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FINAL HEALTH AND SAFETY PLAN MINE FILL A (SWMU 12) MINE FILL B (SWMU 13)  
SWMU 16 CAST HIGH EXPLOSIVES FILL/BUILDING 146 INCINERATOR TOXICITY  
TESTING AT NSA CRANE IN  
04/01/2010  
TETRA TECH NUS INC

**FINAL**  
**Health and Safety Plan**

**Mine Fill A (SWMU 12)**  
**Mine Fill B (SWMU 13)**  
**SWMU 16 Cast High Explosives**  
**Fill/ Building 146 Incinerator Toxicity**  
**Testing**  
**at**  
**Naval Support Activity**  
**(NSA) Crane**  
**Crane, Indiana**



**Naval Facilities Engineering Command**  
**Mid-West**

**Contract No. N62467-94-D-00888**  
**Contract Task Order 0377**

**April 2010**

**FINAL  
HEALTH AND SAFETY PLAN  
FOR  
MINE FILL A (SWMU 12)  
MINE FILL B (SWMU 13)  
SWMU 16 CAST HIGH EXPLOSIVES  
FILL/ BUILDING 146 INCINERATOR TOXICITY TESTING  
  
NAVAL SUPPORT ACTIVITY  
CRANE, INDIANA**

**Prepared for:  
Naval Facilities Engineering Command Midwest  
201 Decatur Avenue, Building 1A  
Great Lakes, Illinois 60088**

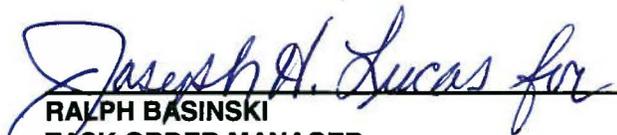
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**Prepared under:  
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Contract Task Order 0377**

**April 2010**

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## **1.0 INTRODUCTION**

The objective of this Health and Safety Plan (HASP) is to provide the safety and health requirements, restrictions, practices and procedures for Tetra Tech NUS, Inc. (TtNUS) personnel at Sites 12, 13, 16 at the Naval Support Activity Crane (NSA Crane), located in Crane, Indiana.

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

This HASP has been written to support proposed tasks and techniques associated with the scope of work as presented in Section 4.0. It has been developed using the latest available information regarding known or suspected chemical contaminants and potential physical hazards associated with the proposed work at the site. Should the proposed work site conditions and/or suspected hazards change, or if new information becomes available, this document will be modified. Changes to the HASP will be made with the approval of the TtNUS Site Safety Officer (SSO) and the TtNUS Health and Safety Manager (HSM). Requests for modifications to the HASP will be directed to the SSO who will determine whether to make the changes. The SSO will notify the Navy Task Order Manager (TOM), who will notify the affected personnel of changes.

### **1.1 AUTHORITY**

This work is authorized under the Comprehensive Long - Term Environmental Action Navy (CLEAN) contract, administered through the U.S. Navy Southeast, Naval Facilities Engineering Command, as defined under Contract No. N62467-94-D-0888; Contract Task Order Number 0377.

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

This section defines responsibilities for site safety and health for TtNUS employees engaged in onsite activities. The personnel assigned to participate in the field work have the primary responsibility for performing their work tasks in a manner that is consistent with the TtNUS Health and Safety Policy, the health and safety training that they have received, the contents of this HASP, and in an overall manner that protects their personal safety and health and that of their co-workers. The following persons are the primary point of contact and have the primary responsibility for observing and implementing this HASP and for overall on-site health and safety.

- The TtNUS Task Order Manager (TOM) is responsible for the overall direction and implementation of health and safety for this work.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of this HASP. The FOL manages field activities, executes the Work Plan, and enforces safety procedures as applicable to the Work Plan. Specifically, the FOL will:
  - Verify training and medical status of on-site personnel in relation to site activities.
  - Assist and represent TtNUS with emergency services (if needed)
  - Provide elements site-specific training for on site personnel.
- The TtNUS Site Safety Officer (SSO) or his/her representative supports the FOL concerning the aspects of health and safety including, but not limited to:
  - Coordinating health and safety activities
  - Selecting, applying, inspecting, and maintaining personal protective equipment
  - Establishing work zones and control points
  - Implementing air monitoring procedures
  - Implementing hazard communication, respiratory protection, and other associated safety and health programs
  - Coordinating emergency services
  - Providing elements of site-specific training

Compliance with these requirements is monitored by the TtNUS Site Safety Officer (SSO) and is coordinated through the HSM.

### **1.3 STOP WORK AUTHORITY**

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

**1.4 SITE INFORMATION AND PERSONNEL ASSIGNMENTS**

**Site Name:** Naval Support Activity Crane **Address:** Crane, Indiana

**Remedial Project Manager:** Howard Hickey **Phone Number:** (847) 688-5999

**Site Contact:** Thomas Brent **Phone Number:** (812) 854-6160

**Site Address:** 300 Highway 361 Crane, Indiana 47522-5001

**Purpose of Site Visit:** Site investigation and sampling activities

**Proposed Start-up Date:** April 2010

**Project Team:**

**TtNUS Personnel:**

Ralph Basinski

TBD

Matthew M. Soltis, CIH, CSP

Clyde Snyder

TBD

**Discipline/Tasks Assigned:**

Task Order Manager (TOM)

Field Operations Leader (FOL)

Health and Safety Manager (HSM)

Project Health and Safety Officer (PHSO)

Site Safety Officer (SSO)

**Prepared by:** Clyde Snyder

## 2.0 EMERGENCY ACTION PLAN

### 2.1 INTRODUCTION

This section has been developed as part of a planning effort to direct and guide field personnel in the event of an emergency. In the event of an emergency, the field team will evacuate and assemble to an area unaffected by the emergency and notify the appropriate local emergency response personnel/agencies. TtNUS personnel are not authorized to participate in any emergency response activities. Workers who are ill or who have suffered a non-serious injury may be transported by site personnel to nearby medical facilities, provided that such transport does not aggravate or further endanger the welfare of the injured/ill person. 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. The Navy Remedial Project Manager (RPM) Howard Hickey and Navy site contact Thomas Brent will be notified if outside response agencies are contacted.

TtNUS personnel may participate in minor event response and emergency prevention activities 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, emergencies resulting from chemical, physical, or fire hazards are the types of emergencies which could be encountered during site activities. To minimize or eliminate the potential for these emergency situations, pre-emergency planning activities will include the following (which are the responsibility of the SSO and/or the FOL):

- Coordinating with local Emergency Response personnel to ensure that TtNUS emergency action activities are compatible with existing emergency response procedures. Base Fire Protection and Emergency Services will be notified of scheduled events and activities. This is most imperative in situations where their services may be required. Due to the fact that the nearest hospital/medical center is over 4 minutes away, a CPR/First Aid trained personnel must be on-site during the times work is being conducted.

- Establishing and maintaining information at the project staging area (support zone) for easy access in the event of an emergency. This information will include the following:
  - Chemical Inventory (of chemicals used onsite), with Material Safety Data Sheets.
  - Onsite personnel medical records (Medical Data Sheets).
  - A log book identifying personnel onsite each day.
  - Hospital route maps with directions (these should also be placed in each site vehicle).
  - Emergency Notification - phone numbers.

The TtNUS FOL will be responsible for the following tasks:

- 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.
- Periodically performing practice drills to ensure site workers are familiar with incidental response measures.
- Providing the necessary equipment to safely accomplish identified tasks.

## **2.3 EMERGENCY RECOGNITION AND PREVENTION**

### **2.3.1 Recognition**

Emergency situations that may be encountered during site activities will generally be recognized by visual observation. Visual observation will also play a role in detecting potential exposure events to some chemical hazards. To adequately recognize chemical exposures, site personnel must have a clear knowledge of signs and symptoms of exposure associated with the principle site contaminants of concern as presented in this HASP. Tasks to be performed at the site, potential hazards associated with those tasks and the recommended control methods are discussed in detail in Sections 5.0 and 6.0. Additionally, early recognition of hazards will be supported by daily site surveys to eliminate any situation predisposed to an emergency. The FOL and/or the SSO will be responsible for performing surveys of work areas prior to initiating site operations and periodically while operations are being conducted. Survey findings are documented by the FOL and/or the SSO in the Site Health and Safety logbook, however, site personnel will be responsible for reporting hazardous situations. Where potential hazards exist, TtNUS will initiate control measures to prevent adverse effects to human health and the environment.

The above actions will provide early recognition for potential emergency situations, and allow TtNUS to instigate necessary control measures. However, if the FOL and the SSO determine that control measures are not sufficient to eliminate the hazard, TtNUS will withdraw from the site and notify the appropriate response agencies listed in Table 2-1.

