty of fluids to replace those lost through perspiration. Additional information, such as Work-Rest Regimens and personnel monitoring, may be found in Section 4.0 of the Health and Safety Guidance Manual.

Many of these physical hazards are discussed in detail in Section 4.0 of the Health and Safety Guidance Manual. Additional information regarding physical hazards associated with the site is provided in Table 5-1 of this HASP.

**Note: During times of extreme heat above 80°F, short pants will be permitted for use by field crews. If other hazards exist, such as natural hazards (ticks or insects) or operating machinery, long pants will be required.**

## 7.0 AIR MONITORING

Direct reading instruments will be used at the site to detect and evaluate the presence of site contaminants and other potentially hazardous conditions. As a result, specific air monitoring measures and requirements are established in Table 5-1 pertaining to the specific hazards and tasks of an identified operation. Additionally, the Health and Safety Guidance Manual, Section 1.0, contains detailed information regarding direct reading instrumentation, as well as general calibration procedures of various instruments.

### 7.1 INSTRUMENT AND USE

A direct reading instrument will be used primarily to monitor source points (i.e., soil borings, monitoring wells, etc.) and worker breathing zone areas, while observing instrument action levels. Action levels are discussed in Table 5-1 as they may apply to a specific task or location.

#### 7.1.1 Photoionization Detector (PID)

In order to accurately monitor for any substances that may present an exposure potential to site personnel, a PID using lamp energy of 10.6 eV or higher will be used. This instrument will be used to monitor potential source areas and to screen the breathing zones of employees during site activities. The PID with this lamp strength has been selected because it is capable of detecting the organic vapors of concern (isopropyl benzene and BTEX compounds).

Prior to the commencement of any field activities, the background levels of the site must be determined and noted. Daily background readings will be taken away from any areas of potential contamination. These readings, any influencing conditions (i.e., weather, temperature, and humidity), and site location must be documented in the field operations logbook or other site documentation (i.e., sample log sheet).

#### 7.1.2 Hazard Monitoring Frequency

Table 5-1 presents the frequencies that hazard monitoring will be performed, as well as the action levels that will initiate the use of elevated levels of protection. The SSO may decide to increase these frequencies based on instrument responses and site observations. The frequency at which monitoring is performed will not be reduced without the prior consent of the PHSO or HSM.

## 7.2 INSTRUMENT MAINTENANCE AND CALIBRATION

Hazard monitoring instruments will be maintained and pre-field calibrated by the TtNUS Equipment Manager. Operational checks and field calibration will be performed on the instruments each day prior to and after 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 SOPs (copies of which can be found in the Health and Safety Guidance Manual, which will be maintained on site for reference). The 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. The 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 (i.e., lot number, source concentration, and supplier).
- Any relevant comments or remarks.



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

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

This section is included to specify health and safety training and medical surveillance requirements for TtNUS personnel participating in on site activities. TtNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at NS Mayport. TtNUS personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training within the past 12 months before being cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120(e)(4) will be required for site supervisory personnel.

Documentation of TtNUS introductory, 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.

#### **8.1.1 Requirements for Subcontractors**

Identified TtNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and 8 hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) prior to performing field work at NS Mayport. TtNUS subcontractors must certify that each employee has had such training by sending TtNUS a letter on company letterhead containing the information in the example letter provided in Figure 8-1. Training certificates or some other form of official documentation will accompany this letter for subcontractor personnel participating in site activities.

**FIGURE 8-1  
EXAMPLE TRAINING LETTER**

The following statements must be typed on company letterhead and signed by an officer of the company and accompanied by copies of personnel training certificates:

LOGO  
XYZ CORPORATION  
555 E. 5th Street  
Nowheresville, Kansas 55555

Month day, year

Mr. Mark Peterson, P.G.  
Task Order Manager  
Tetra Tech NUS, Inc.  
8640 Philips Highway, Suite 16  
Jacksonville, Florida 32256

Subject: HAZWOPER Training for Naval Air Station Mayport, Florida

Dear Mr. Peterson:

As an officer of XYZ Corporation, I hereby state that I am aware of the potential hazardous nature of the subject project. I also understand that it is our responsibility to comply with applicable occupational safety and health regulations, including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 126.

I also understand that Title 29 CFR 1910.120, entitled "Hazardous Waste Operations and Emergency Response," requires an appropriate level of training for certain employees engaged in hazardous waste operations. In this regard, I hereby state that the following employees have had 40 hours of introductory hazardous waste site training or equivalent work experience as requested by 29 CFR 1910.120(e) and have had 8 hours of refresher training as applicable and as required by 29 CFR 1910.120(e)(8) and that site supervisory personnel have had training in accordance with 29 CFR 1910.120(e)(4).

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have any questions, please contact me at (555) 555-5555.

Sincerely,

(Name and Title of Company Officer)

## **8.2 SITE-SPECIFIC TRAINING**

TtNUS will provide site-specific training to TtNUS personnel who will perform work on this project. Site-specific training will include the following:

- Names of designated personnel and alternates responsible for site safety and health.
- Safety, health, and other hazards present on site.
- Use of PPE.
- Work practices to minimize risks from hazards.
- Medical surveillance requirements.
- Signs and symptoms of overexposure to site contaminants.
- Contents of the HASP.
- Emergency response procedures (evacuation and assembly points).
- Spill response procedures.
- Review of the contents of relevant MSDSs.
- Review of the uses of Safe Work Permits.

