Contract No. DACA87-00-D-0035
Task Order 0018

Final Site Safety and Health Plan (SSHP) for Ordnance and Explosives (OE) Removal at the Former Five Points OLF Arlington, Texas

Prepared For:
U.S. Army Engineering and Support Center
Huntsville, Alabama

Prepared By:
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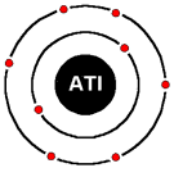

The project is located in the
U.S. Army Engineer District: Fort Worth

September 24, 2004

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SSHP APPROVAL SHEET

Project: **Ordnance and Explosives (OE) Removal**

Site Location: **Arlington, Texas**

Contract Number: **DACA87-00-D-0035**
Task Order: **0018**

Site Name: **Former Five Points Naval Air Station Outlying Field (OLF)**

Reviewed and Approved By:

Cheryl M. Riordan, CSP — Date: 3/22/04

Paul C. Duncan, ATI Safety Manager — Date: 3/24/04

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D.0 SITE SAFETY AND HEALTH PLAN (SSHP)

D.1 Introduction

D.1.1 Background Information

D.1.1.1 American Technologies, Inc. (ATI) out of Oak Ridge, Tennessee was issued Contract Number DAC87-00-D-0035, Task Order 0018.

D.1.1.2 This contract is for an Ordnance and Explosives (OE) Removal Action at the Five Points Naval Air Station Outlying Field in Arlington, Texas.

D.1.1.3 The objective of this task order is for ATI to safely locate, identify and dispose of detected Unexploded Ordnance (UXO) and OE items to maximum detectable depth on the 162-acre site. Refer to site map in Appendix B-1.

D.1.1.4 ATI has maintained an Experience Modification Rate (EMR) for the three most recent years as follows:

Policy Year	EMR
2003	0.95
2002	0.83
2001	0.94

D.1.1.5 The phases of work and hazardous activities, which require Activity Hazard Analyses, are listed in paragraph D.4.1.2.

D.1.2 Statement of Safety and Health Policy

D.1.2.1 American Technologies, Inc. (ATI) believes strongly that our people are the company's most important and valuable asset. The actions of the personnel, working together as a team, determine ultimately the success of the endeavors of the company.

D.1.2.2 Accidental injuries and illnesses can cause needless pain and suffering of employees and their families, as well as increasing costs and decreasing productivity and morale among employees. ATI is committed to providing a safe and healthful work environment for all of our employees in all locations. ATI's ultimate goal is an accident-free work environment. ATI is committed to doing all in its power to make this a reality.

D.1.3 Supervisors Accountability

D.1.3.1 On each ATI project jobsite, the site senior supervisor or superintendent will be accountable to management for the successful achievement of targeted Company safety and health goals. ATI's project safety and health goals are:

- Zero fatalities or serious injuries.
- Reduce injuries, lost workday accidents and workers compensation claims.
- Prevention of damage or destruction to company property or equipment.
- Increased productivity through reduction of injuries.
- Reduced worker's compensation costs.
- Enhance company's image by working safely.
- Keep safety a paramount part of the workers daily activities.
- Recognize and reward safe work practices.
- Improve morale and productivity.

D.1.3.2 The role of supervisors in safety leadership is obvious. They are the liaison between management's mission and the employees' ability to follow through in accomplishing it.

D.1.3.3 An active safety accountability system contributes to an effective work environment resulting in improved productivity, higher morale and quality performance. Safety accountability is achieved by total management commitment, active safety supervision, employee involvement, safety performance evaluations, new employee orientation, and effective communication.

D.1.4 Site Safety and Health Plan (SSHP) Preparation

D.1.4.1 The ATI Safety Office has prepared this SSHP to address all on-site work to be performed by ATI and all of its' subcontractors. This plan is developed, and will be implemented and overseen, by a Certified Safety Professional (CSP) and approved by the ATI Project Manager (ATI PM), with final approval from the government's Contracting Officer. Once approved, this SSHP will be enforced as if it were an addition to the contract specifications. This SSHP will be enforced, on-site, by the Unexploded Ordnance Safety Officer (UXOSO), the Senior Unexploded Ordnance Supervisor (SUXOS), and the ATI PM, with oversight by the ATI Safety Office.

D.1.4.2 The purpose of this SSHP is to describe protocols necessary for the anticipation, recognition, evaluation, and control of hazards associated with each task performed at this site. The SSHP addresses site-specific safety and health requirements and procedures based upon-site-specific conditions. The level of detail in the SSHP is tailored to the type of work, complexity of operations to be performed, and hazards anticipated. A copy of this SSHP will be available on this project site for the duration of site operations.

D.1.4.3 Any incident of threats to worker health and safety, or the potential for environmental impacts, will result in the immediate implementation of corrective actions, by the UXOSO and site managers, to protect the workers and the environment.

D.1.4.4 This SSHP is developed in accordance with the requirements of 29 CFR 1910/29, CFR 1926, ER 385-1-92, EM 385-1-1, any other applicable federal, state, and local safety and occupational health laws and regulations, and the ATI Corporate Safety and Health Program (CSHP). Where requirements of various applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements will apply to this site. The SSHP addresses all elements required by 29 CFR 1910.120(b)(4)(ii), 29 CFR 1926.65(b)(4)(ii), and ER 385-1-92, Appendix B, and EM 385-1-1.

D.1.4.5 When activities are to be conducted, and those activities fall within the major sections of EM 385-1-1, this SSHP shall be written to meet requirements outlined in that manual.

D.1.4.6 Changes may be required in this SSHP to adapt to new conditions or unanticipated situations. Prior to the start of any new tasks, the ATI Safety Office will prepare any changes required in this plan, with concurrence by the ATI PM and approval of the CSP. Approval of such changes will be requested, in writing, to the government's Contracting Officer, prior to implementing any changes. Should any unforeseen hazard become evident during the performance of the work, the UXOSO will implement immediately corrective actions to protect workers and bring such hazard to the attention of the ATI Safety Office, the SUXOS, and the ATI PM. They will, in turn, notify the government's Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, necessary action will be taken to re-establish and maintain safe working conditions in order to safeguard on-site personnel, visitors, the public, and the environment.

D.1.4.7 ATI has an extensive CSHP in place, which has the full support of the Corporate Management staff. The ATI CSHP is reviewed and updated annually to ensure that it remains current with regulatory requirements.

D.1.5 Safety and Health Inspections

D.1.5.1 There are no tasks to be performed during activities under the SOW, which require external agency safety and health inspections. Should additional tasks to the SOW be added, which will require additional inspection activities, this section of the site safety and health plan shall be revised to include these procedures.

D.2 Staff Organization, Qualification, and Responsibilities

D.2.1 General

D.2.1.1 All site operational and other personnel having exposure potential to site hazards are subject to the requirements of this SSHP. Work may not be performed in a manner that conflicts with the intent of, or the inherent safety, health, or environmental precautions expressed in this SSHP. After due warnings, personnel violating safety procedures will be dismissed from the site.

D.2.1.2 The safety and health requirements listed in this SSHP may change as site work progresses; however, no changes will be made that would lower the inherent safety, health, or environmental precautions expressed in this SSHP without approval of the United States Army Engineering and Support Center, Huntsville (USACE) and ATI.

D.2.1.3 Figure D-1 shows the key project personnel positions for safety and health and the lines of authority.

D.2.2 ATI Project Manager (ATI PM)

D.2.2.1 The ATI PM, David Farmer, will provide project management and administrative support during the conduct of field operations and will prepare or approve all United States Army Corps of Engineers (USACE)-required reports and documents. ATI will have overall responsibility for the health and safety of site personnel operating under this SOW for the Ordnance and Explosives (OE) Removal Action at the Five Points Naval Air Station Outlying Field, Arlington, Texas.

D.2.2.2 The ATI PM will be the point of contact (POC) on all project-related issues with USACE. He will ensure that ATI and subcontractor personnel on-site, through close coordination with the SUXOS, meet all safety and health requirements.

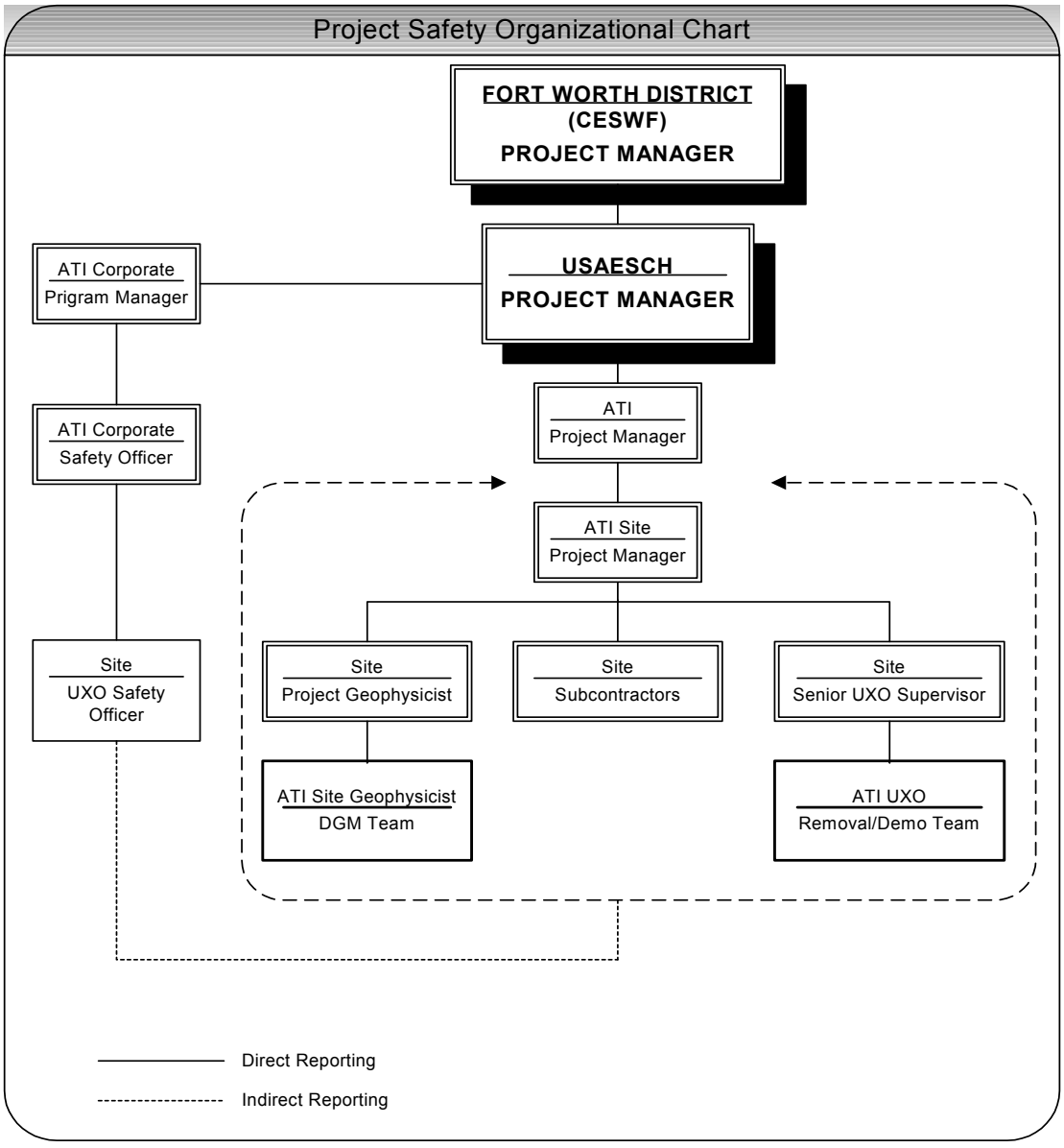
D.2.3 Senior Unexploded Ordnance Supervisor (SUXOS)

D.2.3.1 The SUXOS, Darrell Walden, is responsible for on-site enforcement of all Work Plan and site-specific safety and health plan requirements. He will provide direct supervision of on-site personnel and will coordinate activities with subcontractor personnel.

D.2.3.2 The SUXOS will coordinate closely with the ATI PM regarding site activities and will be the on-site POC with the USACE on-site representative.

D.2.3.3 The SUXOS will work closely with the ATI UXOSO to ensure that all employees on the site are trained adequately and continue to follow safe operating procedures. The SUXOS is the primary POC for the UXOSO regarding resolution of on-site safety issues.

Figure D-1. Project Safety Organization



ATI = American Technologies, Inc.
DGM = Digital Geophysical Mapping
USAESCH = United States Army Engineereing and Supprot Center, Huntsville
UXO = Unexploded Ordnance

D.2.4 ATI Corporate Safety Office

D.2.4.1 The ATI Corporate Safety Office shall develop the site-safety and health plan.

D.2.4.2 A Certified Safety Professional (CSP), within the safety office, is responsible to oversee the development of the SSHP, by the ATI Safety Office, and review and

approve initial safety plans and recommended changes submitted to the government's Contracting Officer for final approval.

D.2.4.3 The Safety Manager, who is aligned with the ATI Safety Office, is responsible for preparation of this SSHP.

D.2.4.4 The Safety Manager will authorize periodic, unannounced audits of this project safety program during the course of contract work on this site.

D.2.5 ATI Site Unexploded Ordnance Safety Officer (UXOSO)

D.2.5.1 The ATI UXOSO, David Becker, reports directly to the ATI PM. He is the primary POC for on-site safety issues.

D.2.5.2 The UXOSO will coordinate closely with the SUXOS regarding all safety matters on the work site. He will be authorized to stop work at any time for safety and health reasons and will notify immediately the SUXOS and the on-site USACE Safety Specialist of the stop work and explain the cause of the stoppage.

D.2.5.3 The UXOSO will be responsible for implementing and enforcing the requirements of this SSHP. Any changes in operations or conditions requiring changes to this SSHP will be coordinated through the ATI Safety Office and the ATI PM.

D.2.5.4 The UXOSO will provide safety training to on-site employees and subcontractors through mobilization training sessions, daily tailgate safety briefings, daily debriefings, weekly supervisor safety meetings, visitor training, Personal Protective Equipment (PPE) training, as well as any other training needs that may surface during the course of operations. The UXOSO will enforce the proper levels of PPE in accordance with this SSHP and will coordinate with the ATI Safety Office prior to making any changes in PPE requirements.

D.2.5.5 The UXOSO will conduct daily safety inspections, weekly safety audits, and maintain all required safety forms (as well as the safety log), and he will follow up on any discrepancies noted until correction has been verified. The UXOSO will investigate all onsite accidents, incidents, and near misses.

D.2.6 Subcontractor Responsibilities

D.2.6.1 Subcontractor personnel working on this site will be required to prepare a site-specific safety and health plan, which is at least as stringent as the ATI SSHP, or they will follow requirements of this SSHP.

D.2.6.2 All ATI subcontractors will be responsible for providing medically approved and properly trained site personnel with certifications provided in their SSHP and updated as necessary. Current training certificates (i.e., 40-hour, 8-hour refresher, and 8-hour supervisors) and medical clearance certification will be maintained on-site with the UXO Safety Officer.

D.2.6.3 The subcontractor will also be responsible for providing equipment, including PPE that is safe for operation and free from any obvious hazards.

D.2.7 Responsibilities of all Site Personnel

D.2.7.1 All ATI, USACE, subcontractor personnel, and visitors, who will be involved in on-site activities, are responsible for the following:

- Taking all reasonable precautions to prevent injury to site personnel and being alert to potentially harmful situations.
- Performing only those tasks that can be done safely with proper training provided. All on-site personnel have stop-work authority when imminent safety or environmental hazards are found or identified.
- Notifying the ATI UXOSO of any special medical conditions (e.g., allergies, contact lenses, diabetes, etc.) that may be impacted by site operations.
- Notifying the ATI UXOSO of any prescription and/or nonprescription medication that a worker may be taking that might cause drowsiness, anxiety, or other unfavorable side effects.
- Preventing spillage and splash of materials to the greatest extent possible.
- Practicing good housekeeping by keeping the work area neat, clean, and in order.
- Reporting immediately all injuries, no matter how minor, to the ATI UXOSO.
- Complying with the SSHP and all safety and health recommendations and precautions, and using properly the PPE as determined by this SSHP and/or the ATI UXOSO.

D.2.8 Resumes

D.2.8.1 The resumes of all ATI personnel assigned specific safety and health responsibilities are included in Appendix H of the Work Plan.

D.3 Site Description and Contamination Characterization

D.3.1 Background

D.3.1.1 The work performed under this task order will be performed consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104, and the National Contingency Plan (NCP), Sections 300.120(d) and 300.400(e). In addition, all activities involving work in areas potentially containing OE hazards shall be performed consistent with U.S. Army Engineering and Support Center, Huntsville (USACE), U.S. Army Corps of Engineers (USACE), Department of the Army (DA), and Department of Defense (DOD) requirements regarding personnel, equipment and procedures. Ordnance and explosives (OE) hazards exist because of Department of Defense activities.

D.3.1.2 The work required under this Scope of Work (SOW) falls under the Defense Environmental Restoration Program – Formerly Used Defense Sites (DERP-FUDS).

D.3.1.3 OE is a safety hazard and constitutes an imminent endangerment to the general public, on site personnel and the environment. During this action, it may be necessary for the contractor to destroy on site any OE encountered. The contractor shall comply with 29 CFR 1910.120.

D.3.2 Site Description and History

D.3.2.1 Former Five Points Outlying Field (OLF) is located in southeast Arlington, Texas, at the southwest corner of Harris and Matlock Streets. In 1940, the War Department acquired land for a number of outlying fields for the Dallas Naval Air Station. One of the outlying fields was established in Arlington and consisted of 162 acres. The Navy constructed four runways at the site and designated it Five Points Outlying Field.

D.3.2.2 Navy aviators practiced “touch and go”s at the OLF for several years. At some unknown date, the purpose of Five Points OLF switched from practice landing fields to a practice bomb target.

D.3.2.3 It is thought that three types of practice bombs were used at the former OLF: M-47 chemical bombs; MK 23 Model (sic) I Navy bombs AN-MK 23 Mod I Navy; and M38 practice bombs. Common practice was to pressure test the M-47 chemical bombshell casings after manufacture to ensure they did not leak. Any M-47 shell casings that failed the pressure test and leaked were discarded for chemical warfare and filled with inert material and used as practice bombs.

D.3.2.4 The practice bombs were fitted with black powder spotting charges that would mark the location of the practice bombs upon impact. Spotting charge material included, but was not limited to, white phosphorus, rust, or flour stabilized red phosphorus, zinc oxide or fluoresce in dye.

D.3.2.5 The former practice bomb range was surface swept for ordnance in 1954. Clearance certificates were issued for the former range in 1954 and again in 1956. The 1954-clearance report documented that (75) M-47 chemical bombs, (27) AN-MK 23 Mod I Navy bombs, and (23) M38 practice bombs were removed from the former range.

D.3.2.6 Thirty-five acres of the former range were purchased in 1983, and Twin Parks Estates Mobile Home Park was developed from 1983-1984. The developer reportedly removed approximately 3,000 MK 23 practice bombs. An initial Inventory Project Report was completed for the former range under the Formerly Used Defense Sites program in 1996, and recommended an ordnance project for the former range with a Risk Assessment Code (RAC) score of 2. The remainder of the former range was developed as a subdivision in 1998 by KB Homes, with approximately 700 homes projected for the subdivision (South Ridge Hills).

D.3.2.7 Safety concerns, followed by lawsuits, arose with the finding of several MK23 practice bombs in developed lots. The RAC score was elevated to a 1, following the discovery that M47 practice chemical bombs were used at the former range, and the Fort Worth District, Corps of Engineers, has proposed to perform an OE removal at the site.

D.3.3 Topography

D.3.3.1 The area where activities are to be performed is considered quite level. Area elevation ranges from six hundred to six hundred and fifty feet. Access into the area of concern is excellent.

D.3.3.2 In accordance with the Scope of Work, approximately 10 percent of the site is undeveloped. Only a minimal brush-clearing requirement is anticipated.

D.3.4 Contamination Characterization

D.3.4.1 Chemical Warfare Material Contamination

D.3.4.1.1 There is no evidence that CWM has been tested or exists within the area comprising this project, except for M47 practice chemical bombs casings. Common practice was to use M-47 shell casings that failed a pressure test and leaked were discarded for chemical warfare and filled with inert material and used as practice bombs. The sites where work is to be conducted are not suspected to contain Chemical Warfare Materiel (CWM). However, if suspect CWM is encountered during any phase of site activities, all work will immediately cease. Project personnel will withdraw along cleared paths upwind from the discovery. The UXO team will notify the Corps of Engineers, CEHNC OE Safety Specialist. A team consisting of a minimum of two personnel will secure the area to prevent unauthorized access until relieved by the Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel. Personnel will position themselves as far upwind as possible while still maintaining security of the area.

D.3.4.2 **Hazardous Substance Contamination**

D.3.4.2.1 By definition, hazardous substances are those materials that can threaten human health and/or environmental well being if released into the environment.

D.3.4.2.2 This describes those hazardous substances or chemical contaminants present in soil that pose a threat to the environment, and as such may pose a threat to site personnel and the public during removal actions.

D.3.4.2.3 Past archival research and ordnance investigation indicate that such hazardous substances should not exist in the areas where the OE removal activity is to be conducted under this SOW.

D.3.4.2.4 The potential for a hazardous substance to adversely impact site personnel, during the removal action would be extremely unlikely.

D.3.4.3 **UXO/OE Contamination**

D.3.4.3.1 As a result of past usage and investigations, OE contamination may exist in the former Five Points Outlying Field (OLF), Arlington, Texas.

D.3.4.3.2 It is thought that three types of practice bombs were used at the former OLF: M-47 chemical bombs; AN-MK 23 Mod I Navy; and M38 practice bombs. Common practice was to pressure test the M-47 chemical bombshell casings after manufacture to ensure they did not leak. Any M-47 shell casings that failed the pressure test and leaked were discarded for chemical warfare and filled with inert material and used as practice bombs.

D.3.4.3.3 The practice bombs were fitted with spotting charges that would mark the location of the practice bombs upon impact. Spotting charge material included, but was not limited to, white phosphorus, rust, or flour stabilized red phosphorus, zinc oxide or fluoresce in dye.

D.3.4.3.4 A 1954 clearance report documented that (75) M-47 chemical bombs, (27) AN-MK 23 Mod I Navy, and (23) M38 practice bombs were removed from the former range. Thirty-five acres of the former range were purchased in 1983, and Twin Parks Estates Mobile Home Park was developed from 1983-1984. The developer reportedly removed approximately (3,000) MK 23 practice bombs.

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D.4 Hazardous Analysis and Risk Assessment

D.4.1 Project Task Hazard Analysis

D.4.1.1 Individual hazard analyses have been performed for each major task at this project site. Table D-1 lists the tasks, operations, and their associated hazards. The potential hazards have been identified, control measures have been outlined, training requirements and PPE requirements have been established, and equipment inspection procedures have been established. Should new operations be introduced to this site, the ATI Safety Office will perform a hazard analysis. Should operations change significantly during the course of this project, the hazard analysis will be updated to accommodate these changes. The ATI Safety Office will approve any changes in PPE or safe operating procedures. As stated in the Work Plan, approval of such changes shall be requested, in writing, to the government's Contracting Officer prior to implementing any changes.