### **2.3.2 Prevention**

TtNUS and subcontractor personnel will minimize the potential for emergencies by following the Health and Safety Guidance Manual and ensuring compliance with the HASP and applicable OSHA regulations. Daily site surveys of work areas, prior to the commencement of that day's activities, by the FOL and/or the SSO will also assist in prevention of illness/injuries when hazards are recognized early and control measures initiated.

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

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

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

Evacuation procedures will be discussed during the pre-activities training session, prior to the initiation of project tasks. Evacuation routes from the site and safe places of refuge are dependent upon the location at which work is being performed and the circumstances under which an evacuation is required.

Additionally, site location and meteorological conditions (i.e., wind speed and direction) may dictate evacuation routes. As a result, assembly points will be selected and communicated to the workers relative to the site location where work is being performed. Evacuation should always take place in an upwind direction from the site.

## **2.5 EMERGENCY CONTACTS**

Prior to initiating field activities, personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. Table 2-1 provides a list of emergency contacts and their associated telephone numbers. This table must be posted where it is readily available to site personnel. Facility maps should also be posted showing potential evacuation routes and designated meeting areas.

As soon as possible, Navy RPM Howard Hickey and Navy site contact Thomas Brent will be informed of any incident or accident that requires medical attention.

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets filed onsite (See Attachment I). If an exposure to hazardous materials has occurred, provide hazard information from Table 6-1 to medical service personnel.

**TABLE 2-1  
EMERGENCY CONTACTS  
CRANE, INDIANA**

CONTACT	TELEPHONE
Base Emergency Numbers* (Fire Department, Base Security, Ambulance) 1. If dialing from an on-base phone: or 2. If dialing from cell or off-base phone:	911 or (812) 854-1333
Base Environmental Office	(812) 854-3114
Bedford Ambulance	(812) 279-6545
Bloomington Hospital (Bloomington, Indiana)	(812) 336-9515
Bedford Medical Center (Bedford, Indiana)	(812) 275-1200
Indiana Utility One Call	811
Poison Control Center	(800) 222-1222
National Response Center	(800) 424-8802
Base Contact, Thomas Brent	(812) 854-6160
Task Order Manager , Ralph Basinski	(412) 921-8308
TtNUS Field Operations Leader, TBD	TBD
TtNUS Site Security Officer, TBD	TBD
TtNUS Office, Pittsburgh	(412) 921-7090
CLEAN Health and Safety Manager, Matthew M. Soltis, CIH, CSP	(412) 921-8912
TtNUS Project Safety Officer, Clyde Snyder	(412) 921-8904

**\*NOTE:** On-base extension 1333 is the primary emergency phone number. From an NSA Crane phone, on Base extensions must be preceded by "854". Off-base numbers can only be reached by dialing "991" first. Furthermore, the emergencies involving site activities should subsequently be reported to the Environmental Protection Department (x -3114/1132/6160).

## 2.6 EMERGENCY ROUTE TO HOSPITAL

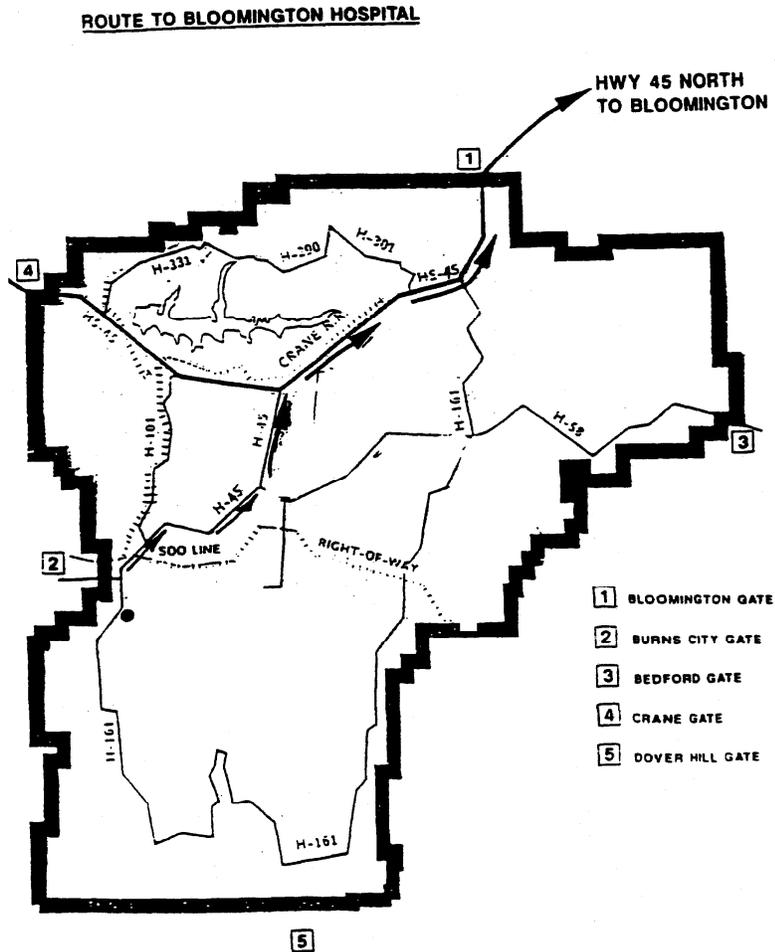
The Bloomington Gate is open 24 hours. The Bedford gate is open from -0600 to 0830 and 1500 to 1800 hours.

### Directions to the Bloomington Hospital:

601 W. 2nd St.  
P.O. Box 1149  
Bloomington, Indiana 47402

- 1) Exit NSA Crane on H-45 through the Bloomington Gate.
- 2) Follow Highway 45 North to Bloomington at Highway 45 and Highway 37.
- 3) Continue going straight over the overpass (Bloomfield Road).
- 4) Follow Bloomfield Road North; this road turns into 2nd Street.
- 5) Follow 2nd Street, hospital will be on the right (601 West 2nd Street)

**FIGURE 2-1**  
**Bloomington Hospital Route Map via Bloomington Gate**



**Directions to Bedford Medical Center:\***  
 2900 16th Street  
 Bedford, Indiana 47421

- 1) Exit the base on H-58, through the Bedford Gate. Note that "A" on the map below is outside the Bedford Gate.
- 2) Head East on State Highway 158. State Highway 158 becomes 16th Street upon entering the City of Bedford. The medical center is on the right shortly after Plaza Drive.

**FIGURE 2-2  
 BEDFORD MEDICAL CENTER ROUTE MAP VIA BEDFORD GATE**



Any pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets filed onsite. If an exposure to hazardous materials has occurred, provide hazard information from Table 6-1 to medical service personnel.

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

TtNUS personnel will be working in close proximity to each other at NSA Crane. As a result, hand signals, voice commands, and line of site communication will be sufficient to alert site personnel of an emergency. When project tasks are performed simultaneously on different sites, vehicle horns will be used to communicate emergency situations.

If an emergency on Base warranting evacuation occurs, the following procedures are to be initiated:

- Initiate the evacuation via hand signals, voice commands, or line of site communication
- Report to the designated refuge point where the FOL will account for site personnel
- Once non-essential personnel are evacuated, appropriate response procedures will be enacted to control the situation.
- Describe to the FOL (FOL will serve as the Incident Coordinator) pertinent incident details.

In the event that site personnel cannot mitigate the hazardous situation, the FOL and SSO will enact emergency notification procedures to secure additional assistance in the following manner:

Call the emergency contacts listed in Table 2-1 and report the incident. Give the emergency operator the location of the emergency, the type of emergency, the number of injured, and a brief description of the incident. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

- On Base, call 854-1333\* and other appropriate emergency contacts (Table 2-1) and report the emergency. Give the emergency operator the location of the emergency, the type of emergency, the number of injured, and a brief description of what occurred. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

## **2.8 PPE AND EMERGENCY EQUIPMENT**

A first-aid kit, eye wash units (or bottles of disposable eyewash solution) and fire extinguishers (strategically placed) will be maintained onsite and shall be immediately available for use in the event of an emergency. This equipment will be located in the field office as well as in each site vehicle. At least one first aid kit supplied with equipment to protect against bloodborne pathogens will also be available on site. Personnel identified within the field crew with bloodborne pathogen and first-aid training will be the only personnel permitted to offer first-aid assistance. In addition, due to the fact that the nearest hospital/medical center is over 4 minutes away, a CPR/First Aid trained personnel must be on-site during the times work is being conducted.

## **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 be postponed if the incident warrants immediate evacuation. However, it is unlikely that an evacuation would occur which would require workers to evacuate the site without first performing the necessary decontamination procedures.