Site-specific training documentation will be established through the use of Figure 8-2.

## **8.3 MEDICAL SURVEILLANCE**

TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TtNUS' medical surveillance program. Documentation for medical clearances will be maintained in the TtNUS Pittsburgh office and made available, as necessary.

### **8.3.1 Medical Surveillance Requirements for Subcontractors**

Identified subcontractors are required to obtain a certificate of their ability to perform hazardous waste site work and to wear respiratory protection. The "Subcontractor Medical Approval Form" provided in Figure 8-3 will be used to satisfy this requirement, providing it is properly completed and signed by a licensed physician.

Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of OSHA 29 CFR 1910.120 can substitute the "Subcontractor Medical Approval Form" with a letter on company letterhead containing the information in the example letter presented in Figure 8-4 of this HASP.



**FIGURE 8-3  
SUBCONTRACTOR MEDICAL APPROVAL FORM**

For employees of \_\_\_\_\_  
Company Name

Participant Name: \_\_\_\_\_ Date of Exam: \_\_\_\_\_

**Part A**

The above-named individual has:

1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f) and found to be medically -  
  
 qualified to perform work at the NS Mayport work site  
 not qualified to perform work at the NS Mayport work site  
  
and,
2. Undergone a physical examination as per OSHA 29 CFR 1910.134(b)(10) and found to be medically -  
  
 qualified to wear respiratory protection  
 not qualified to wear respiratory protection

My evaluation has been based on the following information, as provided to me by the employer.

- A copy of OSHA Standard 29 CFR 1910.120 and appendices.
- A description of the employee's duties as they relate to the employee's exposures.
- A list of known/suspected contaminants and their concentrations (if known).
- A description of any personal protective equipment used or to be used.
- Information from previous medical examinations of the employee, which is not readily available to the examining physician.

**Part B**

I, \_\_\_\_\_, have examined \_\_\_\_\_  
Physician's Name (print) Participant's Name (print)

and have determined the following information:

**FIGURE 8-3  
SUBCONTRACTOR MEDICAL APPROVAL FORM  
PAGE TWO**

1. Results of the medical examination and tests (excluding finding or diagnoses unrelated to occupational exposure):

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

2. Any detected medical conditions that would place the employee at increased risk of material impairment of the employee's health:

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

3. Recommended limitations upon the employee's assigned work:

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

I have informed this participant of the results of this medical examination and any medical conditions, which require further examination of treatment.

Based on the information provided to me, and in view of the activities and hazard potentials involved at the NS Mayport work site, this participant

- may  
 may not

perform his/her assigned task.

Physician's Signature \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

NOTE: Copies of test results are maintained and available at:

\_\_\_\_\_  
Address

**FIGURE 8-4  
EXAMPLE  
MEDICAL SURVEILLANCE LETTER**

The following statements must be typed on company letterhead and signed by an officer of the company:

LOGO  
XYZ CORPORATION  
555 E. 5th Street  
Nowheresville, Kansas 55555

Month day, year

Mr. Mark Peterson, P.G.  
Task Order Manager  
Tetra Tech NUS, Inc.  
8640 Philips Highway, Suite 16  
Jacksonville, Florida 32256

Subject: HAZWOPER Training for NAVSTA Mayport, Florida

Dear Mr. Peterson:

As an officer of XYZ Corporation, I hereby state that the persons listed below participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations (CFR) Part 1910.120, entitled "Hazardous Waste Operations and Emergency Response." I further state that the persons listed below have had physical examinations under this program within the past 12 months and that they have been cleared, by a license physician, to perform hazardous waste site work and to wear positive- and negative-pressure respiratory protection. I also state that, to my knowledge, no person listed below has any medical restriction that would preclude him/her from working at NAVSTA Mayport.

LIST OF FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have any questions, please contact me at (555) 555-5555.

Sincerely,

(Name and Title of Company Officer)

**8.3.2      Requirements for Field Personnel**

Each field team member (including subcontractors) and visitors entering the Exclusion Zone(s) will be required to complete and submit a copy of Medical Data Sheet found in the TtNUS Health and Safety Guidance Manual. This will be provided to the SSO prior to participating in site activities. The purpose of this document is to provide site personnel and emergency responders with additional information that may be necessary in order to administer medical attention.

**8.4            SUBCONTRACTOR EXCEPTIONS**

In situations in which the Exclusion Zone is not entered or when there is no potential for exposure to site contaminants, subcontractor personnel may be exempt from some of the training and medical surveillance requirements. Subcontractors and visiting personnel are required to receive site-specific training (as discussed in Section 8.2) regarding information provided in this HASP. Examples of subcontractors who may be exempt from training and medical surveillance requirements may include surveyors who perform surveying activities at the site perimeters or in areas where there is no potential for exposure to site contaminants and, in this case the subcontractor providing concrete coring services.