D.4.1.2 The hazard analyses performed for this project include the following activities and are presented below and in the noted tables:

- Performing Surface UXO/OE Removal Action Activities. (Table D-2)
- Operating Geophysical Instruments. (Table D-3)
- Conducting Demolition Operations. (Table D-4)
- Performing UXO/OE Inspection Activities. (Table D-5)
- Location Survey and Mapping Operations. (Table D-6)
- Operating Heavy Equipment (Brush Cutter). (Table D-7)
- Operating Portable Hand and Power Brush Cutting Equipment. (Table D-8)
- Perform a Geophysical Investigation and Evaluation. (Table D-9)
- Perform Anomaly Reacquisition Operations. (Table D-10)
- Gain access to selected subsurface anomalies utilizing mechanical Earth Moving Machinery (EEM). (Table D-11)
- Gain access to selected subsurface anomalies utilizing hand operated excavation equipment. (Table D-12)
- Perform Quality Control (QC) Activities. (Table D-13)
- Performing Motor Vehicle Operations. (Table D-14)

Table D-1. Project Task Hazard Analysis

TASK	OPERATION	HAZARDS
Performing Surface UXO/OE Removal Action Activities	• Establish work area. • Locate surface UXO/OE items with the assistance of magnetic locators. • Identify UXO/OE items. • Live UXO/OE or suspected items will be disposed of by detonation. • Inert (explosive-free) OE items, requiring venting, will be set aside for venting to be performed. • Inspected OE scrap will be placed in a container to prevent commingling with OE scrap, which has not been inspected.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazards. • Heat/cold stress hazards. • Eye hazards. • Head hazards. • Cuts and abrasions hazards.
Operating Geophysical Instruments	• Using an appropriate geophysical instrument to establish working grids. • Ensure that there are no anomalies where marking stakes are to be driven. • Assist in locating surface anomalies during the investigation. • If required, wooden, fiberglass pin flags, or other non-metallic items will be used to mark survey lines, UXO, and OE scrap. • Perform the geophysical survey.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazards. • Heat/cold stress hazards. • Eye hazards.
Conducting Demolition Operations	• Make required notifications of demolition/venting operations. • Retrieve donor explosives required for operation. • Set up demolition charges in accordance with the demolition procedures. • Utilize filled sandbags around demolition charge, if required, to reduce the range in which fragments may travel. • Post sentries outside the Fragment Zone on all access roads. • Ensure sentries have a full view of the demolition and access areas. • Contact sentries to ensure that no pedestrian traffic is in the vicinity. • Evacuate demolition crew to a safe location. • Demolition occurs. • Inspect the demolition-site to ensure that demolition/venting has been completed properly.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazards. • Heat/cold stress hazards. • Blast hazards (due to static electricity and EMR). • Overpressure hazards (due to Blast Hazard). • Fragmentation hazards (due to Blast Hazard). • Eye hazards (due to Blast Hazard). • Noise hazards (due to Blast Hazard). • Cuts and abrasions hazards (due to Blast Hazard).
Performing UXO/OE Inspection Activities	• Thorough inspection of UXO/OE items. • Inspected OE scrap will be placed in a container to prevent commingling with OE scrap, which has not been inspected. • Inert (explosive-free) OE items requiring venting will be set aside for venting to be performed. • Live UXO/OE or suspected items will be set aside for disposal, by detonation.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazard. • Heat/cold stress hazards. • Eye hazards. • Cuts and abrasion hazards.
Location Survey and Mapping Operations	• Escort Land Surveyors to conduct survey activities. • Use appropriate geophysical instrument to ensure there are no anomalies where marking stakes or survey pins are to be driven by the survey team. • Drive marking stakes to mark gird corners and transects.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazard. • Heat/cold stress hazards. • Eye hazards.

Table D-1. Project Task Hazard Analysis (continued)

TASK	OPERATION	HAZARDS
Operating Heavy Equipment (Brush Cutter)	• Inspect heavy equipment to ensure that it is functioning properly. • Have a ground guide in clear view at all times (if required). • If required, when guide signals it is safe to start, begin brush-cutting operations. • When operations are complete, safely store equipment.	• Slips, trips, and fall hazards. • Biological hazards. • Heat/cold stress hazard. • Eye hazard. • Head hazard. • Cuts and abrasions hazard (from flying debris within the equipment throw area). • Crush and pinch point hazard. • Noise hazard. • Exhaust from equipment in the breathing zone of workers. • Handling flammable liquids during fueling.
Operating Portable Hand and Power Brush Cutting Equipment	• Inspect portable hand and power brushing cutting equipment to ensure that it is functioning properly and has no defects. • Ensure that all Personal Protective Equipment (PPE) is on hand and used. • When individual area of operation is clear of all unnecessary personnel, start brush-clearing operation. • When operations are complete, safely perform equipment maintenance and storage.	• Slips, trips, and fall hazards. • Biological hazards. • Heat/cold stress hazard. • Eye hazard. • Head hazard. • Cuts and abrasions hazard (from flying debris within the equipment throw area). • Noise hazard. • Exhaust from equipment in the breathing zone of workers. • Handling flammable liquids during fueling.
Perform a Geophysical Investigation and Evaluation	• Utilizing geophysical and navigational instruments, capture all positional and instrument data digitally for analysis and evaluation. • Perform all data analysis as necessary to produce a geophysical map of the site.	• Slips, trips, and fall hazards. • Biological hazards. • Heat/cold stress hazards. • Eye hazards.
Perform Anomaly Reacquisition Operations	• Utilize geophysical and navigational instruments to reacquire anomalies selected for data check and intrusive investigation. • Fiberglass pin flags or plastic cones will be used to mark anomaly locations.	• Slips, trips, and fall hazards. • Biological hazards. • Heat/cold stress hazards. • Eye hazards.
Gain access to selected subsurface anomalies utilizing mechanical Earth Moving Machinery (EMM)	• Inspect EMM to ensure that it is functioning properly and has no defects. • Ensure that all Personal Protective Equipment (PPE) is on hand and used. • When individual area for excavating is clear of all unnecessary personnel start excavation operation, carefully removing soil over anomaly. • When operations are complete, safely perform equipment maintenance and storage.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazards. • Heat/cold stress hazard. • Eye hazard. • Head hazard. • Crush and pinch point hazard. • Noise hazard. • Exhaust from equipment in the breathing zone of workers. • Handling flammable liquids during fueling.

Table D-1. Project Task Hazard Analysis (continued)

TASK	OPERATION	HAZARDS
Gain access to selected subsurface anomalies utilizing portable hand operated excavation equipment	• Inspect hand excavation equipment to ensure that it is functioning properly and has not defects. • Ensure that all Personal Protective Equipment (PPE) is on hand and used. • When individual area of operation is clear of all unnecessary personnel, start soil excavation operation. • When operations are complete, safely perform equipment maintenance and storage.	• Slips, trips, and fall hazards. • UXO/OE hazards. • Biological hazards. • Heat/cold stress hazard. • Eye hazard. • Head hazard. • Noise hazard. • Cuts and abrasions hazard.
Perform Quality Control (QC) Activities	• Using an appropriate geophysical instrument, perform QC activities. • Ensure that there are no surface and sub-surface UXO or UXO like items within completed grids. • Investigate discovered surface or sub-surface anomalies. • Report any anomalies meeting failure criteria to the SUXOS.	• Slips, trips, and falls hazards. • UXO/OE hazards. • Biological hazards. • Heat/cold stress hazards. • Eye hazards.
Performing Motor Vehicle Operations	• Inspect vehicles to ensure proper working condition. • Ensure that vehicles are properly equipped. • Explosive materials, when transported, will be loaded and secured to prevent shifting. • Conduct motor vehicle operations.	• Explosive hazards. • Heat stress. • Personnel struck by mobile equipment. • Vehicle collisions.

EMM = Earth Moving Machinery.
EMR = Electromagnetic Radiation.
OE = Ordnance and Explosives.
PPE = Personal Protective Equipment
QC = Quality Control.
SUXOS = Senior UXO Supervisor.
UXO = Unexploded Ordnance.
UXO/OE = Unexploded Ordnance/Ordnance and Explosives.

Table D-2. Performing Surface UXO/OE Removal Action Activities

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Performing Surface UXO/OE Removal Action Activities** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Establish work area. o Locate surface UXO/OE items with the assistance of magnetic locators. o Identify UXO/OE items. o Live UXO/OE or suspected items will be disposed of by detonation. o Inert (explosive-free) OE items requiring venting will be set aside for venting to be performed. o Inspected OE scrap will be placed in a container to prevent commingling with OE scrap, which has not been inspected.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards. o Head hazards. o Cuts and abrasions hazards.	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o Only UXO-qualified personnel will perform OE operations. o In areas with poor visibility, a metal locator will be used to clear pathways. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Each operator will receive proper training for each piece of equipment used and will maintain the equipment in good condition. o PPE will be worn at all times, by personnel operating equipment and in the immediate vicinity of operations.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Schonstedt™ Model GA-52Cx magnetic locator. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o All equipment is to be inspected daily before use. o Equipment is to be calibrated in accordance with the manufacturer's instructions. o Metal locators will undergo a field calibration on a daily basis where the operator, on a test bed, tests it to ensure continued functioning of equipment in the field. o If equipment is not functioning properly or it is not in useable condition, it is to be turned in for repair/replacement.	o Operators will be trained in the proper use of required equipment and in the required PPE. o All operators will be trained in performing field calibration tests of the metal locators. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-3. Operating Geophysical Instruments

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Operating Geophysical Instruments** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Using an appropriate geophysical instrument to establish working grids. o Ensure that there are no anomalies where marking stakes are to be driven. o Assist in locating surface anomalies during the investigation. o If required, wooden, fiberglass pin flags, or other non-metallic items will be used to mark survey lines, UXO, and OE scrap. o Perform the geophysical survey.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards.	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o Only UXO-qualified personnel will perform OE operations. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Operators will wear all required PPE. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o The following precautions shall be followed (Reference: CEHNC Safety Advisory 02-01) o Never place an operating geophysical instrument, its electronics, data processor, or battery pack on the ground in an area suspected of containing unexploded ordnance (UXO) with electronic fuzing. o Do not use conductivity meters around trash piles or trenches that may contain UXO with electronic fuzing. o Ground Penetrating Radar (GPR) units shall not be used on sites suspected of containing UXO with electric fuzing.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Geophysical detection instrumentation - Schonstedt™ Model GA-52Cx Magnetic locator. - Geonics EM 61, Mark II - GTL TM-5 Magnetometer o Level D PPE: - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o All equipment is to be inspected daily before use. o Equipment is to be calibrated in accordance with the manufacturer's instructions. o If equipment is not functioning properly or it is not in useable condition, it is to be turned in for repair/replacement. o The metal locator will also undergo a field calibration on a daily basis where the operator, on a test bed, tests it to ensure continued functioning of equipment in the field.	o Operators will be trained in the proper use and functions of the geophysical/tracking equipment and in required PPE. o All operators will be trained in performing field calibration tests of the metal locators. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-4. Conducting Demolition Operations

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Conducting Demolition Operations** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Make required notifications of demolition/venting operations. o Retrieve donor explosives required for operation. o Set up demolition charges in accordance with the demolition procedures. o Utilize filled sandbags around demolition charge, if required, to reduce the range in which fragments may travel. o Post sentries outside the Fragment Zone on all access roads. o Ensure sentries have a full view of the demolition and access areas. o Contact sentries to ensure that no pedestrian traffic is in the vicinity. o Evacuate demolition crew to a safe location. o Demolition occurs. o Inspect the demolition-site to ensure that demolition/venting has been completed properly.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Blast hazards (due to static electricity and EMR). o Overpressure hazards (due to Blast Hazard). o Fragmentation hazards (due to Blast Hazard). o Eye hazards (due to Blast Hazard). o Noise hazards (due to Blast Hazard). o Cuts and abrasions hazards (due to Blast Hazard).	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o Establish and maintain communications with the USACE OE Safety Specialist during demolition operations. o All UXO workers will be well trained in hazards inherent with UXO/OE operations and in safe operating procedures. o All UXO workers will be required to wear cotton clothing (under- and outerwear) to reduce the generation of static electricity. o Radios will not be used in the area once the pit is primed or during the priming process, unless the radios are at the firing point and the firing line is shunted. o Exclusion Zone (EZ) sentries will be posted at access road barricades to prevent all unauthorized personnel from entering the EZ during demolition operations. o EZ sentries will wear orange vests during demolition operations. o EZ sentries will maintain radio communications with the demolition team supervisor during demolition operations. o The demolition crew will observe fragmentation distances when seeking shelter from blasting. The fragmentation distance, based on the Most Probable Munitions (MPM), a MK 23 Practice Bomb, is 12 feet. o Hearing protection will be strictly enforced during all demolition operations. o Procedures for demolition operations contained in Chapter 2.0 of the Work Plan, will be followed at all times.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Donor explosive materials. o Blasting circuits. o Orange safety vests (for EZ sentries). o Appropriate radio communications. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles - Safety glasses (ANSI Z87.1-1989). - Hearing protection (NRR 29 dB).	o All equipment will be inspected prior to use. o If equipment is not in good condition or is not functioning properly, it will be removed from service for repair/replacement. o Explosive materials will be inspected to ensure that they are in serviceable condition.	o All UXO workers are required to be graduates of one of the schools or courses outlined in DID OE-025.01. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance. o All workers will receive supervised OJT from the SUXOS to ensure that they are familiar with safe operating procedures, emergency procedures, and PPE requirements during demolition operations.

Table D-5. Performing UXO/OE Inspection Activities

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Performing UXO/OE Inspection Activities** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Thorough inspection of UXO/OE items. o Inspected OE scrap will be placed in a container to prevent commingling with OE scrap, which has not been inspected. o Inert (explosive-free) OE items requiring venting will be set aside for venting to be performed. o Live UXO/OE or suspected items will be set aside for disposal, by detonation.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards.	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Only UXO-qualified personnel will perform OE operations. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o UXO basic safety rules will apply. o Minimum number of personnel for efficient operations will be allowed on-site. o Cotton clothing will be worn to reduce the potential for static build-up. o Leather gloves, at a minimum, will be worn to protect hands. o Leather, Kevlar™ gloves are highly resistant to tears and cuts from handling sharp objects and may be used. o PPE will be worn at all times.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o All PPE will be inspected prior to use. o Defective equipment will be removed from service until repaired/replaced.	o All UXO personnel are required to be graduates of one of the schools or courses outlined in DID OE-025.01. o Personnel will also receive site-specific training involving recognition of all types of UXO/OE, expected on this site, other anticipated site hazards, and PPE requirements. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-6. Location Survey and Mapping Operations

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Location Survey and Mapping Operations** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Escort Land Surveyors to conduct activities. o Use appropriate geophysical instrument to ensure there are no anomalies where marking stakes or survey pins are to be driven by the survey team. o Drive marking stakes to mark gird corners and transects.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards.	o Personnel will be aware of areas they are to be working and observant to any obstacles, which may be a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Only UXO-qualified personnel will perform OE operations. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o In areas with poor visibility, the UXO escort will use a metal locator to clear pathways. o Observe all precautions for biological hazards. o Observe all precautions for heat/cold stress including monitoring and proper hydration. o Operators will wear all required PPE. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Each operator will receive proper training for each piece of equipment used and will maintain the equipment in good condition. o Personnel will wear PPE, at all times.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Schonstedt™ Model GA-52Cx magnetic locator. o Survey Equipment. o Grid-marking stakes and hammer. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o All equipment is to be inspected daily before use. o All equipment is to be calibrated in accordance with the manufacturer's instructions. o If equipment is not functioning properly or it is not in useable condition, it is to be turned in for repair/replacement. o The metal locator will undergo also a field calibration on a daily basis, where the operator, on a test bed, tests it to ensure continued functioning of the equipment in the field.	o Operators will be trained in the proper use and functions of the Survey and metal locators, and in required PPE. o All operators will be trained in performing field calibration tests of the metal locators. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-7. Operating Heavy Equipment (Brush Cutter)

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Operating Heavy Equipment (Brush Cutter)** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Inspect heavy equipment to ensure that it is functioning properly. o Have guide in clear view at all times (if required). o If required, when guide signals it is safe to start, begin brush-cutting operations. o When operations are complete, safely store equipment.	o Slips, trips, and fall hazards. o Biological hazards. o Heat/cold stress hazard. o Eye hazard. o Head hazard. o Cuts and abrasions hazard (from flying debris within the equipment throw area). o Crush and pinch point hazard. o Noise hazard. o Exhaust from equipment in the breathing zone of workers. o Handling flammable liquids during fueling.	o Personnel will be aware of areas to be worked in and observant of obstacles, which may present a trip hazard. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Ensure that heavy equipment is clear of any obstructions prior to starting. o Keep hands, fingers, and feet clear of moving parts. o Storage of gasoline or fuels will be in approved containers. o Personnel performing refueling operations will wear safety glasses and chemical-resistant gloves for protection against splashes and spills. o Gasoline-powered equipment will NOT be fueled while running, hot, or near open flames. o Gasoline-powered equipment will be taken to the fueling point for refueling. Equipment will not be started within 3 m (10 feet) of a fuel container. Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003. o All sources of ignition will be prohibited within 15 m (50 feet) of operations with a potential fire hazard. o Each operator will receive proper training in equipment use and will maintain the equipment in good condition. o PPE will be worn at all times, by personnel in and around the immediate vicinity of brush clearing operations.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Heavy Equipment (Brush Cutter). o Fuel-handling PPE: - Chemical-resistant gloves. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leather work boots w/ steel toes, - Hard hat (per ANSI Z89.1-1997), - Safety glasses (ANSI Z87.1-1989). - Hearing protection (NRR 29 dB). - Protective leg chaps (if required).	o Equipment will be inspected daily prior to use. o If, during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/replacement. o All safety guards designed on equipment will remain in place. o If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired/replaced.	o Operators will be trained in the safe use of required equipment and in the required PPE. o All personnel will receive training on the site-specific hazards to be encountered. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-8. Operating Portable Hand and Power Brush Cutting Equipment

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Operating Portable Hand and Power Brush Cutting Equipment** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Inspect portable hand and power equipment to ensure that it is functioning properly. o Have guide in clear view at all times (if required). o If required, when guide signals it is safe to start, begin brush-cutting operations. o When operations are complete, safely store equipment.	o Slips, trips, and fall hazards. o Biological hazards. o Heat/cold stress hazard. o Eye hazard. o Head hazard. o Cuts and abrasions hazard (From flying debris within the equipment throw area). o Noise hazard. o Exhaust from equipment in the breathing zone of workers. o Handling flammable liquids during fueling.	o Personnel will be aware of areas to be worked in and observant of obstacles, which may present a trip hazard. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Ensure that equipment is clear of any obstructions prior to starting. o Keep hands, fingers, and feet clear of moving parts. o Storage of gasoline or fuels will be in approved containers. o Personnel performing refueling operations will wear safety glasses and chemical-resistant gloves for protection against splashes and spills. o Gasoline-powered equipment will NOT be fueled while running, hot, or near open flames. o Gasoline-powered equipment will be taken to the fueling point for refueling. Equipment will not be started within 3 m (10 feet) of a fuel container. Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003. o All sources of ignition will be prohibited within 15 m (50 feet) of operations with a potential fire hazard. o Each operator will receive proper training in equipment use and will maintain the equipment in good condition. o PPE will be worn at all times, by personnel in and around the immediate vicinity of brush clearing operations.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Portable hand and power brush cutting equipment. o Fuel-handling PPE: - Chemical-resistant gloves. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leather work boots w/ steel toes, - Hard hat (per ANSI Z89.1-1997), - Safety glasses (ANSI Z87.1-1989). - Hearing protection (NRR 29 dB). - Protective leg chaps (if required).	o Equipment will be inspected daily prior to use. o If, during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/replacement. o All safety guards designed on equipment will remain in place. o If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired/replaced.	o Operators will be trained in the safe use of required equipment and in the required PPE. o All personnel will receive training on the site-specific hazards to be encountered. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-9. Perform a Geophysical Investigation and Evaluation

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Perform a Geophysical Investigation and Evaluation** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Utilizing geophysical and navigational instruments, capture all positional and instrument data digitally for analysis and evaluation. o Perform all data analysis as necessary to produce a geophysical map of the site.	o Slips, trips, and fall hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards.	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o UXO qualified escort will accompany geophysicist in UXO/OE contaminated areas that have not been previously cleared. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Each operator will receive proper training for each piece of equipment used and will maintain the equipment in good condition. o PPE will be worn at all times, by personnel operating equipment and in the immediate vicinity of operations.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Geophysical sensor instrumentation: - Geonics EM 61, Mark II - GTL TM-5 Magnetometer o Navigational Instruments - Lieica RTS (Robotic Total Station or - Trimble Centimeter Grade GPS. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles [American National Standards Institute (ANSI) Z87.1-1989].	o All equipment is to be inspected daily, by the operator, before use. o Equipment is to be calibrated, by the operator, in accordance with manufacturer's instructions. o If, during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/replacement. o Magnetometers will undergo a field calibration as required in the Work Plan to assure continued functioning of equipment, in the field.	o Equipment operators will be trained in the safe use of required equipment and in the required PPE. o All personnel will receive training on the site-specific hazards to be encountered. o All operators will be trained in performing field calibration tests of the metal locators. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-10. Perform Anomaly Reacquisition Operations

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Perform Anomaly Reacquisition Operations** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Utilize geophysical and navigational instruments to reacquire anomalies selected for data check and intrusive investigation. o Fiberglass pin flags or plastic cones will be used to mark anomaly locations.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards.	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Only UXO-qualified personnel will perform OE operations. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Operators will not place fiberglass pin flags into the ground directly over an anomaly. They shall be a short distance off to the side of each anomaly. o Operators will wear all required PPE. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o The following precautions shall be followed (Reference: CEHNC Safety Advisory 02-01) Never place an operating geophysical instrument, its electronics, data processor, or battery pack on the ground in an area suspected of containing unexploded ordnance (UXO) with electronic fuzing. o Do not use conductivity meters around trash piles or trenches that may contain UXO with electronic fuzing. o Ground Penetrating Radar (GPR) units shall not be used on sites suspected of containing UXO with electric fuzing.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Geophysical detection and navigation instrumentation. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o All equipment is to be inspected daily before use. o Equipment is to be calibrated in accordance with the manufacturer's instructions. o If equipment is not functioning properly or it is not in useable condition, it is to be turned in for repair/replacement. o The metal locator will also undergo a field calibration on a daily basis where the operator, on a test bed, tests it to ensure continued functioning of equipment in the field.	o Operators will be trained in the proper use and functions of the geophysical/tracking equipment and in required PPE. o All operators will be trained in performing field calibration tests of the metal locators. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-11. Gain access to selected subsurface anomalies utilizing mechanical Earth Moving Machinery (EEM)

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Gain access to selected subsurface anomalies utilizing mechanical Earth Moving Machinery (EMM)** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Inspect EMM to ensure that it is functioning properly and has no defects. o Ensure that all Personal Protective Equipment (PPE) is on hand and used. o When individual area for excavating is clear of all unnecessary personnel start excavation operation, carefully removing soil over anomaly. o When operations are complete, safely perform equipment maintenance and storage.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazard. o Eye hazard. o Head hazard. o Crush and pinch point hazard. o Noise hazard. o Exhaust from equipment in the breathing zone of workers. o Handling flammable liquids during fueling.	o Personnel will be aware of areas to be worked and observant of obstacles that present trip hazards. o Personnel will be trained to recognize UXO/OE hazards on-site. o Only UXO-qualified personnel will perform OE operations. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o EMM will not be used to excavate within 12-inches of suspected OE item. Once EMM is within 12-inches of the suspected OE item, excavation will be completed by hand excavation methods. o Excavation operations, weather by hand or EMM, will employ a step-down or offset access method. Under no circumstances will any excavation be made directly over suspected OE items. o Personnel will observe all precautions for biological hazards. o Personnel will observe precautions for heat/cold stress monitoring and proper hydration. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Ensure that EMM is clear of any obstructions prior to starting. o Keep hands, fingers, and feet clear of moving parts. o Storage of gasoline or fuels will be in approved containers. o Personnel used for refueling operations will wear PPE for protection against splashes and spills. o Gasoline-powered equipment will NOT be fueled while running, hot, or near open flames. o Gasoline-powered equipment will be taken to the fueling point for refueling. Equipment will not be started within 3 m (10 feet) of a fuel container. Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003. o All ignition sources are prohibited within 15 m (50 feet) of operations with a potential fire hazard. o Operators will receive training in equipment use and maintain the equipment in good condition. o PPE will be worn at all times around the immediate vicinity of brush clearing operations.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o EMM (Excavation equipment). o Chemical-resistant gloves. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leather work boots with steel toe guard and non-slip soles, - Hard hat (per ANSI Z89.1-1997), - Safety glasses (ANSI Z87.1-1989). - Hearing protection NRR 27db).	o Equipment will be inspected daily prior to use. o If, during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/replacement. o All safety guards designed on equipment will remain in place. o If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired/replaced.	o Operators will be trained in the safe use of required equipment and in the required PPE. o All personnel will receive training on the site-specific hazards to be encountered. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-12. Gain access to selected subsurface anomalies utilizing portable hand operated excavation equipment