TtNUS personnel will perform rescue operations from emergency situations and may provide initial medical support for injury/illnesses requiring only "Basic First-Aid" level support, and only within the limits of training obtained by site personnel. At least 2 personnel will be certified in Basic First-Aid. Basic First-Aid is considered treatment that can be rendered by a trained first aid provider at the injury location and not requiring follow-up treatment or examination by a physician (for example; minor cuts, bruises, stings, scrapes, and burns). Not included as Basic First-Aid are second or third degree burns, cuts, lacerations requiring stitches or butterfly bandaging, heat exhaustion, severe poisonous plant or insect bite reactions. Personnel providing medical assistance are required to be trained in First-Aid and in the requirements of OSHA's Bloodborne Pathogen Standard (29 CFR 1910.1030). Medical attention above First-Aid level support will require assistance from the designated emergency response agencies. Attachment II provides the procedure to follow when reporting an injury/illness, and the form to be used for this purpose. **If the emergency involves personnel exposures to chemicals, follow the steps provided in Figure 2-3.**

**FIGURE 2-3**  
**POTENTIAL EXPOSURE PROTOCOL**

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

In the event of a personnel injury or accident:

- Rescue, when necessary, employing proper equipment and methods.
- Give attention to emergency health problems -- breathing, cardiac function, bleeding, and shock.
- Transfer the victim to a 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 injured person is a Tetra Tech NUS 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 which 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 1-800-455-6155 and enter Extension 109, being prepared to provide:
  - Any known information about the nature of the injury.
  - 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 involved Tetra Tech NUS, Inc. employee(s).
  - Name and phone number of an informed site officer who will be responsible for further investigations.
  - Fax appropriate information to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) and Human Resources Department (Marilyn Duffy) at (412) 921-7090.

As data is gathered and the scenario becomes more clearly defined, this information should be forwarded to WorkCare.

WorkCare will compile the results of 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 but deleting any personal or individual comments. A personalized letter describing the individual findings/results will accompany this generalized summary. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

**FIGURE 2-3 (continued)**  
**WORKCARE**  
**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 their 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	Chest Tightness / Pressure
Tearing	Nausea / Vomiting
Headache	Dizziness
Cough	Weakness
Shortness of Breath	

**Delayed Symptoms:**

Weakness	Loss of Appetite
Nausea / Vomiting	Abdominal Pain
Shortness of Breath	Headache
Cough	Numbness / Tingling

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

Burning of eyes, nose, or throat	Nausea / Vomiting
Tearing	Dizziness
Headache	Weakness
Cough	Loss of Appetite
Shortness of Breath	Abdominal Pain
Chest Tightness / Pressure	Numbness / Tingling
Cyanosis	

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: \_\_\_\_\_

## **2.10 INJURY/ILLNESS REPORTING**

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

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets filed onsite. If an exposure to hazardous materials has occurred, provide information on the chemical, physical, and toxicological properties of the subject chemical(s) to medical service personnel.

If needed and once completed, the appropriate personnel on the incident report form (Attachment II) should be notified and their signatures obtained. Once signed, this form should be stored on site and filed. 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.

## **3.0 SITE BACKGROUND**

### **3.1 SITE HISTORY**

NSA Crane is located in Crane, Indiana approximately 75 miles southwest of Indianapolis and 71 miles northwest of Louisville, Kentucky. The facility encompasses approximately 100 square miles (64,463 acres) in Daviess, Greene, Lawrence, and Martin Counties. It is located in a rural, sparsely populated area. The acreage surrounding the base is either wooded or farmed land. The facility, originally called Naval Ammunition Depot (NAD) Burns City, was opened in 1941 to serve as an inland ammunition production and storage center. Today NSA Crane's mission is to "provide quality and responsive engineering, technical and material support to the Fleet for combat subsystems, equipment and components, microelectronic technology, microwave components, electronic warfare, acoustic sensors tests, engineering pyrotechnics, small arms, electronic module test and system command." Under the Single Service Management Program, a segment of the Center's mission is to provide support (including environmental protection) to the Crane Army Ammunition Activity (CAAA). The Army is tasked with the production and renovation of conventional ammunition and related items, the performance of manufacturing, engineering, and product quality assurance to support production; and the storage, shipment, demilitarization, and disposal of conventional ammunition and related components. Because of the nature of the Army's operations, CAAA contributes significant financial support for the environmental program through an Inter-Service Support Agreement.

### **3.2 SWMU 16**

The Cast High Explosives Fill/Building146 Incinerator area (SWMU 16) is located on a flattened ridge top in the north-central portion of NSA Crane, on the southeast side of Highway 45, which is the main highway running through the facility. The flattened ridge top that extends southward from the primary ridge along Highway 45 has an elevation of approximately 765 feet above mean sea level (amsl). There are relatively steep slopes that lead down to stream channels on the western, southern, and eastern sides of the ridge. It separates the Greenwood Lake drainage that lies on the northwest side of the highway from the Turkey Creek watershed that lies on the southeast side.

SWMU 16 is approximately 16 acres in size. Building 146, the largest building at SWMU 16, is located in the center of SWMU 16 and covers approximately two-thirds of an acre. Most of SWMU 16 is covered with buildings and gravel parking lots, and most grassy areas are located southeast of Building 146. A rail spur and gravel parking lot are located on the west side of Building 146. An asphalt-paved parking lot and loading dock are located on the east side of the building. The incinerator bays are located on the

south end of Building 146. In addition, an ash pile was located south of the building in the past. A chain-link fence surrounds the Cast High Explosives Fill/B146 Incinerator area.

Based on data collected during the RFI, terrestrial plants and invertebrates at SWMU 16 could be impacted from exposure to antimony, copper, lead, and zinc in soil, while birds could be impacted from lead and zinc in soil.

SMWU 16 is intermittently active and is used for renovation, rework, and breakdown of munitions. It is sometimes used for ammunition demilitarization operations. Nearby facilities include case filling, case preparation, lunch and locker, and sewage pumping station buildings to the north and fuze and detonator magazines to the south.

Building 146 was previously used as an explosives fill and pressure washout facility with two large (87.4 cubic foot) and one prototype (46.1 cubic foot) RCRA permitted oil-fed rotary kiln incinerators. Three nearby aboveground storage tanks (ASTs) supplied No. 2 fuel oil for the kilns. Munitions entered the kilns at one end and were exposed to flame combustion, which resulted in the destruction of the energetics (propellants, explosives, and pyrotechnics) contained within the munitions to demilitarize them through burning or detonation. Ash and slag residues from the incinerators were piled on the ground. The incinerators were installed in 1967 and were closed in the early 1990s. In 1995, a decision was made to remove the waste ash piles, and the piles were removed along with some obviously contaminated soil.

Magazine and storage buildings are situated east of Building 146, and magazines for fuses, detonators, and high explosives lie east of SWMU 16. Both Building 145 (the case filling plant) and Building 148 (the small arms repacking building) housed significant quantities of explosives and smokeless powder.

### **3.3 SWMU 12-MINE FILL A**

Mine Fill A is approximately 63 acres in size and is divided in two halves. Mine Fill A is used for the production of large mines, depth charges, rocket heads aerial bombs, and projectiles along demilitarization activities that take place at Buildings 151, 155, 160. In the past, explosives powders discharged from roof vents, accumulated on building roofs, and were washed onto the ground, resulting in the contamination of the soils.

- Building 155 is used as a renovation facility for explosive-laden bombs and employs a waterjet system to remove thermal coatings.
- Building 2714 stored aluminum powder

- Buildings 153 and 158 house explosive powders such as trinitrotoluene (TNT).

The SWMU Battery Site is located on the southern end of Mine Fill A approximately 140 feet outside the perimeter fence and is accessed through a gate. The site consists of two areas: (1) the Battery Area, where batteries were dumped on the ground surface and (2) the Soil Area, an adjacent area where soil and construction debris was dumped in small mounds.

The Battery Area was discovered in the 1990s. Further investigation revealed the presence of the battery disposal area. At that time, the batteries were recognizable as AA household type. Only the inner cores were visibly on the ground surface. The size of the Battery Area was approximately 3,500 square feet.

The Soil Area had no apparent unusual characteristics; no staining was present nor was any type of odor detectable. A reasonable assumption was made by personnel from the NSWCC Crane Environmental Protection Department that the mounded soil in the Soil Area originated from within Mine Fill A, possibly from the installation of road culverts. The size of the Soil Area was approximately 2,355 square feet consisting of several soil mounds, none exceeding 4 feet in height.

### **3.4 SWMU 13 MINE FILL B**

Facilities at Mine Fill B can be divided into two halves in which identical activities took place. Operations at Mine Fill B began in December 1941. Mine Fill B has historically been used to manufacture mines, depth charges, rocket heads, aerial bombs, and projectiles. Production of explosive ordnance occurred at Mine Fill B from 1941 until 1973. Since 1973, the facilities at Mine Fill B have been used for renovation of ordnance and equipment.