**The use of the subcontractor exception is strictly limited to the authority of the CLEAN HSM.**

## **9.0 SITE CONTROL**

This section outlines the means by which TtNUS 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 the following three-zone approach will be used during work at this site: Exclusion Zone, Contamination Reduction Zone, and 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 potentials for the spread of contaminants, and protect individuals who are not cleared to enter the work areas.

### **9.1 EXCLUSION ZONE**

The Exclusion Zone will be considered those areas of the site of known or suspected contamination. The Exclusion Zone for sampling activities will be 10 ft around the sample location.

### **9.2 CONTAMINATION REDUCTION ZONE**

The Contamination Reduction Zone 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 may 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.

### **9.3 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. 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.

### **9.4 SAFE WORK PERMITS**

Exclusion Zone activities conducted in support of this project will be done so using this HASP as a reference guide and Safe Work Permits to incorporate site-specific information to guide and direct field crews on a task by task basis. An example of the Safe Work Permit to be used during site activities is illustrated in Figure 9-1. Permits will be issued by the SSO prior to the beginning of on-site activities. Partially completed Safe Work Permits are included in Attachment III of this HASP.

**FIGURE 9-1  
SAFE WORK PERMIT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): \_\_\_\_\_
- II. Required Monitoring Instruments: \_\_\_\_\_
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted  Yes  No Initials of Inspector \_\_\_\_\_  
TtNUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- V. Protective equipment required      Respiratory equipment required
  - Level D  Level B       Full face APR       Escape Pack
  - Level C  Level A       Half face APR       SCBA
  - Detailed on Reverse      SAR       Bottle Trailer
  - Skid Rig       None

Modifications/Exceptions: \_\_\_\_\_

| VI. Chemicals of Concern | Action Level(s) | Response Measures |
|--------------------------|-----------------|-------------------|
| _____                    | _____           | _____             |
| _____                    | _____           | _____             |
| _____                    | _____           | _____             |

- VII. Additional Safety Equipment/Procedures
 

|                                     |  |                                       |  |
|-------------------------------------|--|---------------------------------------|--|
| Hard-hat .....                      | <input type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs) .... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Glasses .....                | <input type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness .....             | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Chemical/splash goggles .....       | <input type="checkbox"/> Yes <input type="checkbox"/> No | Radio .....                           | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash Shield .....                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | Barricades .....                      | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash suits/coveralls .....        | <input type="checkbox"/> Yes <input type="checkbox"/> No | Gloves (Type - Work) .....            | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe Work shoes or boots ..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen .....               | <input type="checkbox"/> Yes <input type="checkbox"/> No |

- VIII. Procedure review with permit acceptors      Yes      NA      Yes      NA
 

|  |                          |                          |                         |                          |                          |
|--|--------------------------|--------------------------|-------------------------|--------------------------|--------------------------|
| Safety shower/eyewash (Location & Use) .....   | <input type="checkbox"/> | <input type="checkbox"/> | Emergency alarms .....  | <input type="checkbox"/> | <input type="checkbox"/> |
| Procedure for safe job completion .....        | <input type="checkbox"/> | <input type="checkbox"/> | Evacuation routes ..... | <input type="checkbox"/> | <input type="checkbox"/> |
| Contractor tools/equipment/PPE inspected ..... | <input type="checkbox"/> | <input type="checkbox"/> | Assembly points .....   | <input type="checkbox"/> | <input type="checkbox"/> |

- IX. Site Preparation
 

|   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| Utility Locating and Excavation Clearance completed .....     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Vehicle and Foot Traffic Routes Cleared and Established ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physical Hazards Barricaded and Isolated .....                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Equipment Staged .....                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- X. Additional Permits required (Hot work, confined space entry, excavation etc.) .....
- |                              |                             |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|
- If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

XI. Special instructions, precautions: \_\_\_\_\_

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

Safe Work Permits are to be completed in accordance with the specifications contained in Table 5-1 and the other sections of the HASP as appropriate.

## **9.5 SITE VISITORS**

Site visitors for the purpose of this document are identified as representing the following groups of individuals:

- Personnel invited to observe or participate in operations by TtNUS.
- Regulatory personnel [i.e., Department of Defense (DoD), USEPA, OSHA, Florida Department of Environmental Protection, etc.].
- SOUTHNAVFACENGCOM Navy personnel.
- Other authorized visitors.

Non-DoD personnel working on this project are required to gain initial access to the Base by coordinating with the TtNUS FOL or designee and following established Base access procedures.

Once access to the Base is obtained, personnel who require site access into areas of ongoing operations will be required to obtain permission from the FOL and the Navy On-Site Representative. Upon gaining access to the site, site visitors wishing to observe operations in progress will be escorted by a TtNUS representative and will be required to meet the minimum requirements discussed 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 individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
- Site visitors will be required to produce the necessary information supporting clearance to the site. This will include information attesting to applicable training and medical surveillance as stipulated in Section 8.0 of this document. In addition, to enter the site 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 operational zone. Visitors are required to observe the protective equipment and site restrictions in effect at the site at the time of their visit. A TtNUS representative will accompany visitors entering the Exclusion Zones during ongoing operations. 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 the termination of on-site activities until the unauthorized visitor is

removed from the premises. Removal of unauthorized visitors will be accomplished with support from the Navy On-Site Representative. If necessary, the Navy On-Site Representative will be notified of any unauthorized visitors.