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Gain access to selected subsurface anomalies utilizing portable hand operated excavation equipment** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Inspect heavy equipment to ensure that it is functioning properly. o Have guide in clear view at all times (if required). o If required, when guide signals it is safe to start, begin brush-cutting operations. o When operations are complete, safely store equipment.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazard. o Noise hazard. o Eye hazard. o Head hazard. o Cuts and abrasions hazard. o Crush and pinch point hazard. o Exhaust from equipment in the breathing zone of workers. o Handling flammable liquids during fueling.	o Personnel will be aware of areas to be worked in and observant of obstacles, which may present a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Only UXO-qualified personnel will perform OE operations. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o Excavation operations, weather by hand or EMM, will employ a step-down or offset access method. Under no circumstances will any excavation be made directly over suspected OE items. o Personnel will observe all precautions for biological hazards. o Personnel will observe precautions for heat/cold stress monitoring and proper hydration. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures. o Ensure that heavy equipment is clear of any obstructions prior to starting. o Keep hands, fingers, and feet clear of moving parts. o Storage of gasoline or fuels will be in approved containers. o Personnel used for refueling operations will wear PPE for protection against splashes and spills. o For gasoline-powered equipment, they will NOT be fueled while running, hot, or near open flames. o Gasoline-powered equipment will be taken to the fueling point for refueling. Equipment will not be started within 3 m (10 feet) of a fuel container. Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003. o All ignition sources are prohibited within 15 m (50 feet) of operations with a potential fire hazard. o Each operator will receive proper training in equipment use and will maintain the equipment in good condition. o PPE will be worn at all times around the immediate vicinity of brush clearing operations.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Portable Hand excavation equipment. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leather work boots with steel toe guard and non-slip soles, - Hard hat (per ANSI Z89.1-1997), - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o Equipment will be inspected daily prior to use. o If, during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/replacement. o All safety guards designed on equipment will remain in place. o If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired/replaced.	o Operators will be trained in the safe use of required equipment and in the required PPE. o All personnel will receive training on the site-specific hazards to be encountered. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-13. Perform Quality Control Activities

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Perform Quality Control Activities** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Using an appropriate geophysical instrument, perform QC activities. o Ensure that there are no surface and sub-surface UXO or UXO like items within completed grids. o Investigate discovered surface or sub-surface anomalies. o Report any anomalies meeting failure criteria to the SUXOS.	o Slips, trips, and fall hazards. o UXO/OE hazards. o Biological hazards. o Heat/cold stress hazards. o Eye hazards.	o Personnel will be aware of areas they are to be working in and observant of any obstacles, which may present a trip hazard. o Personnel will be trained to recognize UXO/OE hazards on-site. o Only UXO-qualified personnel will perform OE operations. o Upon locating any UXO or Hazardous OE, notify UXO-qualified personnel. o Personnel will observe all precautions for biological hazards. o Personnel will observe all precautions for heat/cold stress including monitoring and proper hydration. o Personnel will wear all required PPE. o Personnel will operate equipment in a manner consistent with the manufacturer's procedures.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Geophysical detection instrumentation - Schonstedt™ Model GA-52Cx magnetic locator. o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots with non-slip soles. - Safety glasses and/or safety goggles (ANSI Z87.1-1989).	o All equipment is to be inspected daily before use. o Equipment is to be calibrated in accordance with the manufacturer's instructions. o If equipment is not functioning properly or it is not in useable condition, it is to be turned in for repair/replacement. o The metal locator will undergo a field calibration on a daily basis where the operator, on a test bed, tests it to ensure continued functioning of equipment in the field.	o Operator will be trained in the proper use and functions of the geophysical/tracking equipment and in required PPE. o All operators will be trained in performing field calibration tests of the metal locators. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance.

Table D-14. Performing Motor Vehicle Operations

ACTIVITY HAZARD ANALYSIS

ACTIVITY **Performing Motor Vehicle Operations** **ANALYZED BY/DATE** Paul C. Duncan / March 12, 2004

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
o Inspect vehicles to ensure proper working condition. o Ensure that vehicles are properly equipped. o Explosive materials, when transported, will be loaded and secured to prevent shifting. o Conduct motor vehicle operations.	o Explosive hazards. o Heat stress. o Personnel struck by mobile equipment. o Vehicle collisions.	o Complete motor vehicle inspection form. o If the vehicle is not working properly, it will be turned back to the rental agent for repair/replacement. o All vehicle operators are required to have valid driver's license issued from his state of residence. o The driver and all passengers will use safety belts when the vehicle is in operation. o The vehicle will be placarded as carrying explosive materials, if required. o Operators will be familiar with, and comply with, requirements in this Work Plan. o Explosives, if transported, will be placed securely in the back of the pick-up truck and anchored firmly to prevent movement. o Any vehicle with explosive cargo will not be left unattended. o The driver will observe all posted speed limits. o The driver will ensure that telephone or radio contact is available in the vehicle. o A minimum of two personnel, in the vehicle, will be required to transport explosive materials. o Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENT	TRAINING REQUIREMENTS
o Vehicle. o Safety Equipment: - Seat belts, First Aid kits, Two-way communications, Emergency eyewash kit, Blood-borne pathogen (BBP) kit, One, 20 B:C, fire extinguishers (two for explosive materials), Haz-Mat Spill response kit. o Transporting Explosive Materials - Explosive placards, if required. - Roadside emergency markers. - Explosives storage boxes o Level D PPE: - Cotton clothing or coveralls. - Leather gloves. - Leatherwork boots. - Safety glasses (ANSI Z87.1-1989).	o Vehicle will be inspected daily, prior to use, utilizing DD Form 626 or ATI Form 025. o Any hazardous conditions noted during the inspection will be repaired prior to using the vehicle. o Inspection of the contents of the vehicle will ensure that emergency supplies and communication equipment are readily available. o If traveling to a remote location, the inspection of the vehicle will ensure that an adequate supply of drinking water and cups are available. o The driver will inspect the packing of explosive materials for transport to ensure segregation of the blasting caps from other explosive items and to ensure anchoring in place and explosives are in a secure position prior to transport.	o Any vehicle operator on this site is required to have a valid driver's license issued from his state of residence. o All personnel driving or riding as passengers in vehicles will be trained in fire extinguisher usage and will be trained not to attempt to fight any fire involving explosive materials. o Personnel will receive site-specific training for UXO/OE recognition anticipated at the site. o Personnel will observe all precautions for heat/cold stress monitoring. o All operators will have current OSHA HAZWOPER training. o Employees working on-site will receive medical clearance. o Personnel will receive training in small quantity spill containment cleanup and reporting procedures.

D.4.2 Safety Hazards

Due to the nature of planned site operations, the potential risk for exposure to safety hazards is high. Anticipated Safety hazards, which may be encountered during site activities and precautions, to be followed are listed below and in individual Activity Hazard Analyses.

D.4.2.1 Slips, Trips, and Fall Hazards

Site conditions consist of light to moderate terrain, light to moderate-heavy brush, which make the possibility of slips, trips, and fall hazards high during the UXO escort, establishing working grids, surface sweep, geophysical survey, and quality control activities. Site personnel shall be instructed to make themselves aware of the placement of their feet at all times to avoid site conditions, which attribute to slips, trips, and falls. The use of sturdy leatherwork boots with ankle support and non-slip soles will reduce the risk of slips, trips and falls.

D.4.2.2 Cuts/laceration hazard from handling sharp surfaces on OE scrap

OE scrap surfaces can be expected to have sharp and rusted surfaces. Project personnel should expect a high likelihood of cuts/lacerations if proper care is not taken. During all activities involving the handling of UXO, OE scrap, and site materials, personnel shall wear leatherwork gloves to prevent injury to hands.

D.4.2.3 Pinched/crushed fingers and toes from handling OE scrap

The weight of OE scrap expected to be recovered and handled during surface sweep and UXO/OE inspection activities is expected to pose only a light to moderate hazard to fingers and toes. The mishandling of even light materials can cause injuries to site personnel. All site personnel are required to wear leatherwork boots and gloves while activities are being conducted. Personnel shall utilize proper lifting techniques and when appropriate, shall use additional personnel or material handling equipment for heavy objects.

D.4.2.4 Inclement weather (high winds, fog, heavy rain, and thunder/lightning storm)

High winds and fog are only considered hazards if they impair personnel ability to conduct operations (i.e. fog and heavy rain, reduced visibility to see work area). Personnel will not continue operations if visibility is greatly affected. During heavy rain, personnel can be at risk due to flash floods, visibility, and stability. The UXOSO will make recommendations to the SUXOS to determine risk hazards. Thunder/lightning storms are a high-risk hazard to all site personnel especially during disposal operations. All blasting activities shall be suspended when an electrical storm approaches to within 10 miles of the site. Site personnel, in the open, are at great risk and shall be moved to safe sheltered locations until the storm has passed.

D.4.3 Chemical Hazards

The only anticipated chemical hazards, which would be expected during site activities are those fuels and oils brought on-site, for equipment maintenance. All site personnel will follow the procedures and precautions outlined in appropriate Task Hazard Analysis. Chemical Warfare Material (CWM) procedures are outlined in paragraph D.12.4.7.

D.4.4 Physical Hazards

For the planned site activities to be conducted, the potential for exposure to physical hazards is high for this project. The physical hazards that may be encountered during site operations and precautions to be taken are listed below.

D.4.4.1 Flammable/explosive hazards from fueling and maintenance of site vehicles

The chance of fire and/or explosion during vehicle refueling and maintenance is high when improper procedures are used. All site vehicles will be equipped with a portable fire extinguisher readily available to fight a fire. Equipment will never be refueled on the back of a pick-up truck with a bed liner. Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003.

D.4.4.2 Material lifting hazard (back strain, pulled muscles and tendons) from inspecting and moving OE scrap

The lifting and handling of UXO and OE scrap can have a high probability of causing back strain, pulled muscles and tendons. Personnel will utilize proper lifting techniques when moving site materials. When required for heavier items to move, additional personnel or material handling equipment shall be used.

D.4.4.3 Noise hazard from excessive noise levels from the operation of heavy equipment, powered hand tools and demolition operations.

The operation of heavy equipment, powered hand tools and demolition operations may create a noise hazard to site personnel. Site personnel working with or near powered hand tools will wear hearing protection.

D.4.5 Radiological Hazards

In accordance with previous activities performed at the project a radiological hazard is not anticipated within the project area.

D.4.6 Biological Hazards

Biological hazards, which are usually found on-site, include insects, such as mosquitoes, spiders, bees, and centipedes; dangerous animals; hazardous plants; and microorganisms. Employee awareness and adherence to the safe work

practices outlined in the following sections should reduce the risks associated with these hazards.

D.4.6.1 Hazardous Plants

During the conduct of site activities, the number and variety of hazardous plants that may be encountered are few. The plants with the greatest degree of risk, to site personnel (i.e., potential for contact versus effect produced), are those, which produce skin reactions and skin and tissue injury.

D.4.6.1.1 Plants Causing Skin and Tissue Injury

Contact with splinters, thorns, and sharp leaf edges is of special concern to site personnel, as is the contact with the pointed surfaces found on branches, limbs, and small trunks left by site clearing and grubbing crews. This concern stems from the fact that punctures, cuts, and even minor scrapes caused by accidental contact may result in non-infectious skin lesions and the introduction of fungi, or bacteria, through the skin or eye. Personnel receiving any of the injuries listed above, even minor scrapes, will report immediately to the UXOSO for initial and continued observation and care of the injury.

D.4.6.1.2 Plants Causing Skin Reaction

D.4.6.1.2.1 The poisonous plants of greatest concern are poison ivy and poison oak. Related information includes:

- Poison ivy (Figures D-2 and D-3) thrives in all types of light and usually grows in the form of a trailing vine; however, it can also grow as a bush and can attain heights of 10 feet or more. Poison ivy has shiny, pointed leaves that grow in clusters of three.

- Poison oak (Figures D-4 and D-5) is mostly found in the southeast and west. Poison oak resembles poison ivy, with one important difference, which is that the poison oak leaves are more rounded, rather than jagged like poison ivy, and the undersides of poison oak leaves are covered with hair.

D.4.6.1.2.2 The skin reaction associated with contacting these plants is caused by the body's allergic reaction to toxins contained in oils produced by the plant. Becoming contaminated with the oils does not require contact with just the leaves.

D.4.6.1.2.3 Contamination can be achieved through contact with other parts of the plant, such as the branches, stems or berries, or contact with contaminated items, such as tools and clothing.

Figure D-2 Poison Ivy Leaf Structure

Figure D-3 Poison Ivy

Figure D-4 Poison Oak leaf structure

Figure D-5 Poison Oak

D.4.6.1.2.4 The allergic reaction associated with exposure to these plants will generally cause the following signs and symptoms:

- Blistering at the site of contact, usually occurring within 12 to 48 hours after contact.
- Reddening, swelling, itching, and burning at the site of contact.
- Pain, if the reaction is severe.
- Conjunctivitis, asthma, and other allergic reactions if the person is extremely sensitive to the poisonous plant toxin.

D.4.6.1.2.5 If the rash is scratched, secondary infections can occur. The rash usually disappears in 1 to 2 weeks in cases of mild exposure and up to 3 weeks when

exposure is severe. Preventive measures that can prove effective for most site personnel are:

- Avoid contact with any poisonous plants on-site, and keep a steady watch to identify, report, and mark poisonous plants found on-site.
- Wash hands, face, or other exposed areas at the beginning of each break period and at the end of each workday.
- Avoid contact with, and wash on a daily basis, contaminated tools, equipment, and clothing.
- Barrier creams, detoxification/wash solutions, and orally administered desensitization may prove effective and should be tried to find the best preventive solution.
- Keeping the skin covered as much as possible (i.e., long pants and long-sleeved shirts) in areas where these plants are known to exist will limit much of the potential exposure.

D.4.6.2 Snakes

When site activities are conducted in warm weather on sites that are located in wooded, grassy or rocky environments and the potential for contact with poisonous snakes becomes a very real danger. Normally, if a person is approaching a snake, the noise created by the person is usually sufficient to frighten the snake off. However, during the warm months, extreme caution must be exercised when conducting site operations around areas where snakes might be found (i.e. rocks, bushes, logs, or in holes, crevices, and abandoned pipes). There are four categories of venomous snakes (Table D-15), which could be expected at this site:

- The Coral snake
- The Copperhead
- The Cottonmouth
- The Rattlesnakes (Western Diamondback, Massasauga, and Timber Rattlesnakes)

D.4.6.2.1 Precautions for Snakes

If poisonous snakes are identified on-site, ATI will issue protective clothing, such as snake leggings, to site personnel. The rules to follow if a snake bites someone are:

- DO NOT cut "Xs" over the bite area, as this will intensify the effect of the venom.
- DO NOT apply suction to the wound since this has a minimal effective in removing venom.
- DO NOT apply a tourniquet since this will concentrate the venom and increase the amount of tissue damage in the immediate area.
- Try to get a good look at the snake so it can be identified for proper selection of anti-venom.
- DO NOT allow the victim to run for help since running increases the heart rate and will increase the spread of the venom throughout the body.
- Keep the victim calm and immobile.
- Wash the wound and immobilize the injured area and call 9-1-1 or the workplace emergency number.
- Have the victim hold the affected extremity lower than the heart while waiting for medical assistance.
- Transport the victim to medical attention immediately.

Table D-15. Venomous Snakes

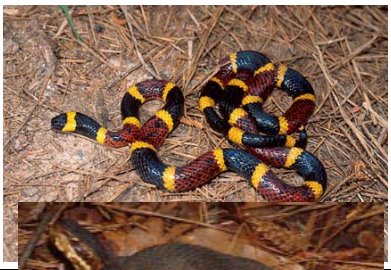
Coral Snake		Coral snakes are members of a group of snakes called Elapids. Their venom is neurotoxic, which means it attacks the nervous system. The Texas Coral Snake is the only member of the Elapids that is found in Texas and can easily be identified by the red, yellow and black color bands along the snake's body. The Texas Coral Snake is the only snake in Texas with touching red and yellow bands.
Cottonmouth (Water moccasin)		The cottonmouth, or water moccasin, rarely strays far from water and can be found in marshes, swamps, ponds, lakes, ditches, and canals in East and Central Texas and along the Gulf coast. It is a stubby, muscular snake and can grow to nearly six feet. Moccasins can bite underwater. These snakes can be very defensive and sometimes aggressive.
Copperhead		With their bands of gray and/or brown, the four subspecies of Texas copperheads are colored to blend in with leaf-covered forest floors. Because they are so well camouflaged, most bites occur when a snake is accidentally picked up or sat or laid on. Always use care when picking up or flipping over logs, boards, old tin or other items where copperheads may be resting.

Table D-15. Venomous Snakes (continued)

Western Diamondback Rattlesnake		A member of the pit viper family, the venomous, six- to eight-foot-long diamondback is one of the world's most dangerous snakes. The distinctive diamond pattern running the length of the snake's body serves as camouflage. Diamondbacks can be found in desert, grassland, woodland, and river bottom habitats.
Massasauga Rattlesnake		Massasaugas are stout bodied snakes with a triangular shaped head. There is a row of black or dark brown mid-dorsal blotches on a lighter brown or gray background. There are two or three rows of small spots on the sides. This snake may be quite difficult to distinguish from the harmless fox and water snakes. This is a small rattlesnake that measures 17 – 39 ½ inches in length.
Timber Rattlesnake		Timber Rattlesnakes are heavy-bodied pit vipers with a prominent rattle at the end of the tail. A rattler with dark bands and a black tail. Southern snakes have a reddish or rusty back stripe.

D.4.6.3 Spiders

D.4.6.3.1 A large variety of spiders may be encountered during site activities. While most spider bites merely cause localized pain, swelling, reddening, and in some cases, tissue damage, there are a few spiders, which, due to the severity of the physiological effects caused by their venom, are dangerous. These species include the black widow and the brown or violin spiders. Table D-16 provides descriptions of these spiders.

D.4.6.3.2 Victims of a black widow bite may exhibit the following signs or symptoms:

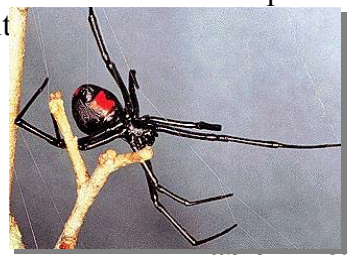
- The sensation of a pin prick or minor burning at the time of the bite;
- The appearance of small punctures (but sometimes none are visible); and
- After 15 to 60 minutes, intense pain is felt at the site of the bite, which spreads quickly, and is followed by profuse sweating, rigid abdominal muscles, muscle spasms, breathing difficulty, slurred speech, poor coordination, dilated pupils, and generalized swelling of the face and extremities

D.4.6.3.3 Victims of a brown, or violin, spider bite may exhibit the following signs or symptoms:

- Blistering at the site of the bite, followed by a local burning at the site 30 to 60 minutes after the bite.
- Formation of a large, red, swollen, pustulating lesion with a bull's-eye appearance.
- Systemic effects may include a generalized rash, joint pain, chills, fever, nausea, and vomiting.
- Pain may become severe after 8 hours, with the onset of tissue necrosis.

D.4.6.3.4 There is no effective first aid treatment for either of these bites. Except for very young, very old or weak victims, these spider bites are not considered to be life threatening; however, medical treatment must be sought immediately to reduce the extent of damage caused by the injected toxins.

D.4.6.3.5 The UXOSO will brief site personnel as to the identification and avoidance of the spiders. As with stinging insects, site personnel will report to the UXOSO if they locate either of these spiders on-site or notice any type of bite while involved in sit



Dangerous Spiders

Black Widow		The black widow, is a coal-black bulbous spider 3/4 to 1 1/2 inches in length, with a bright red hourglass on the under side of the abdomen. The black widow is usually found in dark moist locations, especially under rocks, rotting logs and may even be found in outdoor toilets where they inhabit the underside of the seat. Victims of a black widow bite may exhibit the following signs or symptoms: Sensation of pinprick or minor burning at the time of the bite. Appearance of small punctures (but sometimes none are visible). After 15 to 60 minutes, intense pain is felt at the site of the bite which spreads quickly, and is followed by profuse sweating, rigid abdominal muscles, muscle spasms, breathing difficulty, slurred speech, poor coordination, dilated pupils and generalized swelling of face and extremities

Table D-16. Dangerous Spiders (continued)

Brown Recluse	 	The brown or violin spider is brownish to tan in color, rather flat, 1/2 to 5/8 inches long with a dark brown "violin" shape on the top. Of the brown spider, there are three varieties found in the United States that present a problem to site personnel. These are the brown recluse, the desert violin and the Arizona violin.

D.4.6.4 Bees and Wasps

There are several types of bees and wasps, which may be encountered during site activities. These include the Southern Yellow Jacket, Common Yellow Jacket, Paper Wasps, Honey and Carpenter bees. Bees are generally not as aggressive as wasps and hornets. Most stinging insects are relatively safe to be near, even in large numbers, so long as they are not aggravated. However, dozens of people a year die from insect stings, mostly due to anaphylactic shock, some as a direct result of the toxins. However, bee venom appears to contain more proteins than wasp venom and therefore there is a greater likelihood of being allergic to bees than wasps! The sting of bees and wasps are quite different. The wasp may sting a victim multiple times and still live. The bee will sting once, tearing itself away leaving the sting still connected to the venom sac, which continues to pump venom into the victim for up to a minute from the time of insertion.

D.4.6.4.1 Prevention of Bee and Wasp Stings

The following precautions will be taken during field activities for the prevention of stings from bees and wasps:

- Be aware of the presence of bees and wasps while you are working especially in the vicinity of flowers. Bees tend to sting if they feel threatened or are disturbed, so use caution.
- Avoid wearing floral patterns or using floral scents, which will attract bees.
- Personnel that are sensitive to bees must make the UXOSO aware of this and should carry a bee sting kit with them.

- If bees or wasps get trapped inside your vehicle while you are driving, pull of the shoulder and let the creature escape before you continue driving.

- Only strike a wasp if you are sure to kill it. If you strike or kill a bee you will set off its defense pheromone, which will bring unhappy relatives calling.

- In the event of a massed sting attack, try to stay calm, cover your head if possible, and run steadily to safety. Get into anything that is sealed in such a way as not to allow insect entry, such as a vehicle.

D.4.6.4.2 Treatment of normal insect stings

- All bee stings include an alarm pheromone, which incites their mates to attack, so step one is to get away from a nest/hive with all speed.

- Scrape/pull out stings as soon as possible. A honeybee sting has a pump attached that continues to introduce venom for 1 minute after stinging. A wasp does not leave its stinger.

- Apply an ice pack to minimize swelling and pain.

- Lift limb to heart level to reduce swelling.

D.4.6.4.3 Treatment of severe reaction to insect stings

D.4.6.4.3.1 If the victim has been stung multiple times, is young or old, or is one of the 1% that is super-sensitive to stings, watch for signs of systemic allergies. These may include:

- Headaches,

- Fever,

- Nausea,

- Vomiting,

- Swelling of the tongue or throat,

- Difficulty in breathing,

- Cramps,

- Drowsiness or

- Unconsciousness.