Mine Fills A and B are nearly identical units that were used for the production of large mines, depth charges, rocket heads, aerial bombs, and projectiles. In the past, explosives powders discharged from roof vents and accumulating on roofs were washed down to the ground, resulting in the contamination of soils. Wastewater containing explosives were previously discharged into ditches. An interim removal action was conducted in which explosive-contaminated soils were removed for biological treatment of explosives. Treated soils were then placed onto the areas from which the contaminated soils were removed.

## 4.0 SCOPE OF WORK

This section describes the project tasks that will be performed at NSA Crane – SWMU 32. The planned activities involved in this effort are presented in detail in the Sampling and Analysis Plan developed for the project. If new tasks are to be performed at the site this section will be modified accordingly.

Specific tasks to be conducted at SWMU 32 include the following:

- Mobilization/Demobilization
- Site walk to locate seeps
- Multimedia Sampling
  - Groundwater Sampling
  - Seep Sampling
  - Surface Soil Sampling via Hand Augering
- Investigation-Derived Waste (IDW) Management
- Decontamination

For more detailed description of the associated tasks refer to the individual Work Plans. If additional tasks are determined to be necessary, this HASP will need to be amended and a hazard evaluation of the additional tasks performed.

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

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

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

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

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

- Eating, drinking, chewing gum or tobacco, taking medication, or smoking in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists is prohibited.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. The use of waterless hand cleaning products is acceptable if followed by actual hand-washing as soon as practicable upon exiting the site.
- Avoid contact with potentially contaminated substances including puddles, pools, mud, or other such areas. Avoid, kneeling on the ground or leaning or sitting on equipment. Keep monitoring equipment away from potentially contaminated surfaces.
- Plan and mark entrance, exit, and emergency evacuation routes.
- Rehearse unfamiliar operations prior to implementation.
- Buddies should maintain visual contact with each other and with other on-site team members by remaining in close proximity to assist each other in case of emergency.

- Establish appropriate safety zones including support, contamination reduction, and exclusion zones.
- Minimize the number of personnel and equipment in contaminated areas (such as the exclusion zone). Non-essential vehicles and equipment should remain within the support zone.
- Establish appropriate decontamination procedures for leaving the site.
- Immediately report injuries, illnesses, and unsafe conditions, practices, and equipment to the SSO.
- Observe co-workers for signs of toxic exposure and heat or cold stress.
- Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.

## **5.2 HAND AUGERING SAFE WORK PRACTICES**

The following Safe Work Practices are to be followed when working in or around Hand Augering Operations.

- Identify underground and overhead utilities and buried structures before commencing any augering operations. Follow the TtNUS Utility Locating and Excavation Clearance Standard Operating Procedure.
- The work area around the point of operation will be cleared to the extent possible to remove any trip hazards near or surrounding operating equipment.
- Establish an equipment staging and laydown plan to keep the work area clear of clutter and slips, trips, and fall hazards.
- Minimize contact to the extent possible with contaminated tools and environmental media. Potentially contaminated tools will be placed on polyethylene sheeting for storage and wrapped for transport to the centrally located equipment decontamination area
- Support functions (sampling and screening stations) will be maintained a minimum distance from hand augering activities.

- In order to minimize contact with potentially contaminated tooling and media and to minimize lifting hazards, multiple personnel should be used to move auger flights and other heavy tooling.
- Only personnel absolutely essential to the work activity will be allowed in the exclusion zone.
- Equipment used within the exclusion zone will undergo a complete decontamination and evaluation by the FOL and/or the SSO to determine cleanliness prior to moving to the next location, exiting the site, or prior to down time for maintenance.
- Investigative areas will be restored to equal or better condition than original to remove any contamination brought to the surface and to remove any physical hazards.
- In situations where these hazards cannot be immediately removed, the area will be barricaded to limit access.

## 6.0 HAZARD ASSESSMENT AND CONTROLS

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

### 6.1 CHEMICAL HAZARDS

Contaminants of concern associated with these three sites include RDX and various metals. In previous sampling events these contaminants were found to exist through out the site. It is unlikely that levels above the Time weighted Average may be achieved. These metals are above the visible spectrum for this reason visual dust and area wetting methods will be employed to prevent exposure to field crews. It is recommended that exposure (via inhalation, ingestion, or skin contact) to these contaminants be minimized through the use of PPE and good work hygiene practices. For further information on these contaminants and other potential contaminants see Table 6-1.

#### 6.1.1 Metals

Generally, there are 35 metals that concern us because of occupational or residential exposure; 23 of these are the heavy elements or "heavy metals". The following heavy metals have been detected on site above the reporting level: antimony, arsenic, cadmium, chromium, mercury, nickel, vanadium, zinc etc. However, these levels are not considered as large a health and safety concern as lead during the normal course of work at this site.

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

#### 6.1.2 RDX

RDX, also known less commonly as cyclonite, hexogen (particularly in German and German-influenced languages), and T4, and chemically as Cyclotrimethylenetrinitramine, is an explosive nitroamine widely used in military and industrial applications. Nomenclature variants include cyclotrimethylene-trinitramine and cyclotrimethylene trinitramine.

In its pure, synthesized state RDX is a white, crystalline solid. As an explosive, it is usually used in mixtures with other explosives and plasticizers, phlegmatizers or desensitizers. It is stable in storage and is considered one of the most powerful and brisant of the military high explosives.

RDX forms the base for a number of common military explosives: RDX can cause seizures (a problem of the nervous system) in humans and animals when large amounts are inhaled or eaten. The effects of long-term (365 days or longer), low-level exposure on the nervous system are not known. Nausea and vomiting have also been seen. No other significant health effects have been seen in humans.

**TABLE 6-1**  
**COMPARISON OF WORST-CASE LEAD AIR CONCENTRATIONS**  
**WITH CURRENT OCCUPATIONAL EXPOSURE LIMITS**

Contaminant of Concern	Highest Concentration in Soils/water Necessary to Reach PEL	Amount of Dust-in-Air that would have to be generated before PEL/TLV would be reached	Current OSHA PEL And NIOSH REL
Antimony	.27 mg/kg soil	2.5 mg/m <sup>3</sup>	OSHA: 0.05 mg/m <sup>3</sup> , TWA <sub>8</sub> ACGIH 0.05 mg/m <sup>3</sup> , TWA <sub>8</sub>
Lead	4,570 mg/kg soil	2.5 mg/m <sup>3</sup>	OSHA: 0.05 mg/m <sup>3</sup> , TWA <sub>8</sub> NIOSH 0.05 mg/m <sup>3</sup> , TWA <sub>8</sub>
Zinc	2.5 mg/kg soil	NA	NA
RDX	8,500 ug/l in water	NA	ACGIH 0.5 mg/m <sup>3</sup> skin

Table Notes:

TWA<sub>8</sub>: Average air concentration over an 8-hour work period that is not to be exceeded

2mg/m<sup>3</sup> – Visible dust

NA – not available

### 6.1.3 Potential Routes of Exposure

**Inhalation:** Based on the data from previous investigations at this worksite, worker exposure to airborne concentrations that could represent a health concern is considered not to be likely.

As a result of this, it is very unlikely that workers participating in these activities will encounter any airborne concentrations of the above metals that would represent an occupational exposure concern. Examples of onsite practices that are to be observed that will protect workers from exposure via inhalation include:

- Proper PPE use and hygiene care
- Proper use of area wetting techniques, when visible dust is generated

**Ingestion and Skin Contact:** Potential exposure concerns to these Contaminants of Concern (COC) may also occur through ingesting or coming into direct skin contact with contaminated soils. However, the likelihood of worker exposure concerns through these two routes are considered very unlikely, provided that workers follow good personal hygiene and standard good sample collection/sample handling practices, and wear appropriate PPE as specified in this HASP. Examples of onsite practices that are to be observed that will protect workers from exposure via ingestion or skin contact include the following:

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

## **6.2 PHYSICAL HAZARDS**

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

- Slip, trips, and falls
- Strain/muscle pulls from heavy lifting
- Ambient temperature extremes (heat/cold stress)
- Vehicular and equipment traffic
- Inclement weather
- Natural hazards (snakes, ticks, poisonous plants, etc.)

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

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

During various site activities there is a potential for slip, trip, and fall hazards associated with wet, steep, or unstable work surfaces. To minimize hazards of this nature, personnel required to work in and along areas prone to these types of hazards will be required to exercise caution, and use appropriate

precautions (restrict access, guardrails, life lines and/or safety harnesses) and other means suitable for the task at hand. Site activities will be performed using the buddy system.

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

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

### **6.2.3 Ambient temperature extremes (heat/cold stress)**

Because of the geographical location of the planned work, the likely seasonal weather conditions that will exist during the planned schedule, and the physical exertion that can be anticipated with some of the planned tasks, it will be necessary for the field team to be aware of the signs and symptoms and the measures appropriate to prevent heat or cold stress. This is addressed in detail in section 4.0 of the TtNUS Health and Safety Guidance Manual, which the SSO is responsible for reviewing and implementing as appropriate on this project.