#### **9.6 SITE SECURITY**

Site security will be accomplished using TtNUS field personnel. TtNUS will retain complete control over active operational areas. As this activity takes place at a Navy facility open to public access, the first line of security will take place using Exclusive Zone barriers, site work permits, and any existing barriers at the sites to restrict the general public. The second line of security will take place at the work site referring interested parties to the Navy On-Site Representative. The Navy On-Site Representative will serve as a focal point for Base personnel, interested parties, and serve as the final line of security and the primary enforcement contact.

#### **9.7 SITE MAP**

Once the areas of contamination, access routes, topography, and dispersion routes are determined, a site map will be generated and adjusted as site conditions change. These maps will be posted to illustrate an up-to-date collection of contaminants and adjustment of zones and access points.

#### **9.8 BUDDY SYSTEM**

Personnel engaged in on-site activities will practice the "buddy system" to ensure the safety of personnel involved in this operation.

#### **9.9 MSDS REQUIREMENTS**

TtNUS 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 Health and Safety Guidance Manual. The MSDSs will then be maintained in a central location (i.e., temporary office) and will be available for anyone to review upon request.

#### **9.10 COMMUNICATION**

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

External communication will be accomplished by using cellular telephones. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of activities at NS Mayport, the FOL will determine and arrange for telephone communications.

## **10.0 SPILL CONTAINMENT PROGRAM**

### **10.1 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.

### **10.2 POTENTIAL SPILL AREAS**

Should drums contain liquid wastes, potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Areas designated for handling, loading, and unloading of potentially contaminated waters and debris present limited potential for leaks or spills.

The drums/containers used for containing liquids will be sealed, labeled, and staged within a centralized area awaiting shipment or disposal.

### **10.3 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 into a new container using a hand pump. 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. The inspections will be documented in the Project Logbook.

#### **10.4 PERSONNEL TRAINING AND SPILL PREVENTION**

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.

#### **10.5 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 United States Department of Transportation (DOT) 17-E or 17-H].
- Shovels, rakes, and brooms.
- Labels.

#### **10.6 SPILL CONTROL PLAN**

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

- 1) Notify the SSO or FOL immediately.
  
- 2) 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.

## 11.0 CONFINED-SPACE ENTRY

It is not anticipated, under the proposed scope of work, 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 any confined spaces. A confined space is defined as an area which has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

A Permit-Required Confined Space is one that:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized, serious safety or health hazard.

For further information on confined space, consult the Health and Safety Guidance Manual 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.

## 12.0 MATERIALS AND DOCUMENTATION

The TtNUS FOL will ensure the following materials/documents are taken to the project site and used when required:

- A complete copy of this HASP.
- Health and Safety Guidance Manual.
- Incident Reports.
- Medical Data Sheets.
- MSDSs for the chemicals brought on-site, including decontamination solution, fuels, sample preservations, calibration gases, etc.
- A full size OSHA Job Safety and Health Poster.
- Training/Medical Surveillance Documentation Form (blank).
- Emergency Reference Form (Section 2.0, extra copy for posting).

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.

**MSDS (maintained)** - The MSDSs should also be in a central area accessible to 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 and 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 will ensure that this poster is not defaced, altered, or covered by other material.

**The OSHA Job Safety and 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 will 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). This list identifies site personnel, dates of training (including site-specific training), and medical surveillance. The lists indicate not only clearance, but also status. If personnel do not meet these requirements, they do not enter the site while 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. A copy of this sheet or a wallet card will be given to personnel to be carried on their person.

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

### 13.0 GLOSSARY

|                   |   |
|-------------------|---|
| ACGIH             | American Conference of Governmental Industrial Hygienists |
| BTEX              | Benzene, Toluene, Ethylbenzene, and Xylenes               |
| CFR               | Code of Federal Regulations                               |
| CLEAN             | Comprehensive Long-term Environmental Action Navy         |
| CNS               | Central Nervous System                                    |
| COCs              | Contaminants of Concern                                   |
| CTO               | Contract Task Order                                       |
| °C                | Degrees Celsius   |
| °F                | Degrees Fahrenheit  |
| DoD               | Department of Defense                                     |
| DOT               | United States Department of Transportation                |
| eV                | Electron Volt   |
| FID               | Flame Ionization Detector                                 |
| FOL               | Field Operations Leader                                   |
| ft                | Feet or Foot  |
| GC                | Gas Chromatography  |
| HASP              | Health and Safety Plan                                    |
| HAZWOPER          | Hazardous Waste Operations and Emergency Response         |
| HSM               | Health and Safety Manager                                 |
| IDLH              | Immediate Dangerous to Life or Health                     |
| IDW               | Investigative-Derived Waste                               |
| mg/m <sup>3</sup> | Milligrams per Cubic Meter                                |
| mm/Hg             | Millimeters of Mercury                                    |
| mph               | Miles Per Hour  |
| MSDSs             | Material Safety Data Sheets                               |
| NS                | Naval Station   |
| Navy              | United States Navy  |
| NIOSH             | National Institute for Occupational Safety and Health     |
| NOAA              | National Oceanic and Atmospheric Administration           |
| NTP               | National Toxicity Program                                 |
| OSHA              | Occupational Safety and Health Administration             |
| PAHs              | Polynuclear Aromatic Hydrocarbons                         |
| PHSO              | Project Health and Safety Officer                         |
| PID               | Photoionization Detector                                  |
| PPE               | Personal Protective Equipment                             |