GET MEDICAL HELP

D.4.6.4.3.2 Personnel with known sensitivity to stings and who have Epinephrine kit should have it administered, followed by an ice pack and hospital. Employees on the site who know they are allergic to bee stings should make the UXOSO and co-workers aware of that fact, and should have their Epinephrine kit with them at all times. Co-workers should know where the kit is located and how to administer it in an emergency. Bee stings can be sensitizers and allergies can develop over time. Because a person has been stung in the past and has had no reaction, does not necessarily mean that the next sting won't bring on an allergic reaction. All employees will be made aware of the symptoms of anaphylactic shock, so that they can recognize it in themselves and co-workers and act accordingly.

D.4.6.5 **Tick Borne Illnesses**

Although ticks are commonly thought of as insects, they are actually arachnids like scorpions, spiders and mites. Ticks are parasites that feed by latching on to an animal host, imbedding their mouthparts into the host's skin and sucking its blood. This method of feeding makes ticks the perfect vectors (organisms that harbor and transmit disease) for a variety of pathogenic agents. They are divided into two groups - hard bodied and soft bodied - both of which are capable of transmitting diseases in the United States. Ticks are responsible for at least 9 different **known** diseases in humans in the U.S., including Lyme disease, Rocky Mountain spotted fever, babesiosis, and more recently, ehrlichiosis. These ticks are found in wooded areas along trails, paths, and roadways.

D.4.6.5.1 **Lyme Disease**

D.4.6.5.1.1 General Information

Lyme disease is a bacterial disease transmitted by infected ticks. Deer ticks and the Lone star tick infected with the bacteria that cause Lyme disease have been found in Illinois. Areas in the United States where deer ticks are most frequently infected with Lyme disease are the northeastern United States (from Massachusetts to Maryland), northern California, and north central states, especially Minnesota and Wisconsin. Descriptions of these infectious ticks are contained in Table D-17.

D.4.6.5.1.2 Signs and Symptoms

1) Some people are not diagnosed with Lyme disease in its initial stages because early symptoms are similar to those of more common diseases, such as influenza or mononucleosis, and many infected persons do not recall a tick bite. Weeks to months or years later other symptoms can develop if the disease is not diagnosed and treated. These include symptoms of meningitis, certain heart irregularities, blindness, memory loss, temporary paralysis of certain facial muscles, pain with numbness or weakness of an arm or leg, and, most commonly, arthritis.

2) However, since it is impossible to tell by sight which ticks are infected, it is important to avoid tick bites whenever possible. Immature ticks can be very small, about the size of the head of a pin; adult ticks are slightly larger. Both can be infected with and transmit Lyme disease. Ticks acquire the bacteria by feeding primarily on small mammals

infected with the bacteria, particularly the white-footed mouse. (Domestic animals can become infected with the Lyme disease bacteria and some may develop arthritis, e.g., dogs, cattle and horses.)

3) Signs and symptoms can vary greatly from one person to another. Symptoms also vary with the length of time a person has been infected. A ring-like red rash occurs in about 60 percent of cases and begins three days to 32 days after the bite of an infected tick. The red rash at the bite site is circular and grows larger over a few days or a few weeks. In the center, the rash usually clears and has been described as resembling a bull's-eye. Generally, the rash is warm to the touch, but not painful. Often this rash is accompanied by one or more nonspecific symptoms: fatigue, chills and fever, headache, swollen lymph nodes, and joint and muscle pain. An allergic reaction to tick saliva can often occur at the site of the tick bite. Such allergic reactions, which are not a sign of Lyme disease, usually occur within hours to a few days after the tick bite, usually do not expand like the Lyme rash and disappear within a few days.

D.4.6.5.1.3 Treatment

If you experience a rash that looks like a bull's-eye, or a rash anywhere on the body or an unexplained illness accompanied by fever following a tick bite, you should consult your physician and explain that a tick bit you. Disease carried by ticks can be treated with antibiotics. However, the type of antibiotic can vary and individuals should be treated early in the infection.

D.4.6.5.2 **Rocky Mountain spotted fever**

D.4.6.5.2.1 General Information

Rocky Mountain spotted fever is an acute infectious disease transmitted to humans by the bite of an infected tick. The disease occurs throughout the United States during months when ground temperatures reach 40 degrees Fahrenheit or more and ticks are active. Rocky Mountain spotted fever is spread by the bite of an infected tick (the **American dog tick or the Lone-star tick**) or by contamination of the skin with tick blood or feces. Person-to- person transmission does not occur. Descriptions of these infectious ticks are contained in Table D-17.

D.4.6.5.2.2 Signs and Symptoms

Rocky Mountain spotted fever is characterized by a sudden onset of moderate to high fever (which can last for two or three weeks), severe headache, fatigue, deep muscle pain, chills and rash. The rash begins on the legs or arms, may include the soles of the feet or palms of the hands and may spread rapidly to the trunk or the rest of the body. Not every case of Rocky Mountain spotted fever will have the rash. Symptoms usually appear between three and 14 days after the bite of an infected tick.

D.4.6.5.2.3 Treatment

If you experience a rash that looks like a bull's-eye, or a rash anywhere on the body or an unexplained illness accompanied by fever following a tick bite, you should consult your physician and explain that a tick bit you. Disease carried by ticks can be treated with antibiotics.

However, the type of antibiotic can vary and individuals should be treated early in the infection. Diagnosis of Rocky Mountain spotted fever is based largely on the patient's signs and symptom's of illness. Blood tests are important in confirming a diagnosis, but treatment should begin promptly if symptoms and exposure history support this diagnosis.

D.4.6.5.3 Tick borne Illnesses Precautions

The best way to protect you against these other tick borne illnesses is to avoid tick bites. This includes avoiding tick-infested areas. However, if you live in or visit wooded areas or areas with tall grass and weeds, follow these precautions against tick borne diseases:

1. Walk in the center of trails so weeds do not brush against you.

2. Check yourself every two to three hours for ticks. Most ticks seldom attach quickly and rarely transmit tick borne disease until they have been attached for four or more hours.

3. Wear white or light-colored long-sleeved shirts and long pants so the tiny ticks are easier to see.

4. Tuck long pants into your socks and boots. Tape the area where pants and socks meet so ticks cannot crawl under clothing.

5. Wear a head covering or hat for added protection.

6. Apply insect repellants to body and clothing.

    - For those who may not tolerate wearing all of these clothes in hot, muggy weather, apply insect repellent containing DEET (30 percent or less) to exposed skin (except the face). Be sure to wash treated skin after coming indoors.

    - Use repellents containing permethrin to treat clothes (especially pants, socks and shoes)—but not skin. Always follow label directions; do not misuse or overuse repellents. Always supervise children in the use of repellents.

D.4.6.5.4 Tick Removal Procedures

1. Remove any tick promptly. Do not burn the tick with a match or cover it with petroleum jelly.

2. Do not use bare hands. The mouthparts of a tick are shaped like tiny barbs and may remain embedded and lead to infection at the bite site if not removed properly. The best way to remove a tick is to grasp it with tweezers as close to the skin as possible and gently, but firmly, pull it straight out.

3. Do not twist or jerk the tick. If tweezers are not available, grasp the tick with a piece of tissue or cloth or whatever can be used as a barrier between your fingers and the tick. If the mouthparts do break off, consult your physician about removing them.

4. You may want to put the tick in a jar of rubbing alcohol labeled with the date and location of the bite in case you seek medical attention and your physician wishes to have the tick identified.

5. Wash the bite area and your hands thoroughly with soap and water, and apply an antiseptic to the bite site.

Table D-17. Infectious Tick Descriptions

Deer Tick ***(Ixodes scapularis)***	 Female  Male	The deer (or black-legged) tick in the East and the related western-blacklegged tick are the primary (and possibly the only) **known** transmitters of true Lyme disease in the United States. The deer tick has been found sporadically in many Illinois counties. Adults are reddish-brown and about 1/8-inch long (or about one-half the size of the more familiar female American dog tick). All three active stages will feed on people. The larvae and nymphs are active in the spring and early summer; adults may be active in both the spring and fall. Peak activity for adult deer ticks occurs in late October and early November. The blacklegged / deer tick can transmit **Lyme disease** and possibly ehrlichiosis to humans.
Lone-star Tick ***(Amblyomma americanum)***	 	The lone star tick is primarily found in the southern half of Illinois, although it can occasionally be found further north. This tick species can transmit ehrlichiosis, **Lyme Disease, Rocky Mountain spotted fever**, and tularemia. Although it can transmit Rocky Mountain spotted fever, the lone star tick is not as likely to transmit the disease as the American dog tick. The larva is very tiny, only a little larger than the period at the end of this sentence. The nymph, the most common stage found on people, is about pinhead-sized. Adults are about 1/8-inch long and brown. The adult female has a white spot in the middle of her back. Larvae, nymphs and adults will feed on a variety of warm-blooded hosts, including people. The lone star tick is most active from April through the end of July.
American Dog Tick ***(Dermacentor variabilis)***		The American Dog Tick is the largest of the eastern wood ticks, and the one you are most likely to see. Like all ticks, the American dog tick goes through an egg, larva, nymph, and adult stage during its development. The American Dog Tick is reddish-brown with white or yellow markings. The male tick is about 1/8 inch long, and the female is slightly larger. She will get much bigger (about 1/2 inch), though, after she drinks her fill of blood. The adult American dog tick will feed on humans and is a known vector of **Rocky Mountain spotted fever**. In Illinois, the adults are most active in April, May and June. By September, the adults are inactive and are rarely observed.

D.5 Employee Training

D.5.1 General Information

Prior to commencement of site activities, the Safety Manager and the UXOSO will ensure that all ATI employees and contractor/subcontractor personnel who are actually engaged in UXO/OE operations are informed of all site hazards. This information will be in the nature and degree of exposure to chemical and physical hazards, which are likely to result from participation in site operations. ATI will accomplish this by ensuring that all personnel entering the site have received the appropriate OSHA and site-specific training, as outlined in this section, prior to participation in site activities.

D.5.2 Hazardous Waste Workers Training

D.5.2.1 40-Hour General Site Workers Training

D.5.2.1.1 All ATI employees and subcontractors involved in UXO/OE site activities must have received a minimum of 40 hours of hazardous, toxic, and radiological waste (HTRW) health and safety instruction off-site in accordance with 29 *CFR* 1910.120(e). In addition, site workers will have received a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor.

D.5.2.1.2 Current training of all employees on the site will be verified prior to mobilization. This level of training also is required for all site visitors who enter a potentially hazardous work area where respirators or other PPE are required to protect entrants from known or potential overexposures.

D.5.2.2 8-Hour Refresher Training

Employees, managers, and supervisors will receive eight hours of refresher training annually on the items specified in 29 *CFR* 1910.120(e), any critique of incidents that have occurred in the past year that can serve as training examples of related work, and other relevant topics.

D.5.2.3 Management and Supervisor Training

D.5.2.3.1 On-site management and supervisors directly responsible for, or who supervise, employees engaged in hazardous waste operations will have received 40 hours initial and 3 days of supervised field experience, and at least 8 additional hours of specialized training at the time of job assignment.

D.5.2.3.2 This additional training includes a review of the CSHP, management of UXO/OE cleanup operations, management of site work zones, communication with the public and the media, PPE selection and limitations, spill containment, and monitoring site hazards. The safety and health staff, with specific responsibilities

for safety and health guidance on-site will receive the training provided to general site workers and their supervisors. They also receive additional training in safety and health issues, policies, and techniques.

D.5.3 Site-Specific Training

In order to fulfill the site information training requirements of 29 *CFR* 1910.120(b)(1)(iv) and 29 *CFR* 1910.120(e)(1), all ATI employees, contractors, subcontractors, and visitors will attend site-specific training sessions. These training sessions will apply to individual jobs and responsibilities, and provide an overview of the site hazards and the means to control those hazards.

D.5.3.1 General Site-Specific Training

D.5.3.1.1 This training will be conducted by the Safety Manager and/or the UXOSO and will include classroom instruction.

D.5.3.1.2 Training may address the following subject areas, depending upon individual jobs: details of the SSHP; employee rights and responsibilities; safe work practices; nature and extent of anticipated chemical and physical hazards; measures and procedures for controlling site hazards; handling emergencies and accidents; rules and regulations for vehicle use; safe use of field equipment; handling, storage, and transportation of hazardous materials; use, care, and limitations of PPE, to include proper donning, doffing, cleaning, and storage; and hazard communication.

D.5.3.2 UXO/OE Training

D.5.3.2.1 All UXO personnel assigned to positions as UXO Technician I, UXO Technician II, UXO Technician III, UXO Safety Officer, UXOQCS, and SUXOS, will meet the qualification requirements detailed in USACE-OE-CX, DID OE-025.01. A copy of their certificates of graduation will be kept on file at corporate headquarters and on-site. UXO qualified personnel will have knowledge and experience in military ordnance, ordnance components, and explosives location, identification, render safe recovery/removal, transportation, and disposal safety precautions. UXO personnel will have the knowledge and experience to effect safe handling and transportation of found ordnance items.

D.5.3.2.2 Non-UXO qualified personnel working or visiting the UXO/OE sites will receive a site-specific UXO/OE recognition briefing from the UXOSO. This site-specific training will be used to familiarize non-UXO-qualified personnel with the appearance of ordnance type items that may be found on site. Non-UXO-qualified personnel will not touch any ordnance-related items unless they have been inspected first by UXO-qualified personnel and determined to be ordnance related scrap or inert ordnance.

D.5.3.3 Personal Protective Equipment Training

PPE training is covered under Appendix D.6 of the Work Plan.

D.5.3.4 First Aid/CPR Training

Two ATI personnel certified in first aid/CPR will be on-site to provide immediate response to an accident situation until medical assistance arrives on the site. Daily, during the Tailgate Safety Briefing, the names of these individuals will be briefed to employees.

D.5.3.5 Ongoing Training

Ongoing training will be conducted for employees during work activities. This ongoing training will consist of briefings and periodic site training, as necessary, to provide a safe work environment for workers.

D.5.3.6 Daily Tailgate Safety Briefing

D.5.3.6.1 Tailgate safety briefings consist of providing short training sessions in various subjects that give the site worker knowledge and confidence in performing duties in a potentially hazardous environment. The tailgate safety briefing will be given prior to commencing work each day and will include such items as:

- Expected weather conditions,
- General site hazards,
- UXO hazards,
- PPE required at each site,
- Emergency evacuation procedures,
- Cold/heat stress precautions,
- Buddy system procedures, and
- A review of any safety violations from the previous day

D.5.3.6.2 Additional briefings will be provided, as needed, concerning the use of safety equipment, emergency medical procedures, emergency assistance notification procedures, accident prevention, the Work Plan, and site orientation to ensure that accomplishment of the project can be carried out in a safe and effective manner.

D.5.3.7 Daily Debriefing

At the conclusion of each workday, a debrief, for all employees, will be held, if appropriate, and the day's work will be discussed to determine if changes are warranted before commencing the next day's activities.

D.5.3.8 Periodic Site Training

On the first day of each work week/period, or more frequently if needed, a pertinent topic will be selected and elaborated upon by the UXOSO during the tailgate safety briefing. These safety meetings will help ensure the safety and health of site personnel in the performance of regular work activities and in emergency situations. Safety meetings will be documented in the appropriate log, and the "Documentation of Training Form"(see Appendix F, page F-19) will be completed.

D.5.3.9 Visitor Training

All visitors to the site, even if escorted, must receive, as a minimum, a briefing on site conditions, hazards, and emergency response procedures. Visitors will not be permitted in the restricted work areas unless they have the appropriate level of OSHA training. Visitors not complying with the above requirements will not enter the restricted work areas. They may observe site conditions from a safe distance. All visitors will make appropriate entries in the Visitor's Log.

D.5.3.10 Documentation

A training record will be kept in each employee's individual file to confirm that adequate training for assigned tasks are provided and that training is current. In addition, "Documentation of Training" forms will be completed and kept on file at the work site. See Appendix F, Page F-19.

D.6 Personnel Protective Equipment (PPE)

D.6.1 PPE Selection

Whenever engineering controls or other protective measures are not feasible or adequate to reduce exposures and safeguard the worker, the Safety Manager will select appropriate PPE. PPE will be selected on the basis of hazards known or suspected at the work site, and the level of PPE will not be reduced until adequate documentation can demonstrate that the hazard level has been reduced enough to warrant such adjustment.

D.6.2 Selection of PPE

D.6.2.1 Each task outlined in the SOW will be assessed in the Hazard Analysis prior to its initiation to determine the risk of personnel exposure to safety and health hazards, which may be encountered during its conduct. The hazard assessment will be based on available information pertaining to the historical use of the site, site contaminant characterization data, and the anticipated operational hazards. This information will be provided by the client or collected by ATI site personnel. The PPE assigned as a result of the hazard assessment represents the minimum PPE to be used during initial site activities.

D.6.2.2 Since hazard/risk assessment is a continuing process changes in the initial types and levels of PPE will be made in accordance with information obtained from the actual implementation of site operations and data derived from the site monitoring. As a general rule, the levels of PPE will need to be reassessed if any of the following occur:

- Commencement of a new work phase, such as the start of work on a different portion of the site, or different types of work due to a change in the SOW.
- Change in job tasks during a work phase.
- Change of season/weather.
- When temperature extremes or individual medical considerations limit the safe use of PPE.
- Unanticipated contaminants are encountered.
- Change in expected levels of contaminants.
- Change in work scope, which affects the degree of contact with contaminants.

D.6.2.3 If work tasks are added, or amended, after completion and approval of the SSHP, the UXOSO will conduct the task hazard assessment and consult with the Safety Manager. The level and type of PPE to be used will be identified and the

UXOSO will complete the "Certificate of Task Hazard Assessment" form. The ATI Safety Office will allow any changes in PPE, which involve downgrading the level of PPE, only after review.

D.6.3 Selection Criteria

The ATI Safety Office performs PPE selection after consultation with the UXOSO. During the selection of PPE, the Safety Manager and UXOSO will utilize general chemical resistance information, the manufacturer's permeation and breakthrough specifications, and the anticipated chemical and physical hazards to select the level and types of PPE to be used for each task. Once the specific types of PPE have been selected for each task, the UXOSO and Safety Manager will ensure that the items purchased will properly fit each employee designated to wear PPE. The following factors also will be considered:

- Limitations of the equipment.
- Work mission duration.
- Temperature extremes.
- Material flexibility.
- Durability/integrity of the equipment.
- Selection of respiratory protection, if required at a later time, will be conducted in accordance with the Respiratory Protection Program

D.6.4 Level D PPE

Due to the type of work that will be taking place during the conventional OE Removal activities at the Former Five Points Naval Air Station OLF project site, Level D is recommended. This level of PPE will not be allowed in areas of the site where atmospheric hazards are known or expected to exist. Level D should also be worn only if the activity in which personnel are engaged does not have the potential for splash, immersion or any other contact with hazardous substances. Level D involves the use of the following PPE:

- Work clothes or coveralls (cotton).
- Leatherwork gloves.
- Leatherwork boots.
- Hardhat (when working around heavy equipment, clearing and grubbing equipment, or overhead hazards).

- Eyewear providing protection against ultraviolet light and glare will be provided for protection if working around bodies of water.

- Safety goggles (when working in high winds, dusty environments, or when directed to by UXO Supervisors or the UXOSO).

- Hearing protection (when working in a noise hazard area).

- Leg chaps (when working with portable hand brush clearing and grubbing operations).

- Face shield (when working with clearing and grubbing operations).

D.6.5 Inclement Weather PPE

Other than working in cold weather, severe weather conditions are not anticipated during activities to be conducted under the SOW. ATI will ensure that employees take appropriate precautions to protect themselves from inclement weather. When there are warnings or indications of impending severe weather (heavy rains, damaging winds, tornadoes, floods, etc.), weather conditions will be monitored and appropriate precautions taken to protect personnel and property from the effects of the severe weather. Evacuation will take place if an electrical storm is within 10 miles of the project site.

D.6.6 PPE Use and Limitations

Whenever feasible, engineering controls and work practices, or a combination thereof, will be utilized to maintain personal exposures to hazardous substances below established exposure limits and to protect site workers from other safety and health hazards. The exposure limits used by ATI will be the Threshold Limit Values (TLV) recommended by the American Conference of governmental Industrial Hygienists (ACGIH). Other recognized published exposure levels, such as those found on MSDSs, will be used if OSHA does not regulate the substance. ATI will not utilize a system of employee rotation as a means of complying with the permissible exposure limit (PEL), TLV, or other published limits. Compliance will be maintained through engineering controls, wherever possible, and if the hazard cannot be engineered out of the work area, PPE and safe work practices will be used to prevent exposures in excess of the PELs.

D.6.7 Work Mission Duration

ATI anticipates the Former Five Points OLF OE removal activities to be accomplished during two separate mobilizations of six weeks each. UXO personnel involved in performing UXO field operations shall be limited to a 40-hour workweek. The workweek, for activities, on the project will consist of four, 10-hour days. Two consecutive workweeks shall be separated by at least 48-

hours of rest. Once PPE is selected, the safe duration of work/rest periods will be determined based on the:

- Anticipated work rate,
- Ambient temperature and other environmental factors,
- Type of protective ensemble, and
- Individual worker characteristics and fitness.

D.6.8 PPE Maintenance and Storage

The UXOSO will be responsible for ensuring that PPE is in good, clean, working order prior to issuing the PPE the first time. Once issued, site personnel will be responsible for the inspection and maintenance of re-usable articles of PPE. Site personnel will ensure that re-usable articles of PPE are maintained in a clean and sanitary fashion.

D.6.8.1 Maintenance

Maintenance of PPE can vary greatly, based upon the complexity of the PPE and the intricacy of the repair involved. The UXOSO will become familiar with the manufacturer‘s recommended maintenance and, when possible, repair defective PPE. If unable or unauthorized to conduct the repair, the UXOSO will return the item to the manufacturer for repair, or procure a replacement.

D.6.8.2 Storage

PPE will be stored in a location that is protected from the harmful effects of sunlight, damaging chemicals, moisture, extreme temperatures, impact or crushing. The PPE for this site will be stored in the ATI field office.

D.6.9 PPE Procedures

D.6.9.1 ATI does not anticipate activities to be conducted in areas containing HTRW contamination. The decontamination and disposal of PPE will not be required during activities under this project. Specific procedures include:

D.6.9.2 All ATI, contractor, or subcontractor site personnel will be given initial, PPE-specific training, which complies with this section. The UXOSO or the Safety Manager, prior to personnel participating in site operations where PPE is required, will give this training.

D.6.9.3 All personnel receiving PPE training will be required to demonstrate an understanding of the training topics and the ability to correctly use the PPE. This will be accomplished through the UXOSO supervising and visually inspecting

each individual's ability to properly don and use the PPE during initial use of the PPE.

D.6.9.4 Upon completion of the training and after each employee has successfully demonstrated the requisite understanding, the UXOSO will complete the "Documentation of Training" form. This form identifies the employees who attended the training course and successfully demonstrated the required knowledge, the date(s) of the training and demonstration session(s), and the PPE covered by the training session.

D.6.10 PPE Donning and Doffing Procedure

D.6.10.1 PPE donning procedures are outlined below:

- The general donning procedures are given as a guide and may be altered by the UXOSO if the improvements are warranted by site operations and approved by the Safety Manager.
- Prior to donning, gather the PPE required for performing the task specified for the day's operations.
- Always inspect protective gloves, boots/boot covers, hard hats, and outer garment for proper fit, integrity, and function. If something is wrong with the PPE, which may affect its use, turn it in for other PPE that is in good condition.
- If kneeling will be necessary during site activities, avoid kneeling on any contaminated surfaces, if present, and place tape over the knee areas to reduce the possibility of tearing or wearing out the knees.
- If earplugs are to be worn, insert them before putting on gloves or any other PPE that might obstruct the proper insertion of the plugs.
- Don all other PPE (hard hat, safety glasses, etc.), saving the gloves for last.