### **6.2.4 Inclement Weather**

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

## **6.3 NATURAL HAZARDS**

Insect/animal bites and stings, poisonous plants, inclement weather, and other natural hazards must be considered given the location of activities to be conducted. In general, avoidance of areas of known infestation or nesting will be the preferred exposure control. Use of additional PPE with joints (ankles and wrists) taped, such as long pants tucked into boots or coveralls, is also recommended. Specific discussion on principle hazards of concern follows:

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

Ticks, insect/animal bites, and stings are difficult to control given the climate and environmental setting of NSA Crane. However, in an effort to minimize this hazard the following control measures will be enacted where possible.

- Commercially available bug sprays and repellents will be used whenever possible. Commercially available repellants may be used providing these components are not part of the analyte listing. Products such as DEET should not be applied directly to the skin due to potential irritation. This product, when permitted for use, should be applied over clothing articles.
- Loose fitting light colored clothing with long sleeves, where possible should be worn. This will also aid in insect control by providing a barrier between the field person and the insects and to provide easy recognition of crawling insects against the lighter background. Pant legs should be secured to the work-boots using duct tape to prevent access by ticks. Mosquito nets are also recommended for use when commercially available repellents are not permitted.
- Clothing/limited body checks for ticks and other crawling insects should be conducted upon exiting heavily vegetated areas. Workers should perform a more detailed check of themselves when showering in the evening. Ticks prefer moist areas of the body (arm-pits, genitals, etc.) and will migrate to those locations.
- The FOL/SSO will preview the access routes and work areas in an effort to identify physical hazards including nesting areas in and around the work sites. These areas will be flagged and communicated to the site personnel.
- The FOL/SSO must determine if site personnel (through their Medical Data Sheets), suffer allergic reactions to bee and other insect stings and bites. When personnel are on-site who are predisposed to these conditions, the FOL/SSO will take the appropriate measures to secure physician directed antidotes.

It is important that any allergies be reported on the Medical Data Sheets and to the SSO.

### **Tick and Mosquito Transmitted Illnesses and Diseases**

Ticks and mosquitoes have been identified in the transmission of diseases including Lyme's disease and malaria. Warm months (Spring through early Fall) are the most predominant time for this hazard. However, due to the climate and environmental setting of NSA Crane, this hazard may occur year round. Information concerning transmitted Lyme's Disease including recognition, evaluation, tick removal, and control is provided in Section 4.0 of the Health and Safety Guidance Manual.

Malaria may occur when a mosquito or other infected insect sucks blood from an infected person, and the insect becomes the carrier to infect other hosts. The parasite reproduces within the mosquito, and is then

is passed on to another person through the biting action. Acute symptoms include chills accompanied by fever and general flu like symptoms. This generally terminates in a sweating stage. These symptoms may recur every 48 to 72 hours.

Conditions such as this should not be taken for granted and should be reported to the SSO immediately.

### **Snakes and Other Wild Animal Encounters**

Indigenous animals including snakes (poisonous and non-poisonous varieties), raccoons, and other animals native to the region may have to be contended with. These animals may be encountered if work locations encroach on nesting or territories claimed by these animals.

To avoid the obvious hazards conveyed as part of a direct encounter, the following actions will be taken to minimize impact on the field crews and/or operations.

- FOL/SSO will preview access routes and work locations for nesting areas or signs of animal activities (tracks, foraging areas, etc.). The identified suspect areas will be communicated to the field crews. To the extent possible, suspected nesting/habitat areas are to be avoided. Otherwise, snake chaps will be required as a precaution.

### **6.3.2 Poisonous Plants**

Various plants that can cause allergic reactions may be encountered during fieldwork. These include, but may not be limited to, poison ivy, poison oak, and poison sumac. Contact of field personnel with previous plants may occur when clearing vegetation for access to work areas, or through movement through these plants. An irritating, allergic reaction can occur when direct contact is achieved between the plant and the bare skin of a field person, or the plant and some piece of equipment or clothing article that then later comes in contact with the bare skin of a field person. Oils are transferred from the plant to exposed skin, clothing, or piece of equipment. The degree of the irritating, allergic reaction can vary significantly from one person to the next.

Protective measures to control and minimize the effects of this hazard may include, but not limited to, the following:

- Identify plants for field personnel.
  - Poison Ivy - Characterized by climbing vines, three leaf configuration ovate to elliptical in shape, deep green leaves with a reddish tint, greenish flowers, and white berries.

- Poison Sumac - Characterized as a tall bush of the sumac family bearing compound leaves (7 to 13 entire leaflets), branched from a central axis, drooping, with auxiliary clusters of white fruit.

**NOTE:** These white fruits and berries may exist only during pubescent stages.

- Poison oak - Characterized as similar to poison ivy consisting of a shrub, stems erect, 0.3 to 2.0 meters (1 to 13 feet) tall, leaflets consist of broad thick lobes coarsely serrated configuration, denser at the base, less so than the top.
- Protective measures may include wearing disposable garments such as Tyvek when clearing brush. These may be carefully removed and disposed along with any oils accumulated from the plants.
- Personal Hygiene - The oils obtained from the plants will only elicit an allergic response when the person's bare skin layer is contacted. This can be aggravated through skin pores open when perspiring, or through breaks in the skin such as cuts, nicks, scratches, etc... This can also be accomplished when using excessively hot water for cleaning the skin, which also causes pores to open. Prior to break time, lunchtime, etc. personnel should wash with cool water and soap to remove as much of the oils as possible. In heavily vegetated areas of these plants, additional measures including barrier creams and blocks may be used to prevent the oils from accessing and penetrating the skin.

These plants present an airborne sensitization hazard when burned. This is not to occur as part of this scope of work and therefore will not be addressed.

## **7.0 AIR MONITORING**

No monitoring instruments will be required for this field effort. Based on the contaminants of concern visual observation of dust will signal site evacuation. Area wetting methods can be used to suppress dust. The contaminants are low levels the greatest chance for contamination is through ingestion inhalation and or skin contact

## **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 NSA Crane. 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.

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

TtNUS SSO will provide site-specific training to TtNUS employees who will perform work on this project. Figure 8-1 will be used to document the provision and content of the project-specific and associated training. Site personnel will be required to sign this form prior to commencement of site activities. This training documentation will identify personnel who through record review and attendance of the site-specific training are cleared for participation in site activities. This document shall be maintained at the site to identify and maintain an active list of trained and cleared site personnel.

The TtNUS SSO will also conduct a pre-activities training session prior to initiating site work. This will consist of a brief meeting at the beginning of each day to discuss operations planned for that day, and a review of the appropriate Safe Work Permits with the planned task participants. A short meeting may also be held at the end of the day to discuss the operations completed and any problems encountered.

### **8.3 MEDICAL SURVEILLANCE**

TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TtNUS's medical surveillance program. Documentation for medical clearances will be maintained in the TtNUS Pittsburgh office and made available, as necessary, and will be documented using Figure 8-1 for every employee participating in onsite work activities at this site.

Each field team member, including visitors, entering the exclusion zone(s) shall be required to complete and submit a copy of the Medical Data Sheet (see Attachment I of this HASP). This shall 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.



## **9.0 SITE CONTROL**

This section outlines the means to delineate work zones and use these work zones in conjunction with decontamination procedures to prevent the spread of contaminants into previously unaffected areas. It is anticipated that a three-zone approach will be used during work at this site. This approach will be comprised of an exclusion zone, a contamination reduction zone, and a support zone. It is also anticipated that this approach will control access to site work areas, restricting access by the general public, minimizing the potential for the spread of contaminants, and protecting individuals who are not cleared to enter work areas.

### **9.1 EXCLUSION ZONE**

The exclusion zone will be considered the areas of the site of known or suspected contamination. It is anticipated that the areas around intrusive activities will have the potential for contaminants brought to the surface. These areas will be marked and personnel will maintain safe distances. Once intrusive activities have been completed and the area is restored, the potential for exposure is again diminished and the area can then be reclassified as part of the contamination reduction zone.

Therefore, the exclusion zones for this project will be limited to those areas of the site where active work is being performed plus a designated area of at least 25 feet surrounding the work area. Exclusion zones will be marked as deemed appropriate by the FOL by erecting visibility fencing, barrier tape, cones, and/or postings to inform and direct personnel.

A pre-startup site visit will be conducted to identify proposed subsurface investigation locations, conduct utility clearances, and provide notices concerning scheduled activities.

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

### **9.2 CONTAMINATION REDUCTION ZONE**

The contamination reduction zone (CRZ) will be a buffer area between the exclusion zone and any area of the site where contamination is not suspected. This area will also serve as a focal point in supporting exclusion zone activities. This area will be marked 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. The support zones will be established at areas of the site where away from potential exposure to site contaminants during normal working conditions or foreseeable emergencies.

