

## APPENDIX J

### Site Safety and Health Plan

# FORA ESCA REMEDIATION PROGRAM

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## Appendix J: Site Safety and Health Plan

### FINAL Group 1 Remedial Investigation / Feasibility Study Work Plan

### Volume 2 - Sampling and Analysis Plan

### Parker Flats Munitions Response Area Phase II

Former Fort Ord  
Monterey County, California

December 17, 2008

*Prepared for:*

#### FORT ORD REUSE AUTHORITY

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#### APPENDICES

A	Site Compliance Checklist
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## ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
CFR	Code of Federal Regulations
CHOMP	Community Hospital of the Monterey Peninsula
CPR	cardiopulmonary resuscitation
DGM	Digital Geophysical Mapping
DMM	discarded military munitions
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
ESCA RP	Environmental Services Cooperative Agreement Remediation Program
EZ	exclusion zone
FLD	field operating procedure
FORA	Fort Ord Reuse Authority
G1 SAP	Group 1 Sampling and Analysis Plan
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response
LFR	LFR Inc.
MEC	munitions and explosives of concern
MSD	minimum separation distance
MSDS	material safety data sheet
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OSIC	On Scene Incident Commander
PHSM	Project Health and Safety Manager
POM	Presidio of Monterey
PPE	personal protective equipment
RMSF	Rocky Mountain Spotted Fever
RPM	Remediation Project Manager
SOP	standard operating procedure
SSHP	Site Safety and Health Plan

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Appendix J

SUXOS	Senior Unexploded Ordnance Supervisor
TEU	Technical Escort Unit
TLV	threshold limit value
UXO	unexploded ordnance
UXOSO	UXO Safety Officer
WESTON	Weston Solutions, Inc.
WP	white phosphorous



## J-1.0 INTRODUCTION

The purpose of this Site Safety and Health Plan (SSHP) is to establish general guidelines and procedures to ensure protection of the Environmental Services Cooperative Agreement Remediation Program (ESCA RP) Team and subcontractor personnel and the public while performing operations at the former Fort Ord. The plan assigns responsibilities, establishes procedures, and develops contingencies that may arise while operations are performed.

The provisions of this plan are mandatory for all on-site activities undertaken by the ESCA RP Team and its subcontractors. All site activities will comply with applicable federal and California requirements. As site conditions change, this plan may need to be modified. Such modifications will be submitted as SSHP addenda and will be numbered sequentially. All SSHP addenda must be reviewed and approved by the Project Health and Safety Officer. All ESCA RP Team personnel and subcontractors must read and understand this SSHP and sign the Plan Acceptance Form prior to the start of work at the site.

### J-1.1 Site Compliance Checklist

The Site Compliance Checklist presented in Appendix A of this SSHP will be used by the Unexploded Ordnance Safety Officer (UXOSO) to conduct the project's monthly safety audit. A copy of the checklist will be given to the Remediation Project Manager (RPM), the program-certified industrial hygienist, and the UXOSO. Noncompliance issues will be corrected promptly and reported to the individuals receiving the compliance checklist.

## J-2.0 PROJECT TEAM RESPONSIBILITIES

Ensuring the safe and healthful conduct of site operations is the responsibility of everyone assigned to the site. The ESCA RP Team and subcontract personnel involved in site activities are responsible for the following:

- Complying with this SSHP and all other required safety and health guidelines
- Taking all necessary precautions to prevent injury to themselves and to their fellow employees
- Continually being alert to any potentially harmful situation and immediately informing the UXOSO of any such identified conditions
- Performing only those tasks that they believe they can do safely and have been trained to perform
- Preventing spillage and splashing of materials to the greatest extent possible
- Practicing good housekeeping by keeping the work area neat, clean, and orderly
- Immediately reporting all injuries, no matter how minor, to the UXOSO
- Maintaining site equipment in good working order and reporting defective equipment to the UXOSO

- Properly inspecting and using the personal protective equipment correctly

## J-2.1 Employee Safety Responsibilities

All operations and personnel having the potential for exposure to site hazards are subject to the requirements of this SSHP. Work will not be performed in a manner that conflicts with the safety, health, or environmental precautions outlined in this plan. All site personnel, including any ESCA RP Team subcontractors, who have the potential for exposure to site hazards, are subject to the requirements of this SSHP. Personnel violating safety procedures are subject to dismissal/removal from the project site. Roles and responsibilities for site personnel are summarized in the following subsections.

The following sections describe the roles and responsibilities of the key Weston Solutions, Inc. (WESTON) team members that will be responsible for field activities. These key team members are also shown on the ESCA RP Team Organization Chart presented in the Group 1 Sampling and Analysis Plan (G1 SAP; Figure 2-8).