D.6.10.2 PPE doffing procedures are presented below:

- The procedures to follow in removing PPE are common-sense procedures. Care should be taken to ensure that no damage to reusable PPE is made. Most PPE utilized on this site is of the reusable type. Disposable PPE is considered that which cannot be cleaned, or which may be subjected to contamination from hazardous materials. It is not anticipated that contamination from hazardous materials will be encountered during activities on this project.
- Sufficient quantities of PPE will be maintained, on-site, for replacement of any defective or deteriorated PPE.
- If hearing protection is required, and a disposable type is used, it will be replaced and disposed of daily.

D.6.11 PPE Inspection Procedures

The UXOSO, or a designated appointee, will inspect all incoming shipments of PPE received from the ATI office, the manufacturer, or the distributor. This inspection will include checking the shipment for correctness of size, quantity, material, and quality. Any deficiencies should be noted and defective material returned to the supplier. Prior to donning PPE, site personnel will thoroughly inspect each piece of PPE to determine if it is in proper working order, and ensure that the item will be capable of protecting the employee from site hazards. Site personnel will check the following when pre-donning inspections are conducted:

- Ensure that equipment is ANSI approved.
- Check that hard hats are in good condition, with no cracks or chemical/material build-up visible.
- Check hard-hat headband for proper function and completeness.
- Ensure all eye/face/head PPE fits comfortably and securely.
- Check safety glasses and face shields for cracks or scratches that could impair vision or compromise structural integrity.
- Check safety glasses for side shields.
- During the work task, buddy teams should periodically inspect each other's PPE for evidence of chemical attack, such as discoloration, swelling, stiffening, or softening. Also check for closure failure, tears, punctures, and seam discontinuities. If defective or deficient PPE is identified, it will be repaired or replaced immediately.

D.6.12 Evaluation of PPE Program

Since hazard/risk assessment is a continuing process, changes in the initial types and levels of PPE will be made in accordance with information obtained from the actual implementation of site operations and data derived from the site monitoring. The UXOSO will review periodically the on-site PPE program to ensure that the proper level of PPE is being utilized. If changes to operations on-site are encountered, the UXOSO will make a request for appropriate changes to the required level of PPE for activities on this site.

D.7 Medical Surveillance

D.7.1 General

Medical surveillance of ATI and subcontractor employees will be conducted in accordance with the requirements of OSHA 29 *CFR* 1910.120(f), 29 *CFR* 1910.134(e), 29 *CFR* 1910.95, and the Corporate ATI Safety Program. All ATI employees working at the Former Five Points OLF are on the ATI Medical Surveillance Program. A baseline health assessment is conducted prior to participating in site operations, and it is updated annually thereafter, which determines the worker's ability to perform UXO/OE operations in a safe and healthful manner. Prior to assigning any employee to work at the Former Five Points OLF, that employee's records will be checked to ensure that the medical surveillance physical is current and will remain in effect for the duration of the assignment. Current and updated medical clearance certification will be maintained on-site with the UXO Safety Officer.

D.7.2 Physician's Statement

The results of the physical examination will be made available to the employee, and a written physician's statement will be sent to ATI. The physician's statement will include the following:

- The physician's opinion regarding any conditions, which would place the employee at an increased risk from working in UXO/OE operations.
- The physician's recommended limitations upon the employee's assigned work, if any, and clearance to wear a respirator.
- A statement in which the employee has been informed, by the physician, of the results of the examination and any conditions which may require further examination or treatment.
- A copy of the current physician's statement will be kept in the employee's file on-site for the duration of his work on the project.

D.7.3 Supplemental Examination

Any site worker who has been injured, received health impairment, developed signs or symptoms of possible over-exposure; or received a documented over-exposure without the use of respiratory protection, will undergo a supplemental examination. The contents of this examination will be based upon the type of injury, illness, signs or symptoms, or exposure involved and will be determined by the physician. Prior to reassignment to site activities, the physician will certify that the employee is fit to return to work. If necessary, the physician will specify, in writing, any activity restrictions or additional tests that may be required.

D.7.4 Termination Examination

Upon termination of employment, personnel who have worked continuously at an ATI UXO/OE project site will be afforded an opportunity to undergo a termination examination. This physical will be equivalent to the pre-assignment health assessment as long as the employee is not terminating for the purpose of employment with another firm. The content of this examination may be modified by the physician, based on input from ATI, related to the nature and type of exposure the worker received. As a result of the analysis performed during the archive search conducted for the Former Five Points OLF, radiological contamination is not expected to be present in the area where work will be performed. Related monitoring, therefore, is not planned for this project.

D.8 Radiation Dosimetry

D.8.1 In accordance with the Archive Search Report, "Conclusions & Recommendations" and previous remediation conducted at the Five Points Outlying Field, Tarrant County, Texas, a radiological hazard is not anticipated within the project area.

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D.9 Environmental and Personnel Monitoring

D.9.1 General

On-site monitoring will be conducted during specific site activities to evaluate the potential physical hazards that may be encountered. These on-site monitoring activities will be used to assist in determining the effectiveness of control measures, the need for upgrading or downgrading of PPE requirements, and the effectiveness of safe work practices. ATI will use direct reading, real-time instruments whenever possible, or required, to detect and qualify site hazards. If a reading is achieved, which exceeds the action level specified in Table D-18, the UXOSO will take the steps outlined in this Appendix or other referenced paragraphs to correct the situation or minimize the exposure. In accordance with the SOW, OE hazards exist as a result of DOD activities. OE is classified as a safety hazard; thus, the applicable provisions of 29 *CFR* 1910.120 apply.

D.9.2 Perimeter Monitoring Requirements

There will be no perimeter monitoring conducted during activities under the SOW since site operations, which would result in the release of toxic materials in a gaseous, vapor, or particulate form will not be conducted.

D.9.3 Personal Monitoring Requirements

D.9.3.1 Real-time Direct-reading Monitoring

The guidelines presented in Table D-18 represents the initial real-time, direct-reading monitoring requirements for this site. The results of previous monitoring or the detection of factors that indicate a potential for exposure may require an increase or reduction of monitoring frequency. The monitoring equipment to be used to assess exposure hazards for this project site will include:

- Sound level meter – Used as a screening device to measure sound power emitted by a source.
- Noise dosimeter – Used to calculate the 8-hour time-weighted average (TWA) exposure.
- Wet-bulb, Globe Temperature (WBGT) meter – Provides a useful, first-order index of the environmental contribution to heat stress as influenced by air temperature, humidity, and radiant heat. Used as a screening tool to initially assess the potential for personnel to experience heat strain.

Table D-18. Site Monitoring Schedule and Action Levels

Hazard	Equipment	Monitoring Frequency/Location	Action Level	Action to be taken
Heat Stress	Wet-bulb, Globe Temperature (WBGT) Meter	Daily when ambient temperatures are expected to exceed 78.8°F for acclimated workers, 72.5°F for non-acclimatized workers, and 70.0°F for workers using impermeable or semi-impermeable clothing	Above ACGIH screening criteria presented in Table D-20	Institute physiological monitoring and appropriate controls as outlined in paragraphs D.15.3 and D.15.4
Cold Stress	Meteorological Data and Table D-21	Daily when ambient temperatures are expected to drop below 32°F.	Above ACGIH screening criteria presented in Table D-22	Institute physiological monitoring and appropriate controls as outlined in paragraphs D.15.3
Noise	Sound Level Meter	Conducted during initial operation of high noise equipment, and periodically thereafter, according to the recommendations of the ATI Safety Office.	Whenever noise levels in the hearing zone exceed 85 dBa.	Conduct noise dosimetry as outlined below. Issue hearing protection devices to effected personnel
	Noise Dosimeter	Whenever noise levels in the hearing zone exceed 85 dBa.	Noise readings greater than 80 dBa 8-hour time-weighted average	Report dosimeter readings to the ATI Safety Office to ensure hearing protection is adequate for the level of noise experienced.

D.9.3.2 Integrated Breathing Zone Sampling

Exposure monitoring will focus on the potential for exposure to physical hazards (including OE) during surface clearance activities. Table D-18 identifies the type of monitoring equipment to be used, the frequency at which the monitoring will be conducted, monitoring method to be employed, action level, and the action to be taken if the action level is exceeded.

D.9.3.3 Temperature Extreme Monitoring

D.9.3.3.1 Heat Stress Monitoring

Heat stress monitoring will be conducted in accordance with (IAW) the guidelines presented in Table D-18 and the manufacturers procedures. This monitoring will be conducted by, or at the direction of the UXOSO and will be used to minimize physiological effects of high temperatures. The guidance presented in Table D-18 will be used by the UXOSO to determine when and what type of heat and cold stress monitoring will be conducted.

D.9.3.3.2 Cold Stress Monitoring

Cold temperature extremes can be made more dangerous by water and wind speed. A wind chill chart, Table D-21, "Cooling Power of Wind on Exposed Flesh Expressed as Equivalent Temperature" should be used to monitor the cooling power of wind on exposed flesh. The UXOSO will also use meteorological data and Table D-21 to inform site personnel of the combined temperature/wind chill effect to be expected during the day's activities.

D.9.3.4 Noise Monitoring Procedures

High noise levels are anticipated during the operation of earth moving machinery (EMM) and clearing and grubbing equipment. The noise levels will be monitored to determine if additional hearing protection devices will be required and to ensure that the level of hearing protection being used is adequate. At the start of potential high noise operations, sound level readings will be taken in the hearing zone of the affected personnel. Noise dosimetry will be conducted for any operation where sound level readings indicate a potential for exposures above 85 decibels as recorded in the A-weighted sound level (dBA). Table D-18 will be consulted to determine the type, amount, and frequency of noise monitoring.

D.9.4 Monitoring Equipment Calibration and Maintenance

All sampling and monitoring instrumentation used in site will be calibrated and/or response-checked IAW the manufacturer's specifications before and after use each day. If an instrument fails to calibrate or respond correctly, it will be removed from service until it can be repaired IAW manufacturer's specification.

D.9.5 Blood-Borne Pathogen (BBP) Monitoring

D.9.5.1 Minimum requirements for procedures to prevent contact with blood or other potentially infectious materials and comply with OSHA standard 29 *CFR* 1910.1030 will be adhered to for this project. This section applies to all ATI operations and personnel whose occupational responsibilities may present possible exposures to blood or other potentially infectious materials. This program meets or exceeds all requirements set forth in OSHA standard 29 *CFR* 1910.1030.

D.9.5.2 ATI will also comply with other OSHA, state, or local regulations or client requirements for minimizing contact with BBPs.

D.9.5.3 The strategy of "Universal Precautions" was developed by the Centers for Disease Control to address concerns regarding transmission of human immunodeficiency virus (HIV). This "Universal Precautions" concept stresses all sources should be assumed to be infectious for HIV, Hepatitis B virus (HBV), and other BBPs. The philosophy of universal precautions will be applied whenever ATI employees render first aid involving potential contact with blood or other potential infectious materials.

D.9.6 Monitoring/Sampling Results

The requirements of this section are not anticipated as a result of the project task hazardous analysis assessment.

D.9.7 Exposure Monitoring Records

The requirements of this section are not anticipated as a result of the project task hazardous analysis assessment.

D.10 Site Control

D.10.1 Site Access Control

D.10.1.1 Site access control will be implemented by the UXOSO and will be accomplished through a program that limits movement and activities of people and equipment at the project site.

D.10.1.2 Site control procedures will be modified by the UXOSO if site conditions change during operations or a breach of the system occurs which would indicate more stringent controls be enacted.

D.10.1.3 Site access control will be based on site-specific characteristics including:

- Potential chemical, biological, physical, or explosive hazards;
- Expected weather conditions;
- Planned site activities; and
- Site proximity to populated areas.

D.10.2 Site Security (physical and procedural) Description

D.10.2.1 Physical Site Security: The Former Five Points OLF is now mostly residential and does not contain any permanent physical site security measures.

D.10.2.2 Procedural Site Security: The project area includes a Subdivision and a Mobile Home Park. Due to the types of OE expected at this site, minimal exclusion areas are required. The Site Project Manager will coordinate with residents to minimize their inconvenience during Intrusive Operations.

D.10.2.3 General site access description: The area of concern is approximately eight miles south of the center of Arlington, and three miles north-northeast of Mansfield, Texas, at the southwest corner of the intersection of Matlock Road (to the east) and West Harris Road (to the north). The intermittent Bowman Branch of the Walnut Creek lies to the south, and properties along Commercial Boulevard East are adjacent to the west.

D.10.3 Worker/Visitor Registration

D.10.3.1 The UXOSO will be responsible for logging in/out all personnel who enter the EZ.

D.10.3.2 Visitors will receive a safety briefing outlining the potential hazards, control measures, limits of site, access to the site, and emergency procedures.

D.10.3.3 The on-site USACE OE Safety Specialist will be notified of all personnel entering into the work area within their boundaries.

D.10.4 Escort of Visitors

A qualified UXO individual will escort visitors into the EZ at all times.

D.10.5 PPE requirements.

All workers and visitors into the EZ will wear all PPE required for that site.

D.10.6 Posting of Site/Work Area Boundaries

ATI will place placarded barricades at the access routes to the OE removal site.

D.10.7 Work Zones

Site work zones will be established, by the UXOSO, prior to initiating operations in order to control site access. Establishment of site work zones will be based upon site conditions, activities, and exposure potentials. Whenever possible, site work zones will be clearly marked using placards or signs and enclosed using hazard tape, ropes, chains, or fences. The UXOSO will control access to each work zone and will ensure that all site workers and visitors have received the proper training and medical surveillance required entering a specific zone. Access will be denied to any potential entrant not meeting these requirements.

D.10.7.1 Exclusion Zone (EZ)

D.10.7.1.1 The EZ boundaries will be established for the work site and coordinated with the US Army Engineer and Support Center, Huntsville Safety Representative.

D.10.7.1.2 This is the area where hazards or contamination do or could occur and will include all areas where PPE is required to control worker exposure to physical hazards.

D.10.7.1.3 During the OE removal action, the EZ will be established as the minimum separation distance (MSD) for unintentional/intentional detonation, maximum fragmentation range of 12 feet, as described in Chapter 2.0 of the Work Plan.

D.10.7.1.4 No OE is expected to be destroyed on site. All OE that is recovered at this site will be collected and secured until it can be shipped to Clean Harbors Environmental Services, Inc. of Colfax, LA. Where it will be rendered inert and disposed of. Disposal activities will be conducted in accordance with established procedures, as described in Chapter 2.0 of the Work Plan.

D.10.7.2 Support Zone (SZ)

D.10.7.2.1 The SZ is the area outside the EZ where site support activities are conducted. This zone includes the break areas.

D.10.7.2.2 Persons desiring entrance into the EZ must first meet with the UXOSO and receive the appropriate safety briefing in the SZ before gaining admittance to the EZ.

D.10.8 Site Maps

The site maps will be used by the UXOSO during the Tailgate Safety Briefings to inform the workers of the location of barricades and warning signs going into the EZ. Maps of the project site are included in Appendix B of the Work Plan.

D.10.9 On-site and Off-site Communications

D.10.9.1 Effective on-site and off-site communication is an integral part of site control and will be established prior to initiating site activities. All site personnel will be familiar with the different methods of off-site and on-site communication.

D.10.9.2 On-site communication will be used to coordinate site operations, maintain site control, and pass along safety information, such as monitoring results and work/rest periods, and alert site personnel to emergency situations.

D.10.9.3 The methods of on-site communications shall be Cellular telephone, Hand-held radios, and Hand signals.

D.10.9.4 The SUXOS, UXOSO, and individual team leaders will utilize cellular telephones and/or hand-held radios to maintain communications with personnel on site.

D.10.9.5 Upon mobilization to the site, the SUXOS and UXOSO will establish the on-site communication system.

- Team leaders and site personnel (SUXOS, UXOSO) will be issued cellular telephones, and/or hand-held radios along with a list of contact numbers and call signs of on-site personnel.
- On-site personnel assigned communications shall perform daily communication checks to the SUXOS.
- On-site communications will be checked at a minimum:
  - At the start of each workday upon teams reaching their area of activities, and
  - After the mid-day break, when work resumes.

- At anytime that communications with the SUXOS or UXOSO cannot be maintained, that on-site team shall stop all activities until communications can be re-established.

D.10.9.6 Hand signals: Site personnel will be familiar with the following hand and audible signals:

- Hand gripping throat: ***"Breathing problem, can't breathe"***
- Thumbs up: ***"OK, I'm all right, I understand"***
- Thumbs down: ***"No, negative"***
- Pointing to ear(s): ***"Can't hear, don't understand"***
- Waving hand(s) over head: ***"Need assistance now"***
- Pointing to eyes then pointing to a person/object: ***"Watch person/object closely"***
- Grab buddy's wrist: ***"Evacuate site now, no questions"***
- One long horn/siren blast: ***"Evacuate site to assembly point"***
- Two short horn/siren blasts: ***"Condition under control, return to site"***

D.10.9.7 Off-site communication is required to ensure effective communication with off-site management, USACE personnel, and Emergency Services personnel. The cellular telephone will be the method used to conduct off-site communications.

D.11 Personal and Equipment Decontamination

The SOW for the OE Removal at the Former Five Points Naval Air Station OLF includes performing the OE removal action described in the SOW and making final disposition of all OE and OE-related scrap recovered from the site. Hazardous and toxic waste, are not anticipated during activities under the SOW. Proper sampling and handling procedures will be followed when and if soil is sampled at locations of discovered UXO'. The site is not suspected to contain radiological waste or Chemical Warfare Materiel (CWM).

D.11.1 Personnel Decontamination

D.11.1.1 A program for the personal decontamination of on-site workers is not an anticipated requirement during activities under the SOW. However, every ATI employee and site visitor will take normal personal hygiene precautions during activities being conducted on-site.

D.11.1.2 Adequate sanitation facilities will be provided at each work site to ensure proper personal hygiene. Site sanitation will be established and maintained in accordance with OSHA 29 *CFR* 1910.120(n) and USACE EM 385-1-1, Section 2.

D.11.1.3 All personnel will use the provisions outlined in Section D.16.2.12 of this Work Plan on-site for personal hygiene.

D.11.1.4 If site conditions change or unanticipated hazardous contamination is encountered, work will be suspended, the on-site USACE safety representative will be notified, and the appropriate procedures will be developed and submitted for approval before work is resumed.

D.11.2 Equipment Decontamination

D.11.2.1 Based on the SOW and previous activities conducted at the site CWM is not expected within the project area. Therefore, related decontamination procedures are not applicable.

D.11.2.2 The analysis of hazards of concern presented by each task, under work to be performed at the site, does not reflect the requirement for equipment decontamination at this time.

D.11.2.3 If site conditions change or unanticipated hazardous contamination is encountered, work will be suspended; the on-site USACE safety representative, still to be determined, will be notified; and the appropriate procedures will be developed and submitted for approval before work is resumed.

D.11.2.4 General decontamination procedures that might apply to a given situation include:

D.11.2.4.1 All equipment, working surfaces and non-working surfaces will be decontaminated after contact with potentially infectious materials. A solution of 10 parts water to 1 part bleach, or equally effective material, will be used to clean contaminated areas.

D.11.2.4.2 Contaminated, sharp objects will be cleaned up using mechanical means, such as a brush and dustpan. Sharp objects will not be picked up directly with the hands.

D.11.2.4.3 Two pairs of gloves, inner surgical gloves and outer utility gloves, will be worn for cleaning contaminated surfaces. A smock or apron and eye protection will also be worn.

D.11.2.4.4 Only those employees directly involved with the decontamination efforts will be allowed in the work area while cleaning is taking place.

D.11.2.4.5 All cleaning equipment will be disinfected or disposed of in accordance with this section.

D.11.2.4.6 For minor injuries where the employee is able to return to work, the injured employee will clean up his/her own blood or other potentially infectious materials.

D.12 Emergency Response and Contingency Procedures

D.12.1 Introduction

A thorough emergency response and contingency procedures shall be designed and implemented to handle anticipated emergencies on site prior to commencement of hazardous waste activities. This can dramatically reduce the severity of emergencies. The procedures outlined in this Appendix shall be implemented prior to and reviewed during the conduct of any site activities that involves the possibility of personnel exposure to safety and health hazards.

D.12.2 Pre-Emergency Planning

The UXOSO will perform pre-emergency planning before starting field activities and will coordinate emergency response with emergency medical technician (EMT)/police/fire personnel when appropriate. Pre-emergency planning meetings shall be used to inform local authorities of the nature of site activities that will be performed under the SOW and the potential hazards that activities may pose to site workers, the environment, and the public. The UXOSO will verify all on-site emergency services information, to include telephone numbers and procedures for requesting services. It shall be the UXOSO's responsibility to post these procedures and telephone contact numbers IAW the requirements of this Appendix.

D.12.2.1 Potential Emergencies

The following are the potential emergencies that may arise during the conduct of activities under the SOW:

- Injury or illness associated with physical or biological hazards
- Inclement weather
- Fire
- Personal injury from the unintentional detonation of OE

D.12.2.2 Emergency Services

The UXOSO shall verify the availability of all local emergency services and to confirm the procedures used to request the service. It shall be the responsibility of the SUXOS to ensure that adequate off-site communications are available at all times. A break in off-site communications shall result in the temporary halting of all on-site activities until communications are reestablished. Off-site communications shall be accomplished using telephone service to the responsible support agencies. Emergency telephone numbers are presented in this plan and the UXOSO shall post in the site office and in all site vehicles. All site personnel

will receive a period of instruction on the procedures for obtaining off-site emergency services.

D.12.2.3 Initial Reporting Procedures

At the onset of an emergency, the respective team leader will contact the UXOSO and/or the SUXOS to start the emergency response action. Once action is initiated, the SUXOS will notify the USACE On-site Safety Specialist as soon as possible. The UXOSO will ensure that remaining site personnel are advised of the situation and informed of their proper response procedures. Personnel will be notified to:

- Stop work activities;
- Evacuate to the ATI site vehicle and proceed to the work site "Personnel Emergency Rally Point" (Described daily during the "Tailgate Safety Briefing", by the UXOSO);
- Begin emergency procedures; and
- Notify off-site emergency response organizations.

D.12.3 Personnel Roles, Lines of Authority, and Communication

To ensure a smooth process during an emergency response, the following positions have been established. Site personnel and local points of contact will be notified of changes to personnel roles, lines of authority, and communications as they take place.

D.12.3.1 On-scene Incident Commander

In the event of an emergency, the UXOSO will assume the responsibility of the On-scene Incident Commander. The SUXOS will assist the UXOSO, and in the event that the UXOSO is unavailable or incapacitated, the SUXOS will be the alternate person to assume this role. The On-scene Incident Commander will have the responsibility of directing all on-site and off-site emergency response personnel until relieved by competent authority. The SUXOS will notify the USACE On-site Safety Specialist as soon as possible of the emergency.

D.12.3.2 On-site Emergency Response Personnel

During site activities ATI personnel will act in the role of on-site emergency response personnel. Those personnel assigned to these tasks will be designated by the SUXOS prior to initiation of site activities involving the potential for an on-site emergency. ATI on-site emergency response personnel will receive training in the response actions that they will be authorized to, and may be directed to perform during a site emergency.

D.12.4 Emergency Recognition and Prevention

D.12.4.1 General

Prevention of emergencies will be aided by the effective implementation of the SSHP, personnel awareness, contingency planning, and on-site safety meetings. Anticipated emergencies may include physical injury, fire, explosion, inclement weather, and natural disasters. The UXOSO will use the site-specific briefing and/or the Tailgate Safety Briefings to inform site workers of the recognition, prevention, and response procedures for each anticipated emergency.