|                   |   |
|-------------------|---|
| ppm               | Parts per Million                                       |
| PVC               | Polyvinyl Chloride                                      |
| SOPs              | Standard Operating Procedures                           |
| SOUTHNAVFACENGCOM | Southern Division, Naval Facilities Engineering Command |
| SSO               | Site Safety Officer                                     |
| TBD               | To Be Determined  |
| TOM               | Task Order Manager                                      |
| TRPH              | Total Recoverable Petroleum Hydrocarbons                |
| TtNUS             | Tetra Tech NUS, Inc.                                    |
| USEPA             | United States Environmental Protection Agency           |
| UST               | Underground Storage Tank                                |
| UV                | Ultraviolet   |
| VOCs              | Volatile Organic Compounds                              |

# **ATTACHMENT I**

## **INJURY/ILLNESS PROCEDURE AND REPORT FORM**



case no. \_\_\_\_\_

## **TETRA TECH NUS, INC.**

### **INJURY/ILLNESS PROCEDURE WORKER'S COMPENSATION PROGRAM**

---

#### **WHAT YOU SHOULD DO IF YOU ARE INJURED OR DEVELOP AN ILLNESS AS A RESULT OF YOUR EMPLOYMENT:**

- If injury is minor, obtain appropriate first aid treatment.
- If injury or illness is severe or life threatening, obtain professional medical treatment at the nearest hospital emergency room.
- If incident involves a chemical exposure on a project work site, follow instructions in the Health & Safety Plan.
- Immediately report any injury or illness to your supervisor or office manager. In addition, you must contact your Human Resources representative, Marilyn Duffy at (412) 921-8475, and the Corporate Health and Safety Manager, Matt Soltis at (412) 921-8912 within 24 hours. You will be required to complete an Injury/Illness Report (attached). You may also be required to participate in a more detailed investigation from the Health Sciences Department.
- If further medical treatment is needed, The Hartford Network Referral Unit will furnish a list of network providers customized to the location of the injured employee. These providers are to be used for treatment of Worker's Compensation injuries subject to the laws of the state in which you work. Please call Marilyn Duffy at (412) 921-8475 for the number of the Referral Unit.

#### **ADDITIONAL QUESTIONS REGARDING WORKER'S COMPENSATION:**

Contact your local human resources representative, corporate health and safety coordinator, or Corporate Administration in Pasadena, California, at (626) 351-4664.

Worker's compensation is a state-mandated program that provides medical and disability benefits to employees who become disabled due to job related injury or illness. Tetra Tech, Inc. and its subsidiaries (Tetra Tech or Company) pay premiums on behalf of their employees. The type of injuries or illnesses covered and the amount of benefits paid are regulated by the state worker's compensation boards and vary from state to state. Corporate Administration in Pasadena is responsible for administering the Company's worker's compensation program. The following is a general explanation of worker's compensation provided in the event that you become injured or develop an illness as a result of your employment with Tetra Tech or any of its subsidiaries. Please be aware that the term used for worker's compensation varies from state to state.



case no. \_\_\_\_\_

**WHO IS COVERED:**

Employees of Tetra Tech, whether they are on a full-time, part-time or temporary status, working in an office or in the field, are entitled to worker's compensation benefits. Employees must follow the above injury/illness reporting procedures. Consultants, independent contractors, and employees of subcontractors are not covered by Tetra Tech's Worker's Compensation plan.

**WHAT IS COVERED:**

If you are injured or develop an illness caused by your employment, worker's compensation benefits are available to you subject to the laws of the state you work in. Injuries do not have to be serious; even injuries treated by first aid practices are covered and must be reported. Please note that if you are working out-of-state and away from your home office, you are still eligible for worker's compensation benefits.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

To: \_\_\_\_\_  
Subsidiary Health and Safety Representative

Prepared by: \_\_\_\_\_

Position: \_\_\_\_\_

cc: \_\_\_\_\_  
Workers Compensation Administrator

Office: \_\_\_\_\_

Project name: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Project number: \_\_\_\_\_

Fax number: \_\_\_\_\_

**Information Regarding Injured or Ill Employee**

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

Office: \_\_\_\_\_

Home address: \_\_\_\_\_

Gender: M  F  No. of dependents: \_\_\_\_\_

Marital status: \_\_\_\_\_

Home telephone number: \_\_\_\_\_

Date of birth: \_\_\_\_\_

Occupation (regular job title): \_\_\_\_\_

Social security number: \_\_\_\_\_

Department: \_\_\_\_\_

Date of Accident: \_\_\_\_\_

Time of Accident: \_\_\_\_\_ a.m.  p.m.