## J-2.2 Remediation Project Manager

Ms. Linda Temple will serve as the Remediation Project Manager for the activities covered under this work plan. She has overall responsibility for the management and completion of the project, which includes resource allocation, financial reporting, schedule control, and review and approval of deliverables.

## J-2.3 Project Health and Safety Manager

The Project Health and Safety Manager (PHSM) for this project is Mr. Mike Stuart. The PHSM has the following responsibilities.

- Review and final approval of the SSHP.
- Ensure that the SSHP complies with all federal, state, and local health and safety requirements.
- If necessary, modify specific aspects of the SSHP to adjust for on-site changes that will affect safety.
- Evaluate and authorize and changes to the SSHP.
- Implementation and oversight of the Health and Safety Program.
- Assist in acting as liaison with government officials regarding health and safety-related issues.
- Maintain frequent communication with the Site Safety and Health Officer (UXOSO) regarding site activities and implementation of the SSHP. Assist in training site personnel in the site-specific hazards.

- Ensure that both the site and site personnel comply with the Safety Program and all other applicable plans.

#### J-2.4 Senior UXO Supervisor

Mr. Bruce Moe will serve as the Senior Unexploded Ordnance Supervisor (SUXOS) and will manage field operations in accordance with project requirements. The SUXOS is responsible for coordinating and supervising all site activities.

#### J-2.5 Unexploded Ordnance Safety Officer

The UXOSO will be responsible for implementing the SSHP and ensuring that all project personnel follow the requirements of the SSHP. In addition to overall site safety, he will also be responsible for enforcing UXO safety as it applies to munitions and explosives of concern (MEC) operations.

The UXOSO will be responsible for conducting the morning safety meeting for all site personnel to discuss the day's activities, associated hazards, and MEC safety. He will also be required to report any incidents that occur on site to the PHSM. He will be required to implement safety corrective actions through training and reinforced awareness.

#### J-2.6 Subcontractors

Qualified subcontractors and associate personnel may be brought on site for specialty services that may include, but are not limited to: surveying, heavy equipment delivery and removal, vegetation removal, and demolition. These subcontractors will be under the ultimate direction of the SUXOS and are required to adhere to all aspects of the SSHP.

#### J-3.0 UNKNOWN FILLER

In the event munitions suspected of containing unknown filler is encountered, field activities should be conducted in accordance with the Standard Operating Procedure (SOP) for MEC with Unknown Filler presented in Appendix D.

#### J-4.0 FIELD ACTIVITIES

The fieldwork will generally consist of mobilization, site preparation, excavation operations, MEC operations, and demobilization. These major activities can be summarized as follows:

##### *Activity 1: Preliminary Activities*

This task includes the mobilization of personnel, equipment, and supplies to the project site and setup of office and storage areas.

### ***Activity 2A: Site Preparation Activities***

This task includes site surveying to delineate work areas, brush cutting, general surface debris removal, and building demolition.

### ***Activity 2B: Biological Monitoring and Field Surveys***

Vegetation monitoring activities occur primarily in advance of UXO/MEC remediation activities and include ingress and egress to monitoring sites, marking of monitoring sites, and recording data. This will require walking, bending, and kneeling, occasional hammering of stakes, and operating Global Positioning System (GPS) units. The field biologists will use GPS units to map monitoring locations.

The UXOSO and the SUXOS will be coordinated with in advance of the biological monitoring activity to fully understand the field activities including: geographic location; type of field activities (i.e., intrusive or non-intrusive); and composition of team (i.e., subcontractors, on-staff biologist, etc.) The UXOSO and/or SUXOS will evaluate the proposed biological monitoring activities and make a determination as to the need for UXO escorts.

### ***Activity 3: Excavation/Earth Moving Activities***

This task includes grubbing and scraping approximately 6 inches of soil from the Residential Quality Assurance pilot study test areas (Appendix F of the G1 SAP).

### ***Activity 4: Geophysical Investigation Activities***

This task includes the geophysical investigation of the Parker Flats Munitions Response Area Phase II areas as described in Section 2 of the G1 SAP. This includes Digital Geophysical Mapping (DGM) and analog investigations. The first step will be the implementation of the Geophysical Test Plot. The DGM will be accomplished by using a towed array configuration. An all-terrain vehicle will be used to tow the DGM equipment across the survey area. Man-portable analog systems will also be utilized.

### ***Activity 5: MEC Operations***

This task includes MEC safety escort activities, excavation and removal of potential MEC anomalies, and destruction/disposal of MEC and scrap materials.

UXO technicians II will inspect work areas prior to performing survey or clearing operations for hazardous MEC items as well as escort any visitors during work activities.

The UXOSO coordinates access control and security on site during all MEC operations. Except for low risk MEC escort activities, only essential personnel will be allowed in the work zone. The work zone is the work site, and encompasses an area large enough to prevent personnel injuries from fragmentation resulting from unintentional or intentional detonations.