D.12.4.2 Small Fires

A small fire is defined as a fire that can most likely be extinguished by site personnel using a 4A:20B:C portable fire extinguisher. The decision on whether or not to try to extinguish a fire using available site personnel and equipment will be made by the UXOSO and based on whether the fire is small, large, or involves explosives. The following actions shall be taken in the event of a small fire:

- The UXOSO and/or SUXOS shall be notified immediately. The SUXOS will notify the USACE On-site Safety Specialist.
- All unnecessary personnel shall be evacuated to an unwind position.
- Personnel shall attempt extinguish the fire from an upwind position.
- The UXOSO/On-site Incident Commander will request any emergency response services if needed.
- All personnel shall be prevented from fighting a fire if the possibility of explosive materials are involved.
- After the fire has been extinguished, the area around where the fire occurred must be watched for a minimum of 30 minutes to ensure that re-ignition does not occur. If personnel are not working in the area, the UXOSO should check the area of the fire periodically.

D.12.4.3 Large Fires

In the event that a large fire occurs or a small fire cannot be extinguished, the following actions shall be taken:

- The UXOSO and/or SUXOS shall be notified immediately. The SUXOS will notify the USACE On-site Safety Specialist.
- All unnecessary personnel shall be evacuated to an upwind position.

- The UXOSO/On-site Incident Commander shall request local emergency response services necessary to handle the situation.

- To the extent possible, the UXOSO/On-site Incident Commander will direct personnel to move vital equipment/supplies form the fire's path, if this can be accomplished safely.

- To the safest extent possible, available resources shall be used to fight the fire, but only from an upwind position.

- No personnel shall attempt to fight a fire that may involve explosive materials.

- The UXOSO shall warn responding personnel of location of any known hazards (i.e., UXO, flammable materials, etc.).

D.12.4.4 Fires Involving Explosive Materials

D.12.4.4.1 If a fire occurs which involves explosive materials, such as chemicals, fuels or UXO/OE, the UXOSO/On-site Incident Commander will order the immediate evacuation of all site personnel to an upwind assembly point at least the MSD (12 feet) from the fire site. At no time will ATI personnel fight a fire involving explosive materials. The on-site USACE OE Safety Specialist will be advised of the situation and the requirement that fire fighting personnel should not enter any closer than the MSD from the fire and may spray water to surrounding buildings, structures, etc., in order to prevent the spread of fire. Cellular phones will not be used around Flammable Liquids IAW OE Safety Group Safety Advisory 03-2003.

D.12.4.4.2 After the fire has burned itself out, the site must be barricaded and entry prohibited until adequate cooling time has passed. The cool-down period should be a minimum of 24 hours. Explosive materials that may not have discharged during the fire may still be liable to function in the presence of extreme heat. After the site has cooled down, the SUXOS and UXOSO will inspect the site, and the condition of any UXO/OE involved in the fire and make a determination as to whether or not the site is safe for others to enter.

D.12.4.4.3 If UXO/OE is still intact; the SUXOS will determine whether or not it is safe to move to a secured holding area. If it is considered unsafe to move, it will be left in place and non-UXO/EOD personnel will be prevented from going into the area. The UXO will be reported to the USACE OE Safety Specialist who will request EOD support.

D.12.4.4.4 If non-UXO qualified personnel must enter the site for purposes of fire investigation, etc., they must receive a briefing on the potential hazards of UXO on the site. They must be accompanied, at all times, by a UXO qualified ATI employee. No outside personnel will be permitted on-site while there is a known UXO/OE hazard present.

D.12.4.4.5 If, during the course of the investigation, UXO/OE is observed, the site will be evacuated of all non-UXO qualified personnel until the site can be rendered safe for re-entry.

D.12.4.5 Explosions

D.12.4.5.1 In the event of an explosion all non-essential site personnel shall be evacuated to a safe, upwind assembly point outside the EZ. The UXOSO/On-site Incident Commander, the SUXOS, and the UASCE On-site Safety Specialist shall be immediately notified of the situation and the UXOSO/On-site Incident Commander shall request the required emergency response services needed. After an explosion has occurred, the site will remain barricaded for a minimum of 30 minutes before entry is permitted. The SUXOS and the UXOSO will enter the site and inspect for the presence and condition of UXO/OE.

D.12.4.5.2 If UXO/OE is still intact; the SUXOS will determine whether or not it is safe to move to a secured holding area. If it is considered unsafe to move, it will be left in place and non-UXO/EOD personnel will be prevented from going into the area. The UXO will be reported to the USACE OE Safety Specialist who will request EOD support.

D.12.4.6 Inclement Weather

Inclement weather may necessitate ceasing site operations and the evacuation of personnel from the work area. Heavy precipitation, high winds, electrical storms, or cold-damp weather may affect workers ability to function properly. The UXOSO shall be responsible for obtaining daily local weather advisories and ensuring that the SUXOS is informed of possible adverse forecasts. When inclement weather does occur, the procedures outlined below shall be followed.

D.12.4.6.1 Heavy Precipitation

The UXOSO shall be alert when the possibility of heavy precipitation is forecasted even if expected in distant areas from the work site. The UXOSO shall assess each work site to determine if the area is prone to flash flooding. Site operations shall be halted, equipment will be secured, and personnel shall withdraw to adequate shelter. The SUXOS will be responsible to determine when operations shall resume, after consultation with the UXOSO.

D.12.4.6.2 High Winds

High winds may create conditions that threaten the safety of workers. The UXOSO may determine that wind conditions are at a level that site operations shall be halted, equipment will be secured, and personnel shall withdraw to adequate shelter. The SUXOS will be responsible to determine when operations shall resume, after consultation with the UXOSO.

D.12.4.6.3 Electrical Storms

Electrical storms, with their associated lightening, present a significant hazard to site workers. The UXOSO shall be responsible for obtaining daily local weather advisories and ensuring that the SUXOS is informed of possible adverse forecasts. He will monitor local weather stations for electrical storm advisories. Once a storm is within ten miles of the site, operations will be terminated. All workers will seek adequate shelter. If the UXOSO determines that it is unsafe to remain on site, he shall call for the evacuation of the site. Once the storm is outside the ten-mile range of the work site, work may resume if all other factors are favorable.

D.12.4.6.4 Cold-damp Weather

D.12.4.6.4.1 If project activities are extended through the late fall and winter months, it is possible that circumstances could present themselves where employees could be affected by freezing and nonfreezing cold injury. Whenever you go into an environment that is less than your body temperature, you are exposed to a Cold Challenge. Cold weather can lower body temperature, resulting in impaired performance and cold injuries. When protection from clothing and shelter is inadequate, the body protects its temperature by reducing skin blood flow and by shivering.

D.12.4.6.4.2 The UXOSO will cover cold injury precautions and procedures with workers prior to the start of the winter months. Section D.15, of the SSHP, shall be used for review of the affects of cold weather. Employees shall monitor each other for the effects of cold weather. Supervisors and the UXOSO will be notified when workers show signs of cold weather injuries.

D.12.4.7 Chemical Warfare Material (CWM) Procedures

D.12.4.7.1 The site is not suspected to contain Chemical Warfare Materiel (CWM). However, if suspect CWM is encountered during any phase of site activities personnel shall withdraw upwind from the work area, secure the site and contact the USACE On-site Safety representative.

D.12.4.7.2 All work will immediately cease. Project personnel will withdraw along cleared paths upwind from the discovery.

D.12.4.7.3 A team consisting of a minimum of two personnel will secure the area to prevent unauthorized access. Personnel should position themselves as far upwind as possible while still maintaining security of the area.

D.12.4.7.4 The SUXOS will notify the USACE On-site Safety representative to facilitate explosive ordnance disposal (EOD) response, and two personnel will secure the site until the EOD unit's arrival.

D.12.4.7.5 Emergency Contact List, Table D-19 provides an emergency contact list for the OE Removal activities at the Former Five Points OLF, Arlington, Texas project.

D.12.5 Safe Distances and Staging Areas

D.12.5.1 Safe Distance

Work zones will be established and posted to prevent unauthorized persons from entering into hazardous areas. As established, in paragraph D.10.7.1 the site Exclusion Zone (EZ) is to protect nonessential personnel from blast overpressure and fragmentation hazards. The EZ shall be at a distance equal to or greater than the minimum separation distance (MSD) calculated by the USACE Directorate of Engineering. For activities being conducted at this site the safety distance established for the EZ is calculated at 12 feet.

D.12.5.2 Staging Area

The UXOSO, in conjunction with the SUXOS, will identify staging areas, outside the MSD, for the various work areas on the site. These staging areas will be identified on the site map and will be communicated each morning to workers during the daily tailgate safety briefings. In the event of the need to suspend operations and evacuate the work site, all personnel will proceed to the staging areas where personnel shall be accounted for.

D.12.6 Site Security and Control

During an emergency, site security and control will be paramount to control any possibility of negative effects on the public. Upon notification of an emergency, each team leader will be responsible for accounting for and evacuation of their team personnel to the Staging Area. Once the team has evacuated, the team leader will report its completion to the UXOSO, acting as the On-site Incident Commander. At that time the team leader will ensure that personnel not authorized by the On-site Incident Commander are allowed access into the EZ. If ATI personnel are needed for other response actions, the On-site Incident Commander will request assistance from the USACE On-site Safety Specialist. The USACE On-site Safety Specialist will then request security and access control services from the local police or sheriff department.

D.12.7 Evacuation Routes and Procedures

D.12.7.1 In the event of an emergency that requires evacuation of the site, an alarm will be sounded or verbal instruction given by the UXOSO to evacuate the area to the work site "Staging Areas." This point will be established outside the work area Maximum Fragmentation Range (12 feet).

D.12.7.2 Personnel will be shown the location of the staging areas daily, during the Site Safety Briefing. The location of the assembly point may change as work activity progresses within the project area.

D.12.7.3 After evacuation, the UXOSO will account for all personnel, ascertain information about the emergency, and advise responding on-site personnel. The UXOSO will contact, advise, and coordinate with responding off-site emergency personnel, if deemed necessary by the situation or the client Safety and Health Representative.

D.12.7.4 In all situations that require evacuation, personnel will not re-enter the work area until the conditions causing the emergency have been corrected; the hazard reassessed; the SSHP has been revised and reviewed with on-site personnel, if needed; and instructions have been given for authorized re-entry by the UXOSO.

D.12.7.5 The route directions to the medical facility will be posted in the ATI office, at the work site, and in site vehicles. This map also will indicate the evacuation route.

Table D-19. Emergency Contact List
OE Removal Activity, Former Five Points OLF, Arlington, Texas

Service/Contact	Agency	Telephone Number
Ground and Air Ambulance		"911"
Emergency Medical Treatment	Arlington Memorial Hospital South	**(911)** or Non-emergency (817) 472-3400
Local Police (Emergency)	Arlington Police Department	**(911)** or (817) 459-5600
Local Fire Department (Emergency)	Arlington Fire Department	**(911)** or (817) 459-5500
National Poison Control Center		1- 800- 942- 5969
North Texas Poison Center		1-800-222-1222
Centers for Disease Control http://www.cdc.gov/health/diseases.htm		(800) 311-3435 (404) 639-3534
Mr. Doug Goehring	ATI Project Manager	(865) 481-5341
Mr. Charles Phillips (CIH), ATI Safety Manager	ATI Safety Office	(865) 481-5337
Ms. Cheryl Riordan, CSP	ATI Safety Office	(865) 481-5337
Mrs. Berdi Hussey	ATI Human Resources Manager	(865) 481-5357
Ms. Lydia Tadesse	USACE, Contracting Officer	(256) 895-1169
Mr. Jerry Kresge	USACE, Project Manager	(256) 895-0665
Mr. Dwayne Ford	USACE Fort Worth District Regional Project Manager	(817) 886-1390
Mr. Greg Parsons	USACE OE Safety	(256) 895-1598
Ms. Madeline Morgan	CESWF Safety Office	(817) 886-1316
CHEMTREC		(800) 424-9300
National Response Center		(800) 424-8802
EPA Environmental Response Team (ERT)		(800) 424-8802
EOD Fort Hood, TX		(254) 287-2929

ATI = American Technologies Incorporated.
CHEMTREC = Chemical Transportation Emergency Center
CIH=Certified Industrial Hygienist
CSP = Certified Safety Professional
EOD = Explosive Ordnance Disposal
EPA = Environmental Protection Agency
ERT = Environmental Response Team
OSHA = Occupational Safety and Health Administration
PM = Project Manager
USACE = U.S. Army Corps of Engineers

D.12.8 Decontamination Procedures

It is not anticipated that hazardous waste decontamination shall be required during any activities under the SOW. This determination has been made based upon archival documentation and past activities conducted at the site.

D.12.9 Emergency Medical Treatment and First Aid

D.12.9.1 In the event of an emergency involving personal injury or illness, on-site first-aid/CPR-trained personnel shall render first aid. Emergency medical services will be summoned, if deemed necessary by the UXOSO. If the injured employee feels he/she requires additional treatment, the employee will be given access to professional medical attention.

D.12.9.2 ATI will have personnel trained and qualified in CPR and First Aid on-site to provide immediate response until the arrival of professional medical personnel. Adequate first aid supplies will be on hand at all times for qualified personnel to use.

D.12.9.3 The UXOSO will ensure that all employees are informed who the First Aid/CPR-trained and qualified personnel are during the daily Site Safety Briefings.

D.12.9.4 First aid kits will be available in the ATI office building and in each site vehicle. The UXOSO will have final authority on the decision to require additional professional medical services (i.e., paramedics, hospital visit, etc.) for any illness or injury. If the injured employee feels he/she requires additional treatment, the employee will be given access to professional medical attention.

D.12.10 Emergency Alerting

It is the responsibility of the SUXOS to ensure that adequate on-site and off-site communications are available at all times. At any time that communications between individual teams and the SUXOS or UXOSO, or to off-site emergency services are lost, field operations shall be suspended until communications is re-established. The telephone numbers for all emergency services and points of contact are listed in Table D-19. This will be posted in the office/break area and all site vehicles. All site personnel shall be briefed daily on the procedures for obtaining off-site emergency services.

D.12.11 Emergency Response Procedures

In the event of an on-site emergency the individual team leader or first person aware of the emergency will contact the SUXOS or UXOSO by field radio or cellular phone. The UXOSO and/or the SUXOS will normally be responsible for requesting emergency services. If the order is given to evacuate the site of all personnel, each on-site team leader will assemble, account for, and evacuate all team personnel to the pre-designated staging area. The UXOSO or the SUXOS

will initially instruct the on-site CPR/First Aid trained personnel to respond to the emergency. These individuals shall render emergency first aid treatment and stay with the injured until relieved by off-site emergency services personnel.

D.12.12 Post Emergency Actions

Prior to the re-start of on-site activities the UXOSO will ensure that sufficient emergency supplies are on hand to replace those used during the emergency. That on-site emergency CPR/First Aid trained personnel are on site, equipped, and prepared to respond. A critique of the emergency response actions taken will be initiated, with the results driven to look for flaws in the system and to improve on the emergency response.

D.12.13 Personal Protective Equipment

D.12.13.1 It is the responsibility of the UXOSO to ensure that all individuals performing activities on-site have and use personal protective equipment that will protect the employee from hazards. Section D-6, of the SSHP, describes the personal protective equipment which will be utilized during activities described under the SOW.

D.12.13.2 Due to the type of work that will be taking place at the Former Five Points OLF project site, Level D will be used. This level of PPE will not be allowed in areas of the site where atmospheric hazards are known or expected to exist. Level D should also be worn only if the activity in which personnel are engaged does not have the potential for splash, immersion or any other contact with hazardous substances.

D.12.14 Incident Reporting

All accidents that occur incidentally to an operation, project, or facility shall be investigated, reported, and analyzed.

D.12.14.1 Responsibilities

Employees and subcontractors are responsible for reporting all injuries or occupationally related illnesses as soon as possible to the SUXOS and the UXOSO. The SUXOS is responsible for notifying the on-site USACE Safety representative and the ATI Project Manager as soon as possible after learning of the incident. He shall immediately report to the ATI Project Manager any incident, which could bring adverse attention or publicity to the U.S. Army, the Corps of Engineers, or ATI. The UXOSO shall notify the ATI Safety office of all accidents within 24-hours. He shall initiate an investigation and document all information pertaining to the incident. The ATI Project Manager shall notify the CEHNC Contracting Officer telephonically as soon as possible after learning of the incident. He shall forward any reports required.

D.12.14.2 Accident/Incident Notification Procedures

D.12.14.2.1 On-site USACE Safety Representative

An accident with any of the consequences mentioned will be reported immediately to the on-site USACE Safety representative.

D.12.14.2.2 CEHNC Contracting Officer

Accidents/incidents, which result in a fatality, injury of employees, lost workdays, and/or property damage assessed at a cost of $2,000 or more, shall be reported telephonically to the Governments Contracting Officer as soon as possible after learning of the incident. The report shall contain as much information as is known concerning the incident. An ENG Form 3394 (see Appendix F, page F-33) shall be completed in accordance with the instructions attached to the form and forwarded to the Governments Contracting Officer within 5 working days after the incident. The ENG Form 3394 shall be legible and signed by the supervisor of the person injured (or supervisor of the activity where property damage occurred) and by the ATI Project Manager.

D.12.14.2.3 ATI Safety Office

All accidents/incidents that occur at the project site shall be investigated, reported, and analyzed. The ATI Accident Report Form (see Appendix F, page F-2) shall be initiated by the site UXOSO and submitted to the ATI Safety Office within 20 calendar days after the incident. If the ENG Form 3394 is required, it shall be forwarded to the ATI Safety Officer for review, action, signature, and forwarding to the Government Contracting Officer.

D.13 Confined Space Entry Procedures

Based on the SOW and planned activities for the conventional OE Removal Activities at the Former Five Points OLF, confined space entry will not be conducted. Therefore, related procedures are not applicable to this site.

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D.14 Spill Containment

There will be no large volume storage of fuels and oils at the project site; therefore, the probability of a spill is unlikely. However, the UXOSO will maintain and issue materials and equipment capable of containment and recovery of any spilled materials. Spill control materials and equipment will be staged at any location where fuel transfer will take place. Refer to appropriate Activity Hazard Analyses. In the event of a spill, the following procedures apply:

1. Notify the UXOSO and SUXOS immediately.

2. The SUXOS will notify the on-site USACE OE Safety Representative. The following relative information (location, time, chemical identity, quantity, and MSDSs), and any corrective actions/measures taken will be passed.

3. Locate the source and stop the leak/spill if it can be done, as dictated by the UXOSO.

4. Begin containment and recovery of spilled material, as directed by the UXOSO, using appropriate PPE and spill clean-up equipment and materials.

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D.15 Heat/Cold Stress Monitoring

D.15.1 General

D.15.1.1 The UXOSO will review conditions with site personnel that would modify an individual's susceptibility to heat/cold-induced stress. He will ensure that such individuals have the opportunity to modify or refrain from activities that would put personnel at risk.

D.15.1.2 Prior to initiating site activities each day, and periodically throughout the day, the UXOSO will inspect the site personnel for evidence of heat-related illnesses. Evidence of extreme dehydration, illness, drug or alcohol use may require the UXOSO to restrict the worker's activities until such time as the worker is fit for duty. Personnel identified as being at high risk for heat stress, who are allowed to participate in site operations, will be monitored frequently by the UXOSO.

D.15.2 Heat and Cold Stress Monitoring Protocols

D.15.2.1 Wet-Bulb, Dry-Globe Thermometer (WBGT) Monitoring Protocol

For site conditions where personnel are working in Level D PPE, and the ambient temperature is greater than 75°F, the UXOSO will conduct WBGT monitoring to assist in controlling the potential for site workers experiencing heat-related adverse health effects. The UXOSO will use an approved Heat Stress Data Logger periodically throughout the day to determine the WBGT readings and to determine the work/rest schedule to be implemented. The values outlined in Table D-20 are designed such that nearly all acclimatized, fully clothed workers with adequate water and electrolyte replacement liquids intake will be able to function without their body temperatures exceeding 100.4°F.

Table D-20. Permissible WBGT Heat Exposure Threshold Limit Values

Work-Rest Regiment	Work Load		
	Light[a]	Moderate	Heavy
Continuous work	86°F (30.0°C)	80°F (26.7°C)	77°F (25.0°C)
75 Percent Work – 25 Percent Rest, each hour	87°F (30.6°C)	82°F (28.0°C)	78°F (25.9°C)
50 Percent Work – 50 Percent Rest, each hour	89°F (31.4°C)	85°F (29.4°C)	82°F (27.9°C)
25 Percent Work – 75 Percent Rest, each hour	90°F (32.2°C)	88°F (31.1°C)	86°F (30.0°C)

°C = degrees Celsius.

°F = degrees Fahrenheit.

[a]Consult the ACGIH TLV booklet for definitions of Light, Moderate, and Heavy workloads. Values are given in °F and (°C) WBGT, and are intended for workers wearing single layer summer-type clothing. Use of semi- or totally impermeable clothing requires monitoring IAW the ATI Heat Stress Prevention Program. As workload increases, the heat stress impact on an unacclimatized worker is exacerbated. For unacclimatized workers performing a moderate level of work, the permissible heat exposure TLV should be reduced by approximately 2.5°C.

D.15.2.2 Cold Stress Monitoring Protocol

D.15.2.2.1 Cold temperature extremes can be made more dangerous by water and wind speed. A wind chill chart, Table D-21, should be used to monitor the cooling power of wind on exposed flesh. At temperatures below 32°F, the effects of wind speed become pronounced. The use of a tarp or other barrier should be considered as a contingency to reduce the effects of wind speed.

D.15.2.2.2 The UXOSO will also use meteorological data and Table D-21 to inform site personnel of the combined temperature/wind chill effect to be expected during the day's activities.

D.15.2.2.3 To date, there are no federally mandated regulations related to work/rest schedules. The "15-minute break every 2 hours" is a recommended routine but may not be adequate for all cold environments. The ACGIH has published a work/rest schedule, which is provided in Table D-22. However, this table only applies to, and should be implemented for, temperatures below 0°F. Therefore, for temperatures above 0°F, workers will be encouraged to seek shelter and rest in a warm area whenever they exhibit signs or symptoms of cold stress, as discussed previously.

Table D-21. Cooling Power of Wind on Exposed Flesh Expressed as Equivalent Temperature

	Equivalent Temperature (°F)																	
	Calm	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
W				COLD														
i	5	32	27	22	16	11	6	0	-5	-1-	-15	-21	26	-31	-36	-42	-47	-52
n						VERY COLD												
d	10	22	16	10	3	-3	-9	-15	-22	-27	-34	-40	-46	-52	-58	-64	-71	-77
						BITTER COLD												
S	15	16	9	2	-5	-11	-18	-25	-31	-38	-45	-51	-58	-65	-72	-78	-85	-92
p	20	12	4	-3	-10	-17	-24	-31	-39	-46	-53	-60	-67	-74	-81	-88	-95	-103
e										EXTREME COLD								
e	25	8	1	-7	-15	-22	-29	-36	-44	-51	-59	-66	-74	-81	-88	-96	-103	-110
d	30	6	-2	-10	-18	-25	-33	-41	-49	-56	-64	-71	-79	-86	-93	-101	-109	-116
	35	4	-4	-12	-20	-27	-35	-43	-52	-58	-67	-74	-82	-89	-97	-105	-113	-120
M	40	3	-5	-13	-21	-29	-37	-45	-53	-60	-69	-76	-84	-92	-100	-107	-115	-123
P	45	2	-6	-14	-22	-30	-38	-46	-54	-62	-70	-78	-85	-93	-102	-109	-117	-125
H	WIND CHILL CHART																	

Table D-22. TLV Work/Rest Schedule for 4-Hour Work Shift*

Air Temp.	No Wind		5 MPH Wind		10 MPH Wind		15 MPH Wind		20 MPH Wind	
°F Approx.	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-4° to -8°	Normal	1	Normal	1	Normal	1	Normal	1	Normal	1
-9° to -13°	Normal	1	Normal	1	Normal	1	Normal	1	75 min.	2
-14° to -18°	Normal	1	Normal	1	Normal	1	75 min.	2	55 min.	3
-15° to -19°	Normal	1	Normal	1	75 min.	2	55 min.	3	40 min.	4
-20° to -24°	Normal	1	75 min.	2	55 min.	3	40 min.	4	30 min.	5
-25° to -29°	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-35° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -44°	30 min.	5	Non-emergency Work should cease							
-45° & Below	Non-emergency work should cease									

1. Schedule applies to any 4-hour work period with moderate to heavy work activity, with warm-up cycle in a warm location, and with an extended break in a warm location (e.g., lunch) at the end of the 4 hours. For light-to-moderate work: Apply the schedule one step lower.
2. The following is suggested as a guide for estimating wind velocity if other, more accurate means are not available: 5 mph - light flag moves; 10 mph - light flag fully extended; 15 mph - raises newspaper sheet; and 20 mph - blowing and drifting snow.
3. This table applies only to acclimatized workers with appropriate dry clothing for winter work.