Time Employee Began Work: \_\_\_\_\_

Check if time cannot be determined

**Location of Incident**

Street address: \_\_\_\_\_

City, state, and zip code: \_\_\_\_\_

County: \_\_\_\_\_

Was place of accident or exposure on employer's premises? Yes  No

**Information About the Incident**

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

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

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.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

Information About the Incident (Continued)

What was the injury or illness? Describe the part(s) of the body affected and how it was affected. Be more specific than "hurt," "pain," or "sore." Examples "Strained back"; "Chemical burn, right hand"; "Carpal tunnel syndrome, left wrist"

Describe the Object or Substance that Directly Harmed the Employee: Examples: "Concrete floor"; "Chlorine"; "Radial arm saw." If this question does not apply to the incident, write "Not applicable."

Did the employee die? Yes [ ] No [ ] Date of death: \_\_\_\_\_

Was employee performing regular job duties? Yes [ ] No [ ]

Was safety equipment provided? Yes [ ] No [ ] Was safety equipment used? Yes [ ] No [ ]

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

Witness (Attach additional sheets for other witnesses.)

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

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

Street address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip code: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Medical Treatment Required? [ ] Yes [ ] No [ ] First aid only

Name of physician or health care professional: \_\_\_\_\_

If treatment was provided away from the work site, provide the information below.

Facility name: \_\_\_\_\_

Street address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip code: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Was the employee treated in an emergency room? [ ] Yes [ ] No

Was the employee hospitalized over night as an in-patient? [ ] Yes [ ] No

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.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

Corrective Action(s) Taken by Unit Reporting the Accident:

Corrective Action Still to be Taken (by whom and when):

Name of Tetra Tech employee the injury or illness was first reported to: \_\_\_\_\_

Date of Report: \_\_\_\_\_ Time of Report: \_\_\_\_\_

I have reviewed this investigation report and agree, to the best of my recollection, with its contents.

Printed Name of Injured Employee \_\_\_\_\_

Telephone Number \_\_\_\_\_

Signature of Injured Employee \_\_\_\_\_

Date \_\_\_\_\_

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

| Title  | Printed Name | Signature | Telephone Number | Date |
|--|--------------|-----------|------------------|------|
| Office Manager   |              |           |                  |      |
| Project Manager  |              |           |                  |      |
| Site Safety Coordinator or<br>Office Health and Safety<br>Representative |              |           |                  |      |

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.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

**To Be Completed by the Subsidiary Health and Safety Representative**

**Classification of Incident:**

Injury     Illness

**Result of Incident:**

- First aid only
- Days away from work
- Remained at work but incident resulted in job transfer or work restriction
- Incident involved days away and job transfer or work restriction
- Medical treatment only

No. of days away from work \_\_\_\_\_

Date employee left work \_\_\_\_\_

Date employee returned to work \_\_\_\_\_

No. of days placed on restriction or job transfer: \_\_\_\_\_

OSHA Recordable Case Number \_\_\_\_\_

**To Be Completed by Human Resources**

Social security number: \_\_\_\_\_

Date of hire: \_\_\_\_\_ Hire date for current job: \_\_\_\_\_

Wage information: \$ \_\_\_\_\_ per  Hour  Day  Week  Month

Position at time of hire: \_\_\_\_\_

Current position: \_\_\_\_\_ Shift hours: \_\_\_\_\_

State in which employee was hired: \_\_\_\_\_

Status:  Full-time     Part-time    Hours per week: \_\_\_\_\_    Days per week: \_\_\_\_\_

Temporary job end date: \_\_\_\_\_

**To Be Completed during Report to Workers Compensation Carrier**

Date reported: \_\_\_\_\_ Reported by: \_\_\_\_\_

Confirmation number: \_\_\_\_\_

Name of contact: \_\_\_\_\_

Field office of claims adjuster: \_\_\_\_\_

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.

**ATTACHMENT II**

**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 \_\_\_\_\_

Name of Next Kin \_\_\_\_\_

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

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

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

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals \_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

Do you have any medical restrictions? \_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

I am the individual described above. I have read and understand this HASP.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## **ATTACHMENT III**

### **SAFE WORK PERMITS**

**SAFE WORK PERMIT FOR  
IDW HANDLING, SAMPLING, AND STAGING OF DRUMS  
NAVSTA MAYPORT, FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): IDW management and moving IDW drums to storage area.
- II. Required Monitoring Instruments: PID with 10.6 eV (or higher) lamp detect presence of VOCs
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted  Yes  No Initials of Inspector TtNUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- |  |  |  |
|--|--|--|
| IV. Protective equipment required  | Respiratory equipment required         |  |
| Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/>     |
| Level C <input type="checkbox"/> Level A <input type="checkbox"/>            | Half face APR <input type="checkbox"/> | Airline/SCBA <input type="checkbox"/>    |
| Detailed on Reverse  | PAPR <input type="checkbox"/>          | Bottle trailer <input type="checkbox"/>  |
|  | Skid Rig <input type="checkbox"/>      | None <input checked="" type="checkbox"/> |
- Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety shoes, hardhat, cotton/leather outer gloves with surgical-style inner gloves, impermeable boot covers.