During on-site operations, the SUXOS will order operations to cease if nonessential personnel are observed within the operating area. To ensure safety, site controls include the following:

- Eating, drinking, and smoking are prohibited except in designated areas.
- Hazardous MEC operations cease if nonessential personnel are present.
- The SUXOS, UXOSO, or their designee escorts authorized site visitors.
- All personnel entering the site, including visitors, will wear the proper personal protective equipment (PPE) and sign in and out on the site visitor's log.
- The UXOSO maintains the Site Control Log to ensure accurate accountability of personnel on site.

The UXOSO provides a SSHP/MEC safety briefing to all personnel entering the site to inform them of potential site hazards. All personnel must acknowledge this briefing by signing the SSHP Review Form.

In case of an emergency, personnel exit the site and move to a designated safe area. The UXOSO will determine the designated safe area that is located upwind of the site outside of the fragmentation area. The SUXOS will notify the site manager if an emergency warrants site evacuation.

### *Activity 6: Closeout Activities*

This task includes the restoration of work areas and the demobilization of all remaining equipment, temporary structures, and other items from the project site after project completion.

## **J-5.0 HAZARD ANALYSIS AND RISK ASSESSMENT**

Safety, biological, and physical hazards will present a risk to workers at former Fort Ord sites. The level of risk is dependent upon the type of work being done. The paragraphs that follow describe the safety, biological, and physical hazards associated with planned activities.

### **J-5.1 Safety Hazards**

The major safety hazard for operations performed at former Fort Ord sites is the unintended detonation of ordnance. Other anticipated safety hazards include heavy equipment operation, excavation safety, slip hazards, and power tool use. Procedures to minimize these hazards are presented below.

### J-5.1.1 MEC

Ordnance and ordnance-related items will be encountered at the former Fort Ord site. Personnel must be alert for MEC and munitions debris. All field personnel must observe the following general safety precautions:

- DO NOT touch or move any MEC until positive identification has been determined, regardless of the markings or apparent condition.
- DO NOT visit an ordnance site if an electrical storm is occurring or approaching. If a storm approaches during a site visit, leave the site immediately and seek appropriate shelter.
- DO NOT use radios or cellular phones in the vicinity of suspect MEC.
- DO NOT walk across an area where the ground cannot be seen. If dead vegetation or animals are observed, leave the area immediately due to potential contamination by chemical agent.
- DO NOT drive vehicles into areas suspected of MEC. Use clearly marked lanes.
- DO NOT rely on color code for positive identification of MEC nor their contents.
- SMOKING will only be allowed in smoking areas designated by the SUXOS during the morning Tailgate Safety Briefing.
- Approach ordnance items from the side.
- Prohibit unnecessary personnel from visiting the site.
- Decontaminate the vehicle interior when deemed necessary to prevent the spread of poison oak oils and sap.
- Always assume MEC contain a live charge until it can be ascertained otherwise.
- The following precautions are applicable to personnel performing MEC recovery and demolition operations.
- All MEC will be identified independently by two (2) UXO Technicians.
- All MEC operations will use the "Buddy" system.
- Demolition operations will as a minimum conform to TM 60A-1-1-31.
- DO NOT dismantle, strip, or handle any MEC unnecessarily.
- Avoid inhalation and skin contact with smoke, fumes, dust, and vapors of detonations and residue from MEC.
- DO NOT attempt to extinguish burning explosives or any fire, which might involve explosive materials.
- DO NOT manipulate external features of MEC unless specifically called for in an Explosive Ordnance Disposal (EOD) procedure.
- Incorporate appropriate property and personnel protective measures for shock and fragmentation when conducting MEC operations.

- Do not subject MEC to rough handling or transportation. Sand bag, chock and block appropriately.
- Carry explosives in an appropriate container.
- Hand carry no more than two items (one in each hand) at a time and then only as required by the operation being performed.
- Destroy shaped charge munitions by crushing the cone to prevent formation of the explosive jet.
- Dispose of white phosphorous (WP) munitions in accordance with the direction of the UXO Safety Specialist.
- Do not transport damaged WP munitions unless fully submerged in water.
- Avoid unnecessary movement of armed or damaged MEC.
- Avoid the forward portions of munitions employing proximity fusing.
- Assume unknown fuzes contain cocked strikers or anti-disturbance features.