* Adapted from the "1993–1994 Threshold Limit Values and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio.

REFERENCES

1. NIOSH/OSHA/USCG/EPA. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. DHHS (NIOSH) 85-115. Cincinnati, Ohio.
2. American Conference of Governmental Industrial Hygienists (ACGIH). 1992-1993 Threshold Limit Values and Biological Exposure Indices. Cincinnati, Ohio.

D.15.3 Physiological Monitoring Protocols

D.15.3.1 Temperature extremes can affect on-site personnel and the use of PPE. Table D-23 identifies the heat and cold stress disorders, symptoms, and treatment.

D.15.3.2 Heat stress is one of the most common (and potentially serious) illnesses that affect UXO/OE site workers. When site personnel are engaged in operations involving hot environments, a number of physiological responses can occur which may seriously affect the health and safety of the workers. The amount and type of PPE worn directly, influence reduced work tolerance and the increased risk of excessive heat stress. PPE adds weight and bulk, severely reduces the body's access to normal heat exchange mechanisms (evaporation, convection, and radiation), and increases energy expenditure. Therefore, when selecting PPE, each item's benefit should be carefully evaluated in relation to its potential for increasing the risk of heat stress.

D.15.3.3 The effects experienced by site personnel when working in cold environments depend upon many environmental and personal factors, such as ambient air temperature, wind speed, duration of exposure, type of protective clothing and equipment worn, type of work conducted, level of physical effort, and health status of the worker. In cold environments, overexposure can cause significant stress on the body, which can lead to very serious and permanent injury. Cold may affect just the exposed body surfaces and extremities, or may affect the deeper body tissues and the body core.

D.15.3.4 Table D-24 will be used to determine the frequency of physiological monitoring of on-site personnel. The length of the work cycle will be governed by the frequency of the required physiological monitoring. For workers wearing permeable clothing (i.e., standard, cotton work clothes), follow recommendations for monitoring requirements and suggested work/rest schedules in the current ACGIH TLVs for Heat Stress, Table D-24. For workers in Tyvek™ suits, work/rest schedules will be adjusted in accordance with physiological monitoring requirements.

D.15.4 Prevention Protocols

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat exhaustion, that person may become predisposed to additional heat injuries. In order to avoid heat-related illnesses, proper preventive measures will be implemented whenever environmental conditions dictate. These preventive measures represent the minimal steps to be taken and will include the following procedures:

D.15.4.1 Heat Stress Preventive Measures

D.15.4.1.1 The UXOSO will examine each site worker prior to the start of daily operations to determine the individuals susceptible to heat-induced stress. Workers exhibiting factors, which make them susceptible to heat stress, will be closely monitored by the UXOSO.

D.15.4.1.2 Site workers will be trained to recognize and treat heat-related illnesses. This training will include the signs, symptoms, and treatment of heat-stress disorders.

D.15.4.1.3 In order to maintain workers' body fluids at normal levels, workers will be encouraged to drink, as a minimum, approximately 16 ounces of liquids prior to start of work in the morning, after lunch, and prior to leaving the site at the conclusion of the day's activities. Disposable, 4- to 12-ounce, cups and liquids will be provided on-site. Liquids to be provided will include water and an electrolyte replacement solution, with the intake of each being equally divided. Liquids containing caffeine are to be avoided.

D.15.4.1.4 When ambient conditions and site workload requirements dictate, as determined by the UXOSO, workers will be required to drink a minimum of 16 to 32 ounces of liquids during each rest cycle. The normal thirst mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost sweat. When heavy sweating occurs, workers will be encouraged to drink even though they may not be thirsty.

D.15.4.1.5 A shelter or shaded area will be provided where workers may be protected from direct sunlight during rest periods.

D.15.4.1.6 Monitoring of ambient or physiological heat stress indices will be conducted to allow prevention and/or early detection of heat-induced stress.

D.15.4.1.7 Site workers will be given time to acclimatize to site work conditions, temperature, protective equipment, and workload. Acclimatization is the adaptive process that results in a decrease of the physiological response produced by the application of a constant environmental stress.

D.15.4.1.8 On initial exposure to a hot environment, there is an impaired ability to work and evidence of physiological strain. If the exposure is repeated on several successive days, there is a gradual return of the ability to work and a decrease in physiological strain.

D.15.4.1.9 Acclimatization usually takes two to six days of continued work in hot environments, and allows the worker's body to become adjusted to this level and type of work. This process involves a gradual increase in the workload over the required period, the length of which depends upon the nature of the work performed, the ambient temperatures, and the individual's susceptibility to heat stress. The results of acclimatization include: subjective discomfort practically

disappears; body temperature and heart rate are lower; there is a more stable blood pressure; and the sweat is more profuse and dilute.

D.15.4.1.10 Work schedules will be adjusted as follows:

- Modify work/rest schedules according to monitoring requirements outlined in Table D-22.
- Mandate work slowdowns as needed.
- Rotate personnel: Alternate job functions to minimize overstress or overexertion at one task.
- Add additional personnel to work teams.
- Perform work during cooler hours of the day if possible.
- Workers will be encouraged to achieve and maintain an optimum level of physical fitness. Increased physical fitness will allow workers to better tolerate and respond to hot environments and heavy workloads. In comparison to an unfit person, a fit person will have less physiological strain, a lower heart rate and body temperature, and a more efficient sweating mechanism.
- Alcohol should not be consumed in a hot environment because the loss of body fluids increases the risk of heat stress.

Table D-23. Heat and Cold Disorders, Symptoms, and Treatment

Disorder	Symptoms	Treatment
	Heat Stress	
Heat Rash. Caused by continuous exposure to heat and humid air and is aggravated by wet, chafing clothing. This condition can decrease a worker's ability to tolerate hot environments.	Mild red rash, especially in areas of the body that sweat heavily.	Decrease amounts of time in protective gear and provide powder, such as cornstarch or baby powder, to help absorb moisture and decrease chafing. Maintain good personal hygiene standards and change into dry clothes if needed.
Heat Cramps. Caused by a profuse rate of perspiration that is not balanced by adequate fluid and electrolyte intake. The occurrence of heat-related cramps is often an indication that excessive water and electrolyte loss has occurred, which can further develop into heat exhaustion or heat stroke.	Acute, painful spasms of voluntary muscles such as the back, abdomen, and extremities.	Remove victim to a cool area and loosen restrictive clothing. Lightly stretch and gently massage affected muscles to increase blood flow to the area. Have patient drink one to two cups of liquids immediately, and every 20 minutes thereafter. Consult with physician if condition does not improve. If available, an electrolyte replacement solution should be taken along with liquids.
Heat Exhaustion. Heat exhaustion is a state of weakness or exhaustion caused by stress on various organs to meet increased demands to cool the body. This condition leads to inadequate blood supply and cardiac insufficiency. Heat exhaustion is less dangerous than heat stroke, but nonetheless must be treated. If allowed to go untreated, heat exhaustion can quickly develop into heat stroke.	Pale or flushed, clammy, moist skin, profuse perspiration, and extreme weakness. Body temperature is basically normal or slightly elevated, the pulse is weak and rapid, and breathing is shallow. The individual may have a headache, be dizzy, or nauseated.	Remove the individual to a cool, air-conditioned place, loosen clothing, elevate feet, and allow individual to rest. Consult physician, especially in severe cases. Have patient drink one to two cups of liquids immediately, and every 20 minutes thereafter. Total liquid consumption should be about one to two gallons per day. If the signs and symptoms if heat exhaustion do not subside, or become more severe, immediate medical attention will be required.
Heat Stroke. An acute and dangerous reaction to heat stress caused by failure of the heat-regulating mechanisms of the body. The failure of the individual's temperature control system causes the perspiration system to stop working correctly. When this occurs, the body core temperature rises very rapidly to a point (105+ºF) where brain damage and death will result if the person is not cooled quickly.	The victim's skin is hot, and may or may not be red and dry, due to the fact that the individual may still be wet from having sweated while wearing protective clothing earlier. Other symptoms include nausea, dizziness, confusion, extremely high body temperature, rapid respiratory and pulse rate, delirium, convulsions, unconsciousness, or coma.	Cool the victim immediately. If the body temperature is not brought down quickly, permanent brain damage or death may result. The victim should be moved to a shady area; he/she should lie down and the head be elevated. Cool the victim by either sponging or immersing the victim in very cool water to reduce the core temperature to a safe level (<102ºF). If conscious, give the victim cool liquids to drink. Observe the victim and obtain immediate medical help. Do not give the victim caffeinated or alcoholic beverages. Medical help should be summoned

Table D-23. Heat and Cold Disorders, Symptoms, and Treatment (continued)

Disorder	Symptoms	Treatment
	Cold Stress	
Immersion Foot or Trench Foot. Immersion foot usually results from prolonged exposure when air temperatures are above freezing, whereas trench foot normally occurs from shorter exposure at temperatures near freezing.	The symptoms for each disorder are similar and include tingling, itching, swelling, pain in some cases or numbness in others, lack of sweating, and blisters.	Bring the deep body core temperature back to its normal temperature of about 98.6ºF slowly. Workers exhibiting symptoms should be brought to a warm area and allowed to rest and warm up. If a worker's clothing becomes wet, which reduces its insulation effect, it should be removed and replaced by dry clothing, or allowed to dry before resuming work. A warm, non-alcoholic, de-caffeinated drink (not coffee), or soup, may be given.
Hypothermia. Hypothermia results when the body loses heat faster than it can produce it. When this occurs, the blood vessels in the skin and extremities constrict, reducing the flow of warm blood to those areas, thereby reducing the rate of heat loss. This reduction in blood flow usually affects the peripheral extremities first.	Ears, fingers, and toes begin to experience chilling, pain, and then numbness due to loss of both blood flow and heat. Shivering begins as the body's core temperature begins to drop. The pain and numbness in the extremities is an indication that heat loss is increasing.	See above.
Frostbite. Frostbite occurs when there is actual freezing of the water contained in the body tissues. This usually occurs when temperatures are below freezing, but excessive wind can result in frostbite even at ambient temperatures that are above freezing.	Frostbite tissue damage can be superficial, near the surface of the skin, or extend to deeper body tissues, which can cause severe tissue damage. The skin may first have a prickly or tingling sensation and later become numb with cold, and the appearance may range from superficial redness of the skin to white, hard, frozen-looking tissues.	See above.
Frost Nip. Frost nip or incipient frostbite is the condition characterized by sudden blanching or whitening of the skin.	The skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient.	The victim should be sheltered from the wind and cold and given warm drinks. If the frostbite is superficial, the frozen part should be covered with extra clothing or blankets or warmed against the body. Do not use direct heat, and do not pour hot water over or rub the affected area. Warming should be gentle and gradual. If the frostbite is deep, i.e., the affected area is frozen and hard to the touch, immediate medical attention should be obtained. The safe thawing of deep frostbite is beyond the on-site expertise.

Table D-24. Suggested Frequency of Physiological Monitoring for Fit and Acclimatized Workers

Adjusted Temperature[a]	Normal Work Ensemble[b]	Impermeable Ensemble
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°-90°F (30.8°-32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°-87.5°F (28.1°-28.1°C)	After each 90 minutes of work	After each 60 minutes of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 minutes of work	After each 120 minutes of work

°C = degrees Celsius.
°F = degrees Fahrenheit.
Note: For work levels of 250 kilo calories/hour.
[a]Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 × % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 Percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)
[b]A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

D.15.4.2 Cold Stress Preventive Measures

During work in the winter months, the UXOSO will use the tailgate safety briefing to inform site personnel of the measures to be utilized in the prevention and control of cold stress. The UXOSO will also use meteorological data and current site conditions to inform site personnel of the expected weather effect to be expected during the day's activities. Prevention methods, which site personnel shall utilize include:

1. Use the "Buddy System" to keep aware of each team-members physical condition.

2. Eat well-balanced meals and maintain adequate intake of non-alcoholic, decaffeinated fluids.

3. Wear adequate, appropriately layered clothing, including a water-repellent outer layer, if precipitation is forecasted.

4. Wear a hat and gloves to help retain body heat. (When working with static sensitive materials, 100% cotton is recommended.)

5. Remove outer layers of clothing during breaks in a sheltered location to prevent excessive sweating.

6. In windy, cold conditions, cover all exposed skin.

7. Protect clothing from getting wet. This includes keeping clothing from getting wet with sweat, so remove outer layers if work activities cause excessive sweating.

8. Seek shelter in a warm, protected area when signs and symptoms of cold stress become evident.

9. ATI will assist in the prevention of cold stress by providing sheltered, dry areas where site personnel can rest and regain body heat during breaks.

10. To date, there are no federally mandated regulations related to work/rest schedules. The "15-minute break every 2 hours" is a recommended routine but may not be adequate for all cold environments. For temperatures above 0ºF, workers will be encouraged to seek shelter and rest in a warm area whenever they exhibit signs or symptoms of cold stress, as discussed previously.

D.15.5 Heat/Cold Stress Documentation

The UXOSO will be responsible for recording all heat/cold stress-related information. This will include training sessions and monitoring data. Training sessions will be documented on the "Documentation of Training" form, and WBGT data and other information will be recorded in the Safety Log.

D.16 Standard Operating Procedures, Engineering Controls, and Work Practices

The procedures and guidelines detailed in this appendix are to be adhered to by all personnel performing project activities at the Former Five Points OLF. These procedures and guidelines are provided to ensure a safe work environment for all workers on-site.

D.16.1 As Low As Reasonably Achievable (ALARA) Policy

The ATI policy is to maintain exposures to hazardous UXO, and chemical, physical, or biological hazards at levels that are as low as reasonably achievable (ALARA). ALARA is achieved through proper training of employees, adequate work procedures, adequate engineering controls, good personal hygiene practices, and, when required, use of protective equipment. Each individual working in a restricted area is required to adhere to established ALARA rules, regulations, and concepts outlined in this SSHP. ALARA applies to all phases of the operation and should be considered from the planning phase through to the project's completion. ALARA policies will be re-evaluated and updated by the SUXOS, UXOSO and Safety Manager, as required by changes in site conditions.

D.16.2 Standard Operating Procedures

D.16.2.1 Personnel Practices

Safe practices can reduce hazards due to normal site activities. Personnel must keep the prudent guidelines listed below in mind when conducting field activities. General personnel requirements include:

1. Horseplay or fighting is prohibited.
2. Eating, drinking, smoking, chewing gum, tobacco, or any other hands-to-face activities are prohibited on-site, except in designated areas after both face and hands have been washed.
3. Wearing contact lenses is prohibited in the EZ.
4. When required to sit or kneel on the ground, avoid contaminated surfaces.
5. Placing equipment on contaminated surfaces should be avoided.
6. Climbing on or over obstacles is prohibited. Stacks of materials can be unstable and could cause injury.
7. Open flames of any type are prohibited on-site.
8. Bringing defective or unsafe equipment on-site is prohibited.

9. Only authorized employees may enter the work site. Visitors must check in with the UXOSO, receive an appropriate safety briefing, and be escorted by UXO/qualified personnel at all times while on-site.

10. Hazard assessment is a continuous process. Personnel must be aware of their surroundings and constantly be aware of the UXO, chemical, and physical hazards that are, or may be, present.

11. The number of personnel in the EZ will be the minimum number necessary to perform work tasks in a safe and efficient manner.

12. Team members will be familiar with the physical characteristics of each site including wind direction, site access, and the location of communication devices and safety/emergency equipment.

13. The location of overhead power lines and underground utilities must be established.

14. Detection or appearance of unusual liquids, odors, or discolored soil could indicate the presence of contaminants and should be reported to the UXOSO immediately.

15. Site personnel are to report any other unusual or potentially hazardous condition to the UXOSO for investigation and/or corrective action.

D.16.2.2 Buddy System Protocol

The buddy system is a safety practice in which each individual is concerned with the health and well being of co-workers. The buddy system will be implemented during all on-site activities and will be incorporated whenever workers may be isolated or as determined by the UXOSO. The SUXOS will assign "buddies" to ensure accounting of all site personnel. Additional procedures include:

1. A minimum of two personnel, with one being a UXO qualified person, will be present during all OE operations so that one person will always act as a safety observer. During all OE operations, only the minimum number of personnel required to safely perform the task will be allowed on-site. All others will evacuate to a pre-designated assembly point.

2. At no time will an individual desert his "buddy" unless his "buddy" goes down, and it is considered too hazardous to render assistance. "Buddies" will enter and exit EZ together and frequently monitor one another for signs of fatigue, heat stress, and any other problems. In such cases, the worker in danger may not even be aware he/she is having a problem. The "buddy" must always be alert to changes in the behavior of his "buddy" so that he can remove him from the situation immediately.

3. "Buddies" should inspect each other's equipment, including PPE, to ensure that it is adequate and in proper working order.

D.16.2.3 Equipment Use Procedures

Equipment use will be subject to the following procedures:

1. Heavy equipment utilized on-site will be operated under strict adherence to the applicable OSHA regulations found in OSHA 29 *CFR* 1910; OSHA 29 *CFR* 1926; the requirements of USACE EM 385-1-1, Section 16; and the ATI Safety Program.

2. The requirements outlined in USACE EM 385-1-1, Section 13, will be observed when using hand tools.

3. To control the hazards associated with power tool operation, the requirements outlined in USACE EM 385-1-1, Section 13, and the safe work practices will be observed.

D.16.2.4 Material Handling Procedures

Many types of objects are handled in normal day-to-day operations. Care will be taken in lifting and handling heavy or bulky items because they are the cause of many joint and back injuries. The following fundamentals address the proper lifting of materials to avoid joint and back injuries:

1. The size, shape, and weight of the object to be lifted must be considered. Site personnel will not lift more than they can handle comfortably.

2. A firm grip on the object is essential; therefore, the hands and object will be free of oil, grease, and water, which might prevent a firm grip.

3. The hands, and especially the fingers, will be kept away from any points that cause them to be pinched or crushed, especially when setting the object down.

4. The item will be inspected for metal slivers, jagged edges, burrs, rough or slippery surfaces, and pinch points, and gloves will be used, if necessary, to protect the hands.

5. The feet will be placed far enough apart for good balance and stability.

6. Personnel will ensure that solid footing is available prior to lifting the object.

7. When lifting, get as close to the load as possible, bend the legs at the knees, making sure that the back is kept as straight as possible.

8. To lift the object, the legs are straightened from their bending position.

9. Never carry a load that cannot be seen over or around.

10. When placing an object down, the stance and position are identical to that for lifting, with the back kept straight, the legs bent at the knees, and the object lowered.

11. If the item to be lifted is too large, bulky, or heavy (over 50 lb) for one person to safely lift, ask a co-worker for assistance. If a piece of material handling equipment is available that can do the job, the employee should use the equipment instead of trying to lift the object himself/herself.

12. When two or more people are required to handle an object, coordination is essential to ensure that the load is lifted uniformly and that the weight is equally divided between the individuals carrying the load. When carrying the object, each person, if possible, will face the direction in which the object is being carried.

D.16.2.5 Drum/Container Handling Procedures

D.16.2.5.1 Material handling devices shall be available for the movement of drums or containers when required.

D.16.2.5.2 Whenever heavy or bulky material is to be moved, the material handling needs shall be evaluated in terms of weight, size, distance, and path of movement.

D.16.2.5.3 The following hierarchy shall be followed in selecting a means for material handling:

a. Elimination of material handling needs by engineering,

b. Movement by mechanical device (e.g., lift truck, overhead crane, or conveyor),

c. Movement by manual means with handling aid (e.g., dollie or cart), or

d. Movement using safe lifting techniques.

D.16.2.5.4 Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects.

D.16.2.5.5 Where the movement of materials may be hazardous to persons, taglines or other devices shall be used to control the loads being handled by hoisting equipment. These devices shall be nonconductive when used near energized lines.

D.16.2.6 Hot Work, Sources of Ignition, Fire Protection/Prevention, and Electrical Safety Procedures

Under the SOW and activities anticipated for this tasking, there are no requirements for hot work. All site personnel, to eliminate the hazards from ignition sources, will utilize the general, fire safety precautions and procedures outlined in Section D.12.4 of the Work Plan.

D.16.2.7 Lockout/Tagout Procedures

The SOW for this project is to safely locate, identify, and make final disposition of all OE and OE-related scrap from the site. There will be no activities involving the servicing or maintenance on a system where the unexpected energizing, start-up, or release of kinetic or stored energy could occur and cause injury or damage to workers.

D.16.2.8 Fall Protection Procedures

The SOW for this project is to safely locate, identify, and make final disposition of all OE and OE-related scrap from the site. There will be no activities performed, which meet the requirement for fall protection.

D.16.2.9 Container Labeling Procedures

The UXO Safety Officer will inspect all on-site chemicals to ensure that they are properly labeled with a National Fire Protection Association (NFPA) label, or equivalent information, during the duration of their use at the job site. Any containers, which are missing labels or are transferred into other containers for use, will be labeled with a NFPA label or equivalent information.

D.16.2.10 Illumination Procedures

Conducting UXO/OE operations in poorly illuminated conditions is inherently dangerous. There will be no UXO/OE operations conducted during the hours of darkness.

D.16.2.11 Housekeeping and Waste Disposal Procedures

Specific procedures are defined as:

1. A clear path of ingress/egress to the work site will be prepared and maintained.

2. All equipment and working surfaces will be cleaned and decontaminated after contact with blood or other potentially infectious materials.

3. Contaminated work surfaces and equipment will be decontaminated with an appropriate disinfectant immediately after they become contaminated in accordance with the decontamination section of this program.

4. Regulated waste will be placed in containers, which are capable of being sealed, constructed to contain all contents and prevent leakage, properly labeled or color-coded, and closed prior to removal or replacement. Labels or color-coding will be fluorescent orange or orange-red and display the biohazard symbol in a contrasting color.

5. Contaminated clothing, equipment, and other materials will be handled as little as possible and with minimum agitation. Bags containing contaminated materials will not be carried or handled from the bottom.

6. All regulated waste will be disposed of in accordance with applicable federal, state, and local regulations.

D.16.2.12 Sanitation Procedures

D.16.2.12.1 Adequate sanitation facilities will be provided at each work site to ensure proper personal hygiene. Site sanitation will be established and maintained in accordance with OSHA 29 *CFR* 1910.120(n) and USACE EM 385-1-1, Section 2. In particular:

D.16.2.12.2 Temporary toilet facilities will be provided in the work areas of the site. Chemical toilets will be used in these locations and will be serviced every week. Each temporary toilet will be naturally lighted, have a toilet seat with a seat cover, have a urinal, have ventilation with vents screened, and be lockable from the inside. There will be at least one toilet for every 15 workers at the work site, if required.

D.16.2.12.3 Hand and face washing facilities will be set up at the ATI work site and will be utilized by all personnel exiting the EZ prior to eating, drinking, tobacco use, or other hand-to-face activities. Paper towels will be provided for drying. A trash receptacle will be provided for discarded paper towels. In accordance with ANZI Z358.1-1998, eye-wash facilities will be available on the work site where operations in any of the work zones involve handling substances, which could be hazardous to the eyes. An eyewash kit will also be located in each site vehicle.