- |  |  |  |
|--|--|--|
| V. Chemicals of Concern<br><u>BTEX, and PAHs</u> | Action Level(s)<br><u>Any sustained readings<br/>&gt;10 ppm above background<br/>in worker breathing zones</u> | Response Measures<br><u>Suspend site activities and<br/>report to an unaffected area until<br/>levels return to normal</u> |
|--|--|--|

- VI. Additional Safety Equipment/Procedures
- |  |   |
|--|---|
| Hard-hat ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                     | Hearing Protection (Plugs/Muffs) ... <input type="checkbox"/> Yes <input type="checkbox"/> No     |
| Safety Glasses ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No               | Safety belt/harness ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No     |
| Chemical/splash goggles ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                 | Radio ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                   |
| Splash Shield ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                           | Barricades..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No               |
| Splash suits/coveralls..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No        | Gloves (Type - Nitrile) ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe Work shoes or boots..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No       |
- Modifications/Exceptions: Tyvek coverall if there is a potential for soiling clothes. Work/rest regimen to be determined by SSO & site personnel

- |  |                                     |                          |                                     |                          |
|--|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| VII. Procedure review with permit acceptors    | Yes                                 | NA                       | Yes                                 | NA                       |
| Safety shower/eyewash (Location & Use).....    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Procedure for safe job completion .....        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Contractor tools/equipment/PPE inspected ..... | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Emergency alarms .....                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Evacuation routes.....                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Assembly points .....                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

- |  |                                     |                          |                                     |
|--|-------------------------------------|--------------------------|-------------------------------------|
| VIII. Site Preparation                                       | Yes                                 | No                       | NA                                  |
| Utility Locating and Excavation Clearance completed .....    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vehicle and Foot Traffic Routes Cleared and Established..... | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Physical Hazards Barricaded and Isolated.....                | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Emergency Equipment Staged.....                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

- IX. Additional Permits required (Hot work, confined space entry, excavation etc.) .....  Yes  No  
*If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

- X. Special instructions, precautions: Use caution when handling drums. Whenever possible use equipment or multiple personnel to prevent injuries resulting from overexertion. Beware of drums that have been exposed to heat or direct sunlight – a few accidents have occurred involving lids of pressurized drums striking field personnel. Mark all IDW containers appropriately. Inspect areas periodically for any leaks.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_



**SAFE WORK PERMIT FOR  
MULTI-MEDIA SAMPLING  
NAVSTA MAYPORT, FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Groundwater sampling. IDW sampling is also included in this task.
- II. Required Monitoring Instrument(s): FID or PID with 10.6 eV lamp (or higher) lamp source
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted  Yes  No Initials of Inspector TtNUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- |  |  |  |
|--|--|--|
| V. Protective equipment required   | Respiratory equipment required         |  |
| Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/>     |
| Level C <input type="checkbox"/> Level A <input type="checkbox"/>            | Half face APR <input type="checkbox"/> | SCBA <input type="checkbox"/>            |
| Detailed on Reverse  | PAPR <input type="checkbox"/>          | Bottle Trailer <input type="checkbox"/>  |
|  | Skid Rig <input type="checkbox"/>      | None <input checked="" type="checkbox"/> |

Modifications/Exceptions: Normal requirements include sleeved shirt and long pants, safety shoes, surgical style gloves, and safety glasses. However an exception will be made when sampling wells away from DPT/drilling operations and insect infested areas. When the temperatures exceed 80°F and at the direction of the Site Safety Officer long pants may be substituted with short pants. Hard hats and hearing protection will be worn when working near operating equipment or when required by the SSO.

- |                          |   |   |
|--------------------------|---|---|
| VI. Chemicals of Concern | Action Level(s)   | Response Measures   |
| <u>BTEX and PAHs</u>     | <u>Any sustained readings &gt;10 ppm above background in worker breathing zones</u> | <u>Suspend site activities and report to an unaffected area until levels return to normal</u> |

- VII. Additional Safety Equipment/Procedures
- |                                    |   |                                      |   |
|------------------------------------|---|--------------------------------------|---|
| Hard-hat .....                     | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Hearing Protection (Plugs/Muffs) ... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety Glasses .....               | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness .....            | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Chemical/splash goggles .....      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio .....                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash Shield .....                | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Barricades.....                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash suits/coveralls.....        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Gloves (Type – Surgical Style) ..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe Work shoes or boots..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen .....              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
- Modifications/Exceptions: Reflective vests for high traffic areas. Tyvek coverall if there is a potential for soiling work clothes.