### J-5.1.2 Heavy Equipment

A portion of the work may involve the utilization of backhoes to perform excavation. Injuries can result from equipment hitting or running over personnel or from the overturning vehicles. Vehicle and heavy equipment design and operation will be in accordance with 29 Code of Federal Regulations (CFR) parts 1926.600 through 1926.602. In particular, the following precautions will be used to help prevent injuries:

- Brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, tires, horn, and other safety devices being checked by the vehicle operator at the beginning of each shift
- Cabs will be kept free of all nonessential items, and all loose items will be secured
- Glass in windshields, windows, and doors will be safety glass. Any cracked or broken glass will be replaced
- Backhoes will be provided with necessary safety equipment (seat belts, rollover protection, emergency shut-off in case of rollover, and backup warning lights and audible alarms)
- Blades and buckets will be lowered to the ground, and parking brakes will be set before shutting off any heavy equipment or vehicle
- Backhoes will not be backed up unless:
  - The vehicle has a reverse signal alarm audible above the surrounding noise level
  - The vehicle is backed up under the direction of a signalman
- The heavy equipment operator will be trained in the operation of the vehicle. Any person operating a motor vehicle will possess a permit valid for the equipment being used.

### J-5.1.3 Excavation Safety

Prior to any excavation activity, efforts must be made to determine whether underground installations (i.e., sewers, telephone, water, fuel, electric lines, etc.) will be encountered and, if so, where such underground installations are located. The UXOSO or designee must contact the utility companies or owners involved and inform them, within established or customary local response times, of the proposed work. If the utility companies or owners do not respond within the period established by law or ordinance, or if they cannot identify the locations of utilities, the excavation may proceed with caution. In this situation, detection equipment or other safe and acceptable means to locate utilities may be used. If underground installations are exposed, Occupational Safety and Health Administration (OSHA) requires that they be removed, protected, or properly supported.

No protective system is needed if the excavation is made entirely in stable rock, or if workers enter an excavation that is less than 5 feet in depth (provided that the competent person, UXOSO, determines that there is no potential for a cave-in). If the depth of the excavation exceeds 5 feet then the sides of the excavation will slope to an angle not steeper than one and one-half horizontal to one vertical (34° measured from the horizontal). Access to and exit from an excavation must comply with the following conditions:

- Trenches 4 feet or more in depth should be provided with a fixed means of egress
- Spacing between ladders or other means of egress will be a minimum of 25 feet laterally
- Ladders must be secured and extend a minimum of 36 inches above the landing
- Metal ladders should not be used when electric utilities are present

### J-5.1.4 Slip, Trip, and Fall Hazards

Slip, trip, and fall hazards may be encountered at the site including holes, pits, ditches, steep grades, and uneven grades. Personnel should use caution when traversing the site.

### J-5.1.5 Power Tools

By their very nature, power tools have great capability for inflicting serious injury upon site personnel if they are not used and maintained properly. To control the hazards associated with power tool operation, the requirements outlined in EM 385-1-1 and the safe work practices listed below are observed when using power tools:

- Operations are conducted by authorized personnel familiar with the tool, its operation, and safety precautions. Power tools must be operated in accordance with the owner's manual
- Power tools are inspected prior to use and defective equipment is removed from service until repaired
- Power tools designed to accommodate guards have such guards properly in place prior to use



- Loose fitting clothing or long hair is not permitted around moving parts
- Hands, feet, etc., are kept away from all moving parts
- Maintenance and/or adjustments to equipment are not to be conducted while the equipment is in operation
- An adequate operating area is provided, allowing sufficient clearance and access for operation
- Personnel use required protective equipment, such as gloves, chaps, and steel-toed boots when using chainsaws

### J-5.1.6 Confined Space Entry

Entry into permit-required confined spaces is not anticipated. Should entry into a permit-required confined space be required, the PHSM will be contacted to provide guidance and training.

## J-5.2 Biological Hazards

Biological hazards that are usually found on site include ticks, spiders, poisonous snakes, vermin, and hazardous plants. Depending on the season and weather the hazards at the former Fort Ord will vary. For instance, during cold weather many animals and insects are not active and most plants are dormant. The project may continue through several seasons and the risks and hazards will change with the seasons. Employee awareness and the safe work practices outlined in the following paragraphs should reduce the risk associated with these hazards.

### J-5.2.1 Hazardous Plants

A number of hazardous plants may be encountered during field operations. The ailments associated with these plants range from mild hay fever to contact dermatitis. Plants that present the greatest risk to site workers are those that produce allergic reactions and tissue injury.

#### *Plants That Cause Skin and Tissue Injury*

Contact with sharp leaves and thorns are of special concern to site personnel. This concern stems from the fact that punctures, cuts, and even minor scrapes caused by accidental contact may result in skin lesions and the introduction of fungi or bacteria through the skin. This is especially important in light of the fact that the warm moist environment created inside protective clothing is ideal for the propagation of fungal and bacterial infection. Personnel receiving any of the injuries listed above, even minor scrapes will report immediately to the UXOSO for continued observation and care. 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.

### *Plants That Cause an Allergic Reaction*