### **9.4 SAFE WORK PERMITS**

Work conducted in support of this project will be performed using Safe Work Permits (SWPs) to guide and direct field crews on a task by task basis. An example of the SWP to be used is provided in Figure 9-1. Partially completed SWPs for the work to be performed are included as Attachment III of this HASP. These permits were completed to the extent possible as part of the development of this HASP. It is the SSO's responsibility to finalize and complete the blank portions of the SWPs based on current, existing conditions the day the task is to be performed, and then review that completed permit with the task participants as part of a pre-task tail gate briefing session. This will ensure that site-specific considerations and changing conditions are appropriately incorporated into the SWP, provide the SSO with a structured format for conducting the tail gate sessions, as well will also give personnel an opportunity to ask questions and make suggestions. The SWPs require the signature of the FOL or SSO.

### **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., DoD, EPA, OSHA)
- Authorized Navy Personnel
- Other authorized visitors

Non-TtNUS 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.

Site visitors will be escorted and restricted from approaching any work areas where they could potentially be exposed to hazardous chemicals. If a visitor has authorization from the client and from the TtNUS Task Order Manager to approach our work areas, the FOL must assure that the visitor first provides documentation indicating that he/she/they have successfully completed the necessary OSHA introductory

training, receive site-specific training from the SSO, and that they have been physically cleared to work on hazardous waste sites.

## **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 Base Contact. The Base Contact 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 BUDDY SYSTEM**

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

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

TtNUS and subcontractor personnel will provide MSDSs for 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.

## **9.9 COMMUNICATION**

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

External communication will be accomplished by using the telephones at predetermined and approved locations. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of activities at the NSA Crane, the FOL will determine and arrange for telephone communications.

**FIGURE 9-1  
EXAMPLE SAFE WORK PERMIT**

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

**I. Work limited to the following (description, area, equipment used):** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**II. Primary Hazards:** Potential hazards associated with this task:  
 \_\_\_\_\_  
 \_\_\_\_\_

**III. Field Crew:** \_\_\_\_\_

**IV. On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

**V. Protective equipment required**

Level D  Level B   
 Level C  Level A

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

**Respiratory equipment required**

Yes  Specify on the reverse  
 No

<b>VI. Chemicals of Concern</b>	<b>Hazard Monitoring</b>	<b>Action Level(s)</b>	<b>Response Measures</b>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Primary Route(s) of Exposure/Hazard:** \_\_\_\_\_  
 \_\_\_\_\_

**(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)**

**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/Cellular Phone .....	<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 – ) .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Work/rest regimen .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety toe Work shoes or boots.	<input type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
High Visibility vest .....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit .....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash .....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Other.....	<input type="checkbox"/> Yes <input type="checkbox"/> No

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

**VIII. Site Preparation**

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc.) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IX. Additional Permits required** (Hot work, confined space entry, excavation etc.).....  Yes  No  
 If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

**X. Special instructions, precautions:** \_\_\_\_\_  
 \_\_\_\_\_

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

## **10.0 SPILL CONTAINMENT PROGRAM**

### **10.1 SCOPE AND APPLICATION**

It is not anticipated that quantities of bulk potentially hazardous materials (greater than 55-gallons) will be handled during some of the site activities conducted as part of the scope of work (including IDW). It is also not anticipated that spillage of these materials would constitute a significant danger to human health or the environment. Further, it is possible that as the job progresses disposable PPE and other non-reusable items will be generated. As needed, 55 -gallon drums will be used to contain waste waters, IDW, and other unwanted items generated during investigatory activities.

It is not anticipated that significant volumes of solid or semi-solid IDW (i.e., soil, sediment, etc.) will be generated during field activities, including installation of temporary groundwater monitoring wells or collection of subsurface samples using DPT.

If gross contamination is encountered (e.g., any non-soil contaminated material such as free product or soil with FID readings greater than 100 parts per million [ppm]), then intrusive activities will cease. Any grossly contaminated material that is brought to the surface will not be returned to the excavation but will be segregated from other excavated soil and placed on a plastic liner. The grossly contaminated material will be securely staged until arrangements are made for proper off-site disposal.

### **10.2 POTENTIAL SPILL AREAS**

Potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Currently, there are various areas vulnerable to this hazard including the areas used for central staging and decontamination activities. Additionally, areas designated for handling, loading, and unloading of potentially contaminated soils, waters, and debris present limited potential for leaks or spills. It is anticipated that the IDW generated as a result of this scope of work will be disposed on-site.

### **10.3 PERSONNEL TRAINING AND SPILL PREVENTION**

Personnel will be instructed in the procedures for incipient spill prevention, containment, and collection of hazardous materials in the site-specific training. The FOL and the SSO will serve as the Spill Response Coordinators for this operation, should the need arise.

#### **10.4 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 Prevention/Containment Program.

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

#### **10.5 SPILL CONTROL PLAN**

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

- Notify the SSO or FOL immediately upon detection of a leak or spill. Activate emergency alerting procedures for that area to remove non-essential personnel.
- Employ the personal protective equipment stored at the staging area. Take immediate actions to stop the leak or spill by plugging or patching the container or raising the leak to the highest point in the vessel. Spread the absorbent material in the area of the spill, covering it completely.
- Transfer the material to a new vessel; collect and containerize the absorbent material. Label the new container appropriately. Await analyses for treatment and disposal options.
- Re-containerize spills, including 2-inch of top cover impacted by the spill. Await test results for treatment or disposal options.

It is not anticipated that a spill will occur that the field crew cannot handle. Should a spill event occur that is beyond the capabilities of the field crew. All spills will be reported to the Crane Environmental Office. Any necessary notifications or requests to outside agencies will be handled by Crane.

## 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 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, manholes, sewers, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

Additionally, a Permit-Required Confined Space must also have one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly caving walls or by a floor that 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 shall 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
- Material Safety Data Sheets for chemicals brought on site, including decontamination solutions, fuels, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (Attachment IV)
- Training/Medical Surveillance Documentation Form
- First-Aid Supply Usage Form
- Emergency Reference Form
- Directions to the Hospital

### 12.1 MATERIALS TO BE POSTED AT THE SITE

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

- **Chemical Inventory Listing (posted)** - This list represents the chemicals brought on-site, including decontamination solutions, sample preservations, fuel, etc. This list should be posted in a central area.
- **MSDSs (maintained)** - The MSDSs should also be in a central area accessible to the site personnel. These documents should match the listings on the chemical inventory list for the substances employed on-site. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.
- **The OSHA Job Safety & Health Protection Poster (posted)** - This poster should be conspicuously posted in places where notices to employees are normally posted, as directed by 29 CFR 1903.2 (a)(1). Each FOL shall ensure that this poster is not defaced, altered, or covered by other material. The law also states that reproductions or facsimiles of the poster shall be at least 8½ by 14 inches with 10 point type.

- **Site Clearance (maintained)** - This list is found within the training section of the HASP (Figure 8-1). This list identifies the site personnel, dates of training (including site-specific training), and medical surveillance. The list indicates not only clearance, but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.
- **Emergency Phone Numbers and Directions to the Hospital(s) (posted)** - This list of numbers and directions will be maintained at the phone communications points and in each site vehicle.
- **Medical Data Sheets/Cards (maintained)** - Medical Data Sheets will be filled out by on-site personnel and filed in a central location. The Medical Data Sheet will accompany any injury or illness requiring medical attention to the medical facility.
- **Personnel Monitoring (maintained)** - The results generated through personnel sampling (levels of airborne toxins, noise levels, etc.) will be posted to inform individuals of the results of that effort.
- **Placards and Labels (maintained)** - Where chemical inventories have been separated because of quantities and incompatibilities, these areas will be conspicuously marked using DOT placards and acceptable [Hazard Communication 29 CFR 1910.1200(f)] labels.

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

### 13.0 ACRONYMS / ABBREVIATIONS

amsl	above mean sea level
ACGIH	American Conference of Governmental and Industrial Hygienists
BG	Background
BZ	Breathing Zone
CAAA	Crane Army Ammunition Activity
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Contaminants of Concern
CPR	Cardio Pulmonary Resuscitation
CSP	Certified Safety Professional
CTO	Contract Task Order
dBA	decibels
DoD	Department of Defense
DOT	Department of Transportation
DRI	Direct Reading Instrument
EOD	Explosive Ordnance Disposal
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
IDW	Investigation Derived Waste
mg/m <sup>3</sup>	milligrams per cubic meter
N/A	Not Available
NSA	Naval Support Activity
NIOSH	National Institute for Occupational Safety and Health
OELs	Occupational Exposure Limits
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PCBs	Polycarbonated biphenyls
PEL	Personal Exposure Limit
PHSO	Project Health and Safety Officer
PPE	Personal Protective Equipment
RPM	Remedial Project Manager
SOP	Standard Operating Procedure
SSO	Site Safety Officer

STEL	Short term exposure limit
SWP	Safe Work Permits
TBD	To be determined
TLV	Threshold Limit Values
TOM	Task Order Manager
TWA	Time Weighted Average
SWMU	Solid Waste Management Unit
TtNUS	Tetra Tech NUS, Inc.