- |  |                                     |                                     |                        |  |
|--|-------------------------------------|-------------------------------------|------------------------|--|
| VIII. Procedure review with permit acceptors   | Yes                                 | NA                                  | Yes                    | NA   |
| Safety shower/eyewash (Location & Use).....    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Emergency alarms ..... | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| Procedure for safe job completion .....        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Evacuation routes..... | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| Contractor tools/equipment/PPE inspected ..... | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Assembly points .....  | <input checked="" type="checkbox"/> <input type="checkbox"/> |

- |  |                          |                          |                                     |
|--|--------------------------|--------------------------|-------------------------------------|
| IX. Site Preparation   | Yes                      | No                       | NA                                  |
| Utility Locating and Excavation Clearance completed .....    | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vehicle and Foot Traffic Routes Cleared and Established..... | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Physical Hazards Barricaded and Isolated.....                | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Emergency Equipment Staged.....                              | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- X. Additional Permits required (Hot work, confined space entry, excavation etc.) .....
- Yes  No
- If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

XI. Special instructions, precautions: Use caution when cutting acetate sleeves or when handling heavy objects such as sample coolers.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

## **ATTACHMENT IV**

# **EQUIPMENT INSPECTION CHECKLIST**

**EQUIPMENT INSPECTION**

**COMPANY:** \_\_\_\_\_ **UNIT NO.** \_\_\_\_\_  
**FREQUENCY:** Inspect daily, document prior to use and as repairs are needed.

Inspection Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_\_\_ Equipment Type: \_\_\_\_\_  
 (e.g., bulldozer)

|   | Good                     | Need Repair              | N/A                      |
|---|--------------------------|--------------------------|--------------------------|
| Tires or tracks   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hoses and belts   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cab, mirrors, safety glass  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Turn signals, lights, brake lights, etc. (front/rear) for equipment approved for highway use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Is the equipment equipped with audible back-up alarms and back-up lights?                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Horn and gauges   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Brake condition (dynamic, park, etc.)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fire extinguisher (Type/Rating - _____)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fluid Levels:   |                          |                          |                          |
| - Engine oil  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Transmission fluid  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Brake fluid   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Cooling system fluid  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Windshield wipers   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hydraulic oil   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Oil leak/lube   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coupling devices and connectors   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exhaust system  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Blade/boom/ripper condition   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Accessways: Frame, hand holds, ladders, walkways (non-slip surfaces), guardrails?               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Power cable and/or hoist cable  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Steering (standard and emergency)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Safety Guards:**

**Yes No**

- Around rotating apparatus (belts, pulleys, sprockets, spindles, drums, flywheels, chains) points of operations protected from accidental contact? \_\_\_\_\_
- Hot pipes and surfaces exposed to accidental contact? \_\_\_\_\_
- Emergency shut offs have been identified and communicated to the field crew? \_\_\_\_\_
- Have emergency shutoffs been field-tested? \_\_\_\_\_
- Results? \_\_\_\_\_
- Are any structural members bent, rusted, or otherwise show signs of damage? \_\_\_\_\_
- Are fueling cans used with this equipment approved type safety cans? \_\_\_\_\_
- Have the attachments designed for use (as per manufacturer's recommendation) with this equipment been inspected and are considered suitable for use? \_\_\_\_\_

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**Portable Power Tools:**

- Tools and Equipment in Safe Condition? \_\_\_\_\_
- Saw blades, grinding wheels free from recognizable defects (grinding wheels have been sounded)? \_\_\_\_\_
- Portable electric tools properly grounded? \_\_\_\_\_
- Damage to electrical power cords? \_\_\_\_\_
- Blade guards in place? \_\_\_\_\_
- Components adjusted as per manufacturer's recommendation? \_\_\_\_\_

**Cleanliness:**

- Overall condition (is the decontamination performed prior to arrival on-site considered acceptable)? \_\_\_\_\_
- Where was this equipment used prior to its arrival on site? \_\_\_\_\_
- Site Contaminants of concern at the previous site? \_\_\_\_\_
- Inside debris (coffee cups, soda cans, tools and equipment) blocking free access to foot controls? \_\_\_\_\_

**Operator Qualifications (as applicable for heavy equipment):**

- Does the operator have proper licensing where applicable, (e.g., CDL)? \_\_\_\_\_
- Does the operator, understand the equipments operating instructions? \_\_\_\_\_
- Is the operator experienced with this equipment? \_\_\_\_\_
- Does the operator have emotional and/or physical limitations that would prevent him/her from performing this task in a safe manner? \_\_\_\_\_
- Is the operator 21 years of age or more? \_\_\_\_\_

**Identification:**

- Is a tagging system available, for positive identification, for tools removed from service? \_\_\_\_\_

**Additional Inspection Required Prior to Use On-Site**

- |  | <b>Yes</b>               | <b>No</b>                |
|--|--------------------------|--------------------------|
| - Does equipment emit noise levels above 90 decibels?                      | <input type="checkbox"/> | <input type="checkbox"/> |
| - If so, has an 8-hour noise dosimetry test been performed?                | <input type="checkbox"/> | <input type="checkbox"/> |
| - Results of noise dosimetry: _____  |                          |                          |
| - Defects and repairs needed: _____  |                          |                          |
| - General Safety Condition: _____  |                          |                          |
| - Operator or mechanic signature: _____                                    |                          |                          |
| Approved for Use: <input type="checkbox"/> Yes <input type="checkbox"/> No |                          |                          |

---

Site Safety Officer Signature