D.16.2.12.4 An adequate supply of potable (drinkable) water will be provided on-site at all times. As there are no drinking water facilities on most areas of the site, drinking water will be available in the ATI office, and water will be brought in coolers to the work areas of the site and supplied in accordance with the following provisions: Containers used for potable water will be capable of being tightly closed, equipped with a tap, and maintained in a clean and sanitary condition. A container used for distribution of drinking water will be clearly labeled as to its contents and not used for any other purpose. Water will not be dipped from the container, and use of a common cup will not be allowed. Where single service cups are provided, separate sanitary containers will be provided for the storage of the unused cups and for the disposal of the used cups.

D.16.2.12.5 Outlets and storage containers for non-potable water, such as water for fire fighting or decontamination, will be clearly labeled to indicate that the water is not suitable for drinking, washing, or cooking. There will, at no time, be a cross-connection or open potential between a system furnishing potable water and a system furnishing non-potable water.

D.16.3 Engineering Controls

Engineering controls will be used, whenever possible, to eliminate or reduce the potential for employee exposure and will be periodically examined, maintained, or replaced to ensure their effectiveness.

D.16.4 Work Practices

D.16.4.1 General Work Practices

General work practices include the following:

1. Safe work practices will be implemented whenever possible to eliminate or reduce the potential for employee exposure.

2. Employees will wash their hands immediately or as soon as feasible after removal of gloves or other PPE.

3. Employees will wash hands and any other skin with soap and water, or flush mucous membranes with water immediately following contact with blood or potentially infectious materials.

4. If potentially contaminated sharps are encountered, the item will immediately be disposed of in an appropriate container or decontaminated.

5. Eating, drinking, smoking, applying cosmetics or lip balm, handling of contact lenses, or storage/handling of food are prohibited in all areas where potentially infectious materials are present.

6. Equipment that has become contaminated will be decontaminated prior to servicing or storage, unless decontamination is not feasible, in which case the equipment will be disposed of properly.

D.16.4.2 UXO Safety Work Practices

D.16.4.2.1 All UXO/OE operations will be conducted in accordance with the requirements of the U.S. Army Corps of Engineers, EP 385-1-95a, *Basic Safety Concepts and Considerations for Ordnance and Explosives (OE) Operations* (29 June 2001).

D.16.4.2.2 Plans are to be based upon the minimum number of personnel, exposed for the minimum amount of time, to the minimum amount of UXO consistent with efficient operations and maximum safety. Only those personnel absolutely necessary to the operation will be allowed in the EZ during UXO activities.

D.16.4.2.3 All personnel engaged in UXO operations will be thoroughly trained in explosives safety and be capable of recognizing hazardous explosive exposures. Only personnel who are U.S. citizens and graduates of one of the schools or courses outlined in DID OE-025.01 are authorized to handle UXO.

D.16.4.2.4 All non-UXO qualified personnel will follow the safe work practices listed below:

1. Non-UXO qualified personnel will receive site-specific UXO recognition training prior to participation in site activities.

2. No soil-penetrating activities will be allowed without the area first being cleared by UXO qualified personnel.

3. Non-UXO qualified personnel will be escorted on-site by UXO qualified personnel, until such time as the area is cleared.

4. Non-UXO qualified personnel will not touch or disturb any fused object that could potentially be UXO/OE related, and will immediately notify the nearest UXO qualified person of the presence of the object.

5. The greatest hazard to a UXO technician is complacency. It is imperative that team members are constantly reminded of the inherent dangers associated with UXO. This will be accomplished at the Tailgate Safety Briefings.

6. No UXO will be destroyed until it has been positively identified.

7. If an unidentifiable OE is found, or suspected toxic chemical munitions are found, the on-site USACE OE Safety Specialist will request EOD support.

8. Do not handle, use, or remain near explosives during the approach or progress of an electrical storm, sandstorm, dust storm, snowstorm, or during any limited-visibility condition. All personnel should retire to the enclosed ATI site vehicles until the storm has passed or the ATI site office.

9. Intrusive activities must be preceded by a magnetometer survey to ensure the safety of the crew.

10. Use sand to smother incendiary fires. Water may induce a violent reaction or be completely ineffective, depending on the mixture. Sand will be available on-site for this purpose.

D.16.4.3 Demolition Operations

Demolition operations procedures will be accomplished in accordance with the Demolition and Post Demolition Operations Procedures outlined in Chapter 2.0 of the Work Plan and the safety precautions listed below:

1. The demolition and post-demolition operations procedures will be readily available in work areas involved in demolition operations. Supervisory personnel are responsible for the enforcement of its provisions.

2. In the event of an electrical storm, action will be taken to cease all demolition range operations and evacuate the area.

3. All personnel are responsible for reporting all injuries, accidents, and near-miss incidents to their supervisors. The supervisor is, in turn, responsible for reporting all injuries, accidents, and near-miss incidents to the UXOSO. These incidents will be reported, by the UXOSO, to the Safety Manager and the PM. All such events will be thoroughly investigated by the Supervisor and the UXOSO to determine the root cause(s) and appropriate actions to be taken to prevent recurrence.

4. In the event of a fire or unplanned explosion, if possible, put out the fire if no UXO or OE is involved. Fire extinguishers are to be available at each site for this purpose. If unable to do so, notify the police and fire department POCs in Table D-19 or Appendix C.

5. Employees will not tamper with any safety devices or protective equipment.

6. Any defect or unusual condition noted that is not covered by this procedure will be reported immediately to supervisory personnel.

7. All safety regulations applicable to specific materials involved will be observed.

8. The demolition activities will be under the direct control of an experienced and trained UXO supervisor with responsibility for all activities within the demolition area.

9. Fire extinguishers and first aid equipment will be readily available during all demolition and post-demolition operations.

10. Personnel who will be handling OE items will not wear outer or inner garments having static-electricity-generating characteristics. Material made of 100-percent polyester, nylon, silk, and wool is highly static producing.

11. Observers will be stationed at locations where there is a good view of the air, rail, and surface approaches to the demolition area before material is detonated. It will be the responsibility of the observers to order the Supervisor to suspend firing if any aircraft, trains, vehicles, or personnel are sighted approaching the general demolition area.

12. Special safety requirements for demolition activities include:

    - Fragmentation range for this site will be based upon the MPM anticipated on the site. The SUXOS will designate a fragmentation range for each item based on technical publication recommendations for distance requirements on the item in question. This will be coordinated with the USACE on-site Safety Specialist prior to the demolition operation.

    - Material awaiting destruction will be staged at not less than intra-line distance, based on the largest quantity involved, from adjacent explosive

materials and from explosives being destroyed. The material will be protected against accidental ignition or explosion from fragments, grass fires, burning embers, or detonating impulse originating in materials being destroyed.

- Blasting or demolition operations will not be conducted during an electrical storm or when a storm is approaching. All operations will be suspended, detonator wires and lead wires will be short-circuited, and all personnel must be removed from the demolition area to the ATI site office when an electrical storm approaches within 10 miles of the site. A security person will be staged at a safe distance from any charge left in place, to maintain security and prevent unauthorized personnel from going near explosive materials.

- Detonations will be counted to ensure detonation of all pits. After a series of detonations, a search will be made of the surrounding area for kick-outs. Items such as lumps of explosives may be picked up and prepared for the next shot. Fused munitions or items that may have internally damaged components will be detonated in placed, if possible.

- In excavating the pits, contour the ground so that runoff water is kept out of the pits.

- Upon completion of the project, the disturbed ground will be thoroughly inspected for UXO/OE. At a minimum, the holes/pits will be filled in and contoured.

D.17 Accident Prevention

D.17.1 Plan for the Prevention of Alcohol and Drug Abuse

D.17.1.1 Introduction

D.17.1.1.1 The Drug-Free Workplace Act of 1988 set as a goal the elimination of the effects of illegal drugs in the workplace. Due to the inherently hazardous nature of the work performed by ATI personnel, the importance of creating and maintaining a safe drug-free working environment is paramount. The performance of every employee must, at all times, support the company's mission to conduct site operations with a high level of productivity, reliability, judgment, and safety.

D.17.1.1.2 American Technologies, Incorporated (ATI) maintains a commitment to provide reliable service to customers, and a safe and healthy work environment for its employees. While the vast majority of employees are not involved with illegal drugs or alcohol abuse, those who are involved in usage or trafficking, on or off the job, have an adverse impact on the work place and impair our ability to maintain a safe work environment that is free from the effects of drugs or alcohol. While ATI understands employees under a physician's care are required to use prescription drugs, abuse of prescribed medications will be dealt with in the same manner as the abuse of illegal substances.

D.17.1.1.3 As a term of employment, maintenance of these standards is expected of all employees, and all employees will refrain from the use, distribution, possession, manufacture, or dispensing of a controlled substance, and drug and/or alcohol abuse. Violation of this policy will result in administrative action to include the possible termination of employment.

D.17.1.1.4 Recognizing that there may be employees who have a drug or alcohol problem, the Company stands willing, to assist in the resolution of that problem and encourages employees to seek help through the Employee Assistance Program (EAP). This program may be of assistance to employees in the following ways:

Self-Referral - The employee recognizes the need for professional help and refers them self. It is the responsibility of each employee to seek assistance from the EAP before alcohol or drug problems lead to disciplinary actions. Once a violation of this policy occurs, subsequently using the EAP on a voluntary basis will not necessarily lessen disciplinary action.

OR

Supervisory Referral - The supervisor recognizes an employee’s need for professional help through behavioral or job performance changes and refers employer to the EAP.

D.17.1.2 Substance Use and Abuse Policy

Employee drug or substance use or abuse testing/screening conducted by ATI in support of this policy will be conducted at no expense to the employee. The drug or substance use for which ATI may conduct testing includes, but are not limited to: amphetamines, barbiturates, cocaine metabolites, methadone opiates phencyclidine (PCP), and ethyl alcohol. As a matter of policy, ATI will strictly implement and enforce the policies listed below:

1. The illegal use, possession, sale, distribution, or manufacture of illegal drugs, narcotics, or controlled substances while on or off the job is strictly prohibited.

2. Illegal drug usage, whether on or off the job, may adversely affect an employee's job performance, jeopardize the safety of other employees, the public, and/or the reliability of the Company's operations, and is just cause for disciplinary action up to and including termination of employment.

3. If an employee reports to work in a condition giving a supervisor reasonable cause to suspect the influence of alcohol, the employee may be required to submit to a blood and/or urine exam, and if the test reveals that the employees under the influence of alcohol, the employee may be subject to disciplinary action up to and including termination of employment.

4. If an employee reports to work in a condition giving a supervisor reasonable cause to suspect the influence of drugs, the employee may be required to submit to a blood and/or urine exam, and if the test reveals that the employee has illegal drugs or other hallucinogens in his or her body, the employee may be subject to disciplinary action up to and including termination of employment.

5. Any employee who may be undergoing medically prescribed treatment with a controlled substance, which may limit the employee's ability to perform on the job must report this treatment to the Human Resource Manager prior to beginning work or when the person begins treatment with the controlled substance. Failure to report this to the Human Resources manager shall be just cause for appropriate disciplinary action.

D.17.1.3 Prescription Medications

D.17.1.3.1 ATI project personnel may possess and use prescription medications and "over-the-counter" medications provided that all of the following apply:

1. The prescription medication has been prescribed by an authorized medical practitioner for the current use (within the past 12 months) of the employee in possession of the medication, and the medication is in its original container with a valid pharmacy label including the employee's name and the physician's name.

2. The employee does not consume the prescribed, or over-the-counter, medication in quantities greater than, or more frequently than that prescribed by the container label.

3. Employees in possession of prescribed medications shall not allow any other person to consume any amount of their prescribed medication.

4. In the event that the prescribed medication could cause adverse side effects, or where the medication indicates warnings relevant to side effects affecting the operation of equipment or machinery, the employee shall inform the SUXOS and/or UXOSO prior to engaging in project operations while under the influence of the medication (i.e., having taken the medication within the past 12 hours).

D.17.1.3.2 While the on-site use of prescription and over-the-counter medications is authorized, under the requirements listed above, ATI reserves the right to have a licensed physician determine if the employee's use of the medication could adversely affect the individual or could increase the potential for injury or illness to the employee or other site personnel. If consumption of the medication could lead to adverse safety or health effects, the ATI Safety Office may, on the advice of the licensed physician, limit or suspend the employee's work activities for as long as the licensed physician indicates that the medication may adversely affect the employee. Any employee who has been limited or suspended from work activities may seek from the prescribing physician a substitute medication that will not adversely affect the potential for injury or illness to the employee or other site personnel. If a suitable substitute can be prescribed, and is approved, the ATI Safety Office may lift the work activity suspension or limitation.

D.17.1.4 Suspicion Inspections and Testing

The intent of the guidelines is to provide managers, supervisors and employees the necessary education, training and information to administer the policy fairly, consistently, and in accordance with this policy. If questions arise, the ATI Human Resources Manager should be contacted for guidance.

D.17.1.4.1 Suspicion Inspections

For the purposes of ensuring compliance with the prohibition against the unauthorized possession of controlled substances, employees will be subject to random and reasonable suspicion inspections and testing. An employee's company clothing, locker, closet, work area, desk files, company motor vehicle, and similar areas are subject to inspection. Similarly, an employee's privately owned vehicle, lunch box, and like containers are subject to such inspections when brought to any work site. At no time will an employee be physically touched during an inspection, and only outer clothing required to be removed for inspection or search. No person or property search (except for searches of ATI-owned, rented, or leased properties), urine drug test, or Breathalyzer test will be

conducted without the employee's consent. Refusal to submit to a legal inspection, or request for testing, will result in employee removal from participation in site activities until further inspection or testing can determine the potential for prohibited drug or substance use or abuse.

D.17.1.4.2 Drug/Alcohol Screening

D.17.1.4.2.1 Drug Alcohol screens may be administered only by a qualified laboratory or an approved physician. Random testing will be administered primarily to those employees in sensitive positions, but reasonable suspicion is grounds for any employee to be tested.

D.17.14.2.2 The employee may request that a steward be present to witness the screening process to insure the employee's specimen and to insure the chain of custody of the specimen. Employees may request independent testing of the same sample by another laboratory approved by the State Department of Health and Mental Hygiene in order to verify the test results, but the cost of such tests will be borne by the employee.

D.17.1.4.2.3 Drug screens may also be administered with any company Physical.

D.17.1.4.2.4 Refusal to take a drug screen will result in discharge.

D.17.1.4.2.5 A positive drug test will result in the Human Resources Manager informing, the employee that there is a confirmed positive test. The employee will be given a phone number to call immediately for a counseling appointment at no cost to the employee. If the employee has failed to make an appointment within two working days, appropriate disciplinary action will be taken up to and including termination.

D.17.1.4.2.6 The counseling and referral service will determine during the initial appointment if a substance problem exists and the extent of the problem. A determination will be made to refer the employee to an outpatient, inpatient treatment, or no treatment indicated.

D.17.1.4.2.7 Employee will be allowed to use available accrued sick leave or authorized leave of absence while undergoing treatment.

D.17.1.4.2.8 Treatment programs are covered to a limited degree through the Company's health plan. Disability insurance may be applied for during the period of treatment. Both kinds of insurance coverage apply to fully benefited employees only.

D.17.1.4.2.9 The Human Resources Manager will be provided periodic updates on the treatment progress of the employee.

D.17.1.4.2.10 If the employee is referred to the inpatient treatment facility, their position (job) may be held open pending their return at the completion of the treatment program.

D.17.1.4.2.11 If the employee is referred to an outpatient program, and allowed to remain on the job while undergoing, rehabilitation, dependent upon the severity and depth of the substance dependency, as determined by initial assessment counseling, and upon advice of the counseling professional, the Human Resources Manager may, in consultation with the Program Manager order the employee to be placed in administrative duties until sufficient rehabilitation has occurred as specified by the treating agency in writing.

D.17.1.4.2.12 Following rehabilitation, treatment, and the employee's return to full duties, the employee may be subject to random testing by the employer based on reasonable suspicion.

D.17.1.4.2.13 A second positive test result during the term of employment.

D.17.1.5 Voluntary Treatment

Nothing in this program shall prohibit employees from voluntarily seeking counseling and treatment.

D.17.1.6 Drug Convictions

Any employee convicted of violating a criminal drug or alcohol statute will report in writing the facts surrounding the conviction and sentence to their immediate supervisor within five calendar days of the conviction. The supervisor will forward the written results immediately to the ATI Safety Office, ATI Human Resources and PM, via the supervisory chain, and a written report of the conviction will be made within ten calendar days to all government agencies with which the company has contracts. Upon notification of conviction, the ATI Safety Office, ATI Human Resources, PM, and SUXOS will review the report and will, within thirty days after being informed, determine the disciplinary action to be taken. The disciplinary action taken may range from termination of employment to mandatory assignment to a rehabilitation program.

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D.18 Emergency Equipment and First Aid Requirements

D.18.1 General

Table D-25 lists emergency equipment, which will be maintained on site and available for use during site operations. Emergency equipment shall be maintained in proper working order and checked by assigned personnel daily. It will be the responsibility of the UXOSO to maintain the site emergency equipment in good working order. The UXOSO will inspect all emergency equipment at least weekly to ensure completeness and proper working condition. Any time that emergency equipment is used, will be reported to the UXOSO so that those items used can be replaced immediately. Site operations shall not be allowed to continue if the required emergency equipment is not immediately available on site.

D.18.2 First Aid Kits

First aid kits are assigned by the ATI Safety Office and approved by the Occupational Health Physician. The size and number of first aid kits shall be sufficient to accommodate the maximum number of people on site at any given time. First aid kits will be located in all operational vehicles, each team, and the site office. A large medical kit, with trauma supplies, will be located with the UXOSO.

D.18.3 Biohazard Spill Kit

Biohazard kits will be available in each operational vehicle and with each team working inside the Exclusion Zone. The kit will be used any time an injury occurs or where there is the release of body fluids.

D.18.4 Eyewash Kit

Portable kits of eyewash will be available during operations at the site where the potential for hazardous materials may contact the eyes. Portable eyewash bottles will be used while the injured person is being transported to the site eye wash station or medical attention.

D.18.5 Portable Fire Extinguishers

D.18.5.1 The fire extinguishers listed below will be positioned at the locations specified to ensure their availability to fight fires on site. Fire extinguishers will be stored where they are well marked and readily accessible. Fire extinguishers shall be protected from the damaging affects of environmental elements. The UXOSO is responsible to ensure that all fire extinguishers are visually inspected monthly and that these inspections are documented. All site personnel will be familiar with the locations of fire extinguishers and will be trained in their use.

D.18.5.2 All vehicles shall be equipped with a fire extinguisher rated at not less than 2A;10B:C.

D.18.5.3 All vehicles used in the transportation of flammable and/or explosives materials shall be equipped with two fire extinguishers rated at not less than 2A;20B:C or higher. One fire extinguisher shall be mounted or placed inside the cab of the vehicle and one mounted outside, by the driver's door.

D.18.5.4 The UXOSO will have at least one portable fire extinguisher having a rating of not less than 2A;20B for use inside the Exclusion Zone.

D.18.5.5 Flammable/Combustible liquid and/or Explosive material storage areas will have at least one 4A:20B:C fire extinguisher located within 30 meters (100 feet) of the storage area.

D.18.5.6 The site office and support locations shall be equipped with a fire extinguisher rated at not less than 2A;10B:C.

Table D-25. Emergency Equipment

EMERGENCY EQUIPMENT	QTY	LOCATION USED/STORED	OPERATION REQUIREING EQUIPMENT
16-unit First Aid Kit	1	Each Vehicle Each Team Site Office	All operations
Biohazard Kit	1	Each Vehicle Each Team Site Office	All operations
Portable Eye Wash Kit	1	Each Vehicle Each Team	All operations
Large Medical Kit with Trauma supplies	1	In the UXOSO's Vehicle	All operations
Portable Stretcher	1	In the UXOSO's Vehicle	All operations
Fire Extinguisher, 2A;10B:C	1	Each Vehicle	All operations
Fire Extinguisher, 2A;20B:C	2	Each Vehicle involved	All operations
Fire Extinguisher, 2A;0B	1	UXOSO's Vehicle	All operations
Fire Extinguisher, 2A;10B:C	1	Each Team	All operations
Fire Extinguisher, 2-A;10B:C	1	Site Office	All operations
Fire Extinguisher, 4A;20B:C	1	Flammable/Explosive Storage area	All operations
Spill Containment Supplies	1	Field equipment storage	Operations involving Hazardous Materials

D.19 Logs, Reports and Record keeping

D.19.1 Logs

The Safety Log and records will be completed and retained by the PM for the duration of the project. At the close of the project, they will be turned over to the Program Manager as part of the official project file.

D.19.1.1 Safety Log

D.19.1.1.1 The ATI UXOSO will maintain a daily safety log of all safety-related activities. When safety and health deficiencies are noted during daily inspections, the measures, timetable, and individual responsible for correcting the deficiencies will be noted in the safety log. The UXOSO will also annotate the log when deficiencies have been corrected.

D.19.1.1.2 The following information will be addressed at a minimum in the daily Safety Log:

- Date and recorder of log;
- Significant site events relating to safety;
- Accidents;
- Stop-work actions due to safety;
- Safety audits/deficiencies noted/corrective actions;
- Signature of the UXOSO;
- Signature of the SUXOS indicating his review;
- Training logs;
- A record of all individual training qualifications, of on-site personnel, will be maintained on-site; and
- Records of Site-specific Training, Visitor Training, and Daily Safety Briefings will be prepared on an ATI "Document of Training" form, (See Appendix F, page F-19), and retained in the project files.

D.19.1.2 Equipment Maintenance Logs

Records of maintenance for equipment used on-site will be performed and maintained as part of the project files.

D.19.1.3 Employee/Visitor Registration Records

A record of all employees and visitors coming onto the site will be recorded on the "Visitor's Log" (See Appendix F, page F-21) and retained in the project files.

D.19.1.4 Environmental and Personal Exposure Monitoring

D.19.1.4.1 The SOW for this project includes performing conventional OE removal activities at the Former Five Points OLF.

D.19.1.4.2 The site characteristic of this site reflects no anticipated toxic, chemical, or radiological hazards are expected during activities under the SOW. The requirements for this section are not required.

D.19.2 Reports

D.19.2.1 Safety Reports

The following safety reports will be submitted as required by applicable USACE and OSHA regulations:

- Medical Monitoring Records of employee(s) obtained after site investigations begin.
- Accident Investigation Report (ENG Form 3394). See Appendix F, Page F-33.
- When a reportable injury/illness/accident occurs at the job site, the Accident Investigation Report form (ENG Form 3394) will be completed and forwarded within 48 hours to ATI and USACE.
- If a near-miss occurs, the accident form will be completed and retained for the record. The PM will inform the USACE PM of any accidents.
- If an OSHA reportable accident occurs, the PM will report all required information to the USACE PM within 8 hours.
- When any injury/illness/accident occurs at the job site, the ATI Accident Investigation Report form (see Appendix F, page F-2) will be completed and forwarded within 48 hours to ATI.
- This accident report form will be used by ATI to report incidents and as a basis of re-evaluation of procedures and controls for personnel protection.

D.19.2.2 Monthly Accident Exposure Report

D.19.2.2.1 The UXOSO will report project accident information to the ATI Safety Office no later than the second working day following the last day of a reporting month.

The ATI Safety Office will provide this information to the ATI Project Manager to be incorporated into the Monthly Status report submitted to the USACE Contracting Officer.

D.19.2.2.2 This report will be provided no later than 10 calendar days following the last day of the reporting month.

D.19.3 Record keeping

D.19.3.1 All record keeping will be in accordance with applicable OSHA and USACE standards and regulations.

D.19.3.2 A "Documentation of Training" form (See Appendix F, page F-19) will be prepared for the daily Tailgate Safety Briefing, as well as for any additional safety training performed on-site. This form will include the following information:

- Date of training;
- Nature of training (time conducted, subjects covered, and by whom);
- Morning Tailgate Safety Briefing (time conducted, subjects covered, and by whom);
- Visitor training (time conducted, subjects covered, and by whom); and
- Signature of the SUXOS and UXOSO indicating concurrence.

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