**ATTACHMENT I**  
**MEDICAL DATA SHEET**

## MEDICAL DATA SHEET

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

Project \_\_\_\_\_

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

Address \_\_\_\_\_

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

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

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

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

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

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

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

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\_\_\_\_\_

Name (Print clearly)

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

**ATTACHMENT II**  
**INCIDENT REPORT FORM**



Report Date, Report Prepared By, Incident Report Number
INSTRUCTIONS:
All incidents (including those involving subcontractors under direct supervision of Tetra Tech personnel) must be documented on the IR Form.
Complete any additional parts to this form as indicated below for the type of incident selected.
TYPE OF INCIDENT (Check all that apply) Additional Form(s) Required for this type of incident
Near Miss (No losses, but could have resulted in injury, illness, or damage) Complete IR Form Only
Injury or Illness Complete Form IR-A; Injury or Illness
Property or Equipment Damage, Fire, Spill or Release Complete Form IR-B; Damage, Fire, Spill or Release
Motor Vehicle Complete Form IR-C; Motor Vehicle
INFORMATION ABOUT THE INCIDENT
Description of Incident
Date of Incident Time of Incident
Weather conditions at the time of the incident Was there adequate lighting?
Location of Incident Was location of incident within the employer's work environment?
Street Address City, State, Zip Code and Country
Project Name Client:
TtNUS Supervisor or Project Manager Was supervisor on the scene?
WITNESS INFORMATION (attach additional sheets if necessary)
Name Company
Street Address City, State and Zip Code
Telephone Number(s)



**CORRECTIVE ACTIONS**

Corrective action(s) immediately taken by unit reporting the incident:

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

Corrective action(s) still to be taken (by whom and when):

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

**ROOT CAUSE ANALYSIS LEVEL REQUIRED**

Root Cause Analysis Level Required: Level - 1  Level - 2  None

**Root Cause Analysis Level Definitions**

<b>Level - 1</b>	<p><b>Definition:</b> A Level 1 RCA is conducted by an individual(s) with experience or training in root cause analysis techniques and will conduct or direct documentation reviews, site investigation, witness and affected employee interviews, and identify corrective actions. Activating a Level 1 RCA and identifying RCA team members will be at the discretion of the Corporate Administration office.</p> <p>The following events may trigger a Level 1 RCA:</p> <ul style="list-style-type: none"> <li>▪ Work related fatality</li> <li>▪ Hospitalization of one or more employee where injuries result in total or partial permanent disability</li> <li>▪ Property damage in excess of \$75,000</li> <li>▪ When requested by senior management</li> </ul>
<b>Level - 2</b>	<p><b>Definition:</b> A Level 2 RCA is self performed within the operating unit by supervisory personnel with assistance of the operating unit HSR. Level 2 RCA will utilize the 5 Why RCA methodology and document the findings on the tools provided.</p> <p>The following events will require a Level 2 RCA:</p> <ul style="list-style-type: none"> <li>▪ OSHA recordable lost time incident</li> <li>▪ Near miss incident that could have triggered a Level 1 RCA</li> <li>▪ When requested by senior management</li> </ul>

Complete the Root Cause Analysis Worksheet and Corrective Action form. Identify a corrective action(s) for each root cause identified within each area of inquiry.

**NOTIFICATIONS**

Title	Printed Name	Signature	Telephone Number	Date
Project Manager or Supervisor				
Site Safety Coordinator or Office H&S Representative				
Operating Unit H&S Representative				
Other: _____				

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

**INSTRUCTIONS:**

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

Incident Report Number: (From the IR Form)

**EMPLOYEE INFORMATION**

**Company Affiliation**

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

Full Name

Company (if not TtNUS employee)

Street Address, City, State and Zip Code

Address Type

Home address (for TtNUS employees)

Business address (for subcontractors)

**Telephone Numbers**

Work: \_\_\_\_\_

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

Cell: \_\_\_\_\_

Occupation (regular job title)

Department

Was the individual performing regular job duties?

Yes  No

Time individual began work

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

**Safety equipment**

Provided? Yes  No

Type(s) provided:  Hard hat  Protective clothing

Used? Yes  No  If no, explain why

Gloves  High visibility vest

Eye protection  Fall protection

Safety shoes  Machine guarding

Respirator  Other (list)

**NOTIFICATIONS**

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

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

Yes  No

Date of report

H&S Personnel Notified

Time of report

Time of Report

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

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

## INJURY / ILLNESS DETAILS

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

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

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

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## MEDICAL CARE PROVIDED

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

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

<b>Name of physician or health care professional</b>	<b>Facility Name</b>
<b>Street Address, City State and Zip Code</b>	<b>Type of Care?</b>
	Was individual treated in emergency room? Yes <input type="checkbox"/> No <input type="checkbox"/>
	Was individual hospitalized overnight as an in-patient? Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Telephone Number</b>	Did the individual die? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, date: _____
	Will a worker's compensation claim be filed? Yes <input type="checkbox"/> No <input type="checkbox"/>

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

## SIGNATURES

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

Affected individual (print)	Affected individual (signature)	Telephone Number	Date

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

**INSTRUCTIONS:**

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

Incident Report Number: (From the IR Form)

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

Property Damage       Equipment Damage       Fire or Explosion       Spill or Release

**INCIDENT DETAILS**

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

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

**Response Actions Taken:**

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

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

Agency(s) Contact Name(s)

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

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

Item:	Extent of damage:	Estimated repair cost

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

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

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

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

**NOTIFICATIONS**

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

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

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

**INSTRUCTIONS:**

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

Incident Report Number: (From the IR Form)

**INCIDENT DETAILS**

Name of road, street, highway or location where accident occurred

Name of intersecting road, street or highway if applicable

County

City

State

Did police respond to the accident?

Yes  No

Did ambulance respond to the accident?

Yes  No

Name and location of responding police department

Ambulance company name and location

Officer's name/badge #

Did police complete an incident report? Yes  No  If yes, police report number: \_\_\_\_\_  
Request a copy of completed investigation report and attach to this form.

**VEHICLE INFORMATION**

How many vehicles were involved in the accident? \_\_\_\_\_ (Attach additional sheets as applicable for accidents involving more than 2 vehicles.)

**Vehicle Number 1 – Tetra Tech Vehicle**

**Vehicle Number 2 – Other Vehicle**

Vehicle Owner /  
Contact  
Information

Vehicle Owner /  
Contact  
Information

Color

Color

Make

Make

Model

Model

Year

Year

License Plate #

License Plate #

Identification #

Identification #

Describe damage to vehicle number 1

Describe damage to vehicle number 2

Insurance Company Name and Address

Insurance Company Name and Address

Agent Name

Agent Name

Agent Phone No.

Agent Phone No.

Policy Number

Policy Number

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

**COMPLETE AND SUBMIT DIAGRAM DEPICTING WHAT HAPPENED**

A large, empty rectangular box with a thin black border, intended for drawing a diagram. The box occupies most of the page below the instruction header.

**ATTACHMENT III**  
**SAFE WORK PERMITS**

**SAFE WORK PERMIT  
MOBILIZATION AND DEMOBILIZATION ACTIVITIES  
NSA CRANE – SWMU 12, 13, 16**

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

**I. Work limited to the following (description, area, equipment used):** Mobilization and demobilization activities

**II. Primary Hazards:** Lifting; slips, trips and falls; vehicular and foot traffic; insect/animal bites and stings; poisonous plants; inclement weather.

**III. Field Crew:** \_\_\_\_\_

**IV. On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

**V. Protective equipment required**

Level D  Level B   
 Level C  Level A

**Respiratory equipment required**

Yes  Specify on the reverse  
 No

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, or coveralls, safety glasses and safety footwear. Hard hats and hearing protection will be worn when working near operating equipment.

<b>VI. Chemicals of Concern</b>	<b>Hazard Monitoring</b>	<b>Action Level(s)</b>	<b>Response Measures</b>
<u>None anticipated</u>	<u>None</u>	<u>None</u>	<u>None</u>

**Primary Route(s) of Exposure/Hazard:** NA

**(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)**

**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 checked="" type="checkbox"/> No
Chemical/splash goggles ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Radio/Cellular Phone ..... <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 – Work) ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Work/rest regimen ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Safety toe work shoes/boots ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
High visibility vest ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Other ..... <input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: Tyvek coverall to protect against natural hazards (e.g., ticks) if working/walking through areas of high grass. Use insect repellants containing at least 10% DEET and tape up in such areas. Follow manufacturer's recommendations for proper application and reapplication. Hard hat when overhead hazards exist. Safety glasses when near eye hazards. Hearing protection when in high noise areas.

**VIII. Site Preparation**

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc.).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IX. Additional Permits required** (Hot work, confined space entry, excavation etc.) .....  Yes  No  
*If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

**X. Special instructions, precautions:** Preview work locations to identify potential hazards (slips, trips, and falls, natural hazards, etc.) Review PPE needs based on activities being performed and the associated hazards. Use safe lifting procedures and obtain assistance when handling heavy or awkward objects. Suspend site activities in the event of inclement weather. Observe site workers for signs and symptoms of heat/cold stress. Use sun block (SPF > 15) to prevent sunburn if necessary.

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

**SAFE WORK PERMIT  
MULTIMEDIA SAMPLING ACTIVITIES  
NSA CRANE – SWMU 12, 13, 16**

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

**I. Work limited to the following (description, area, equipment used):** Multimedia sampling activities including: groundwater, seep and surface oils.

**II. Primary Hazards:** Slips, trips and falls; heavy equipment hazards, vehicular and foot traffic; insect/animal bites and stings; poisonous plants; inclement weather, chemical contamination.

**III. Field Crew:** \_\_\_\_\_

**IV. On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

**V. Protective equipment required**

Level D  Level B   
 Level C  Level A

**Respiratory equipment required**

Yes  Specify on the reverse  
 No

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, or coveralls, safety glasses and safety footwear. Hard hats and hearing protection will be worn when working near operating equipment.

**VI. Chemicals of Concern**

Metals and RDX

**Hazard Monitoring /Action Level(s)**

visual observation/area wetting

**Response Measures**

Suspend site activities and retreat to unaffected area.

**Primary Route(s) of Exposure/Hazard:** inhalation, dermal, ingestion

**(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)**

**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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Safety belt/harness/lifeline .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Chemical/splash goggles .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Radio/Cellular Phone .....	<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 type="checkbox"/> No	Gloves (Type – nitrile).....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Work/rest regimen.....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety toe work shoes/boots .....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers.....	<input type="checkbox"/> Yes <input type="checkbox"/> No
High visibility vest.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other .....	<input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: Wear a hard-hat when in areas with overhead hazards. Tyvek coverall to protect against natural hazards (e.g., ticks) if working/walking through areas of high grass. Use insect repellants containing at least 10% DEET and tape up in such areas. Follow manufacturer's recommendations for proper application and reapplication. Wear high visibility clothing when working near traffic. If working in hot or cold extremes follow the work/rest regimen found in the HSGM. Wear boot covers in excessively muddy conditions.

**VIII. Site Preparation**

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc). .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IX. Additional Permits required** (Hot work, confined space entry, excavation etc.) .....  Yes  No  
*If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

**X. Special instructions, precautions:** Preview work locations to identify potential hazards (slips, trips, and falls, natural hazards, etc.) Review PPE needs based on activities being performed and the associated hazards. Use safe lifting procedures and obtain assistance when handling heavy or awkward objects. Suspend site activities in the event of inclement weather. Observe site workers for signs and symptoms of heat/cold stress. Use sun block (SPF > 15) to prevent sunburn if necessary.

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

**SAFE WORK PERMIT  
DECONTAMINATION ACTIVITIES  
NSA CRANE – SWMU 12, 13, 16**

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

**I. Work limited to the following (description, area, equipment used):** Decontamination of equipment. Brushes and spray bottles will be used to decontaminate small sampling equipment.

**II. Primary Hazards:** Chemical exposure, transfer of contamination, inclement weather, noise, slips/trips.

**III. Field Crew:** \_\_\_\_\_

**IV. On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

**V. Protective equipment required**

Level D  Level B   
 Level C  Level A

**Respiratory equipment required**

Yes  Specify on the reverse  
 No

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety glasses, safety footwear, and nitrile gloves. Impermeable aprons are preferred protection against soiling work clothes when lifting auger flights because of the need to carry close to the body. If it (impermeable apron) does not offer adequate protection, PVC rain suits or PE or PVC coated Tyvek should be employed. Chemical resistant boot covers if excessive liquids are generated or to protected footwear.

**VI. Chemicals of Concern**

Decontamination Fluids

**Hazard Monitoring/Action Level(s)**

refer to MSDS

**Response Measures**

refer to MSDS

**Primary Route(s) of Exposure/Hazard:** Inhalation and direct contact and ingestion

**(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)**

**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/Cellular Phone .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash shield.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Barricades .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash suits/coveralls.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Gloves (Type – Nitrile) .....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron .....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Work/rest regimen.....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety toe Work shoes or boots .....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers.....	<input type="checkbox"/> Yes <input type="checkbox"/> No
High visibility vest.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Tape up/use insect repellent .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
First Aid Kit.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher .....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other .....	<input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: Chemical resistant boot covers if excessive liquids are generated or to protect footwear. Impermeable apron may be worn to protect from overspray

**VIII. Site Preparation**

Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place.....	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Physical Hazards Identified and Isolated (Splash and containment barriers) .....	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc) .....	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

**IX. Additional Permits required** (Hot work, confined space entry, excavation etc.) .....  Yes  No  
*If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

**X. Special instructions, precautions:** Suspend site activities in the event of inclement weather. Employ proper lifting techniques. When/where possible use heavy equipment to move and place containers.

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

**SAFE WORK PERMIT  
IDW MANAGEMENT  
NSA CRANE – SWMU 12, 13, 16**

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

**SECTION I: General Job Scope**

- I. **Work limited to the following (description, area, equipment used):** IDW management activities includes containerization, staging, monitoring for leaks of IDW accumulated wastes. Wastes types include purge and decontamination wash waters.
- II. **Primary Hazards:** Lifting, pinches and compressions; flying projectiles; slips, trips, and falls and chemical contamination.
- III. **Field Crew:** \_\_\_\_\_
- IV. **On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  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  Yes  See Reverse  
 Level C  Level A  No
- Modifications/Exceptions: None anticipated

- VI. **Chemicals of Concern** **Hazard Monitoring /Action Level(s)** **Response Measures**
- None anticipated none none

**Primary Route of Exposure/Hazard:** NA

**(Note to FOL and/or SSO: Each item in Sections VII, VIII, and IX must be checked Yes or No)**

**VII. Additional Safety Equipment/Procedures**

- |                                   |   |                                      |   |
|-----------------------------------|---|--------------------------------------|---|
| Hard-hat .....                    | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Hearing Protection (Plugs/Muffs) ... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety Glasses .....              | <input 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/Cellular Phone .....           | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| Splash Shield .....               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Barricades .....                     | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| Splash suits/coveralls.....       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Gloves (Type – Leather/Cotton).....  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Impermeable apron .....           | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Work/rest regimen.....               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety toe work shoes/boots ..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Chemical Resistant Boot Covers       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| High visibility vest.....         | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Tape up/use insect repellent .....   | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| First Aid Kit.....                | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Fire Extinguisher .....              | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| Safety Shower/Eyewash.....        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Other .....                          | <input type="checkbox"/> Yes <input type="checkbox"/> No            |

**Modifications/Exceptions:** Tyvek coverall to protect against natural hazards (e.g., ticks) if working/walking through areas of high grass. Use insect repellants containing at least 10% DEET if necessary. Follow manufacturer's recommendations for proper application and reapplication. If working in areas where snakes are a threat, wear snake chaps to protect against bites. High visibility vest if near active traffic areas.

**VIII. Site Preparation**

- |  |                              |                             |  |
|--|------------------------------|-----------------------------|--|
| Utility Locating and Excavation Clearance completed.....                                   | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> NA |
| Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place..... | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>               |
| Physical Hazards Identified and Isolated.....  | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>               |
| Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc). ..... | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>               |

- IX. **Additional Permits required** (Hot work, confined space entry, excavation etc.) .....  Yes  No  
*If yes, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

- X. **Special instructions, precautions:** Suspend site activities in the event of inclement weather. Employ proper lifting techniques. When/where possible use heavy equipment to move and place containers. When placing drums – Place the label and retention ring nut on the outside where it is readily visible. Place 4-drums to a pallet. Maintain a minimum distance of 4-feet between pallet rows. An IDW inventory shall be generated to provide the number of drums, contents, and volumes. This inventory should be provided to the facility contact. Inspect equipment prior to use.

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

**ATTACHMENT IV**  
**OSHA POSTER**

# Job Safety and Health

## It's the law!



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

### EMPLOYEES:

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

### EMPLOYERS:

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

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



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

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

OSHA 3165-12-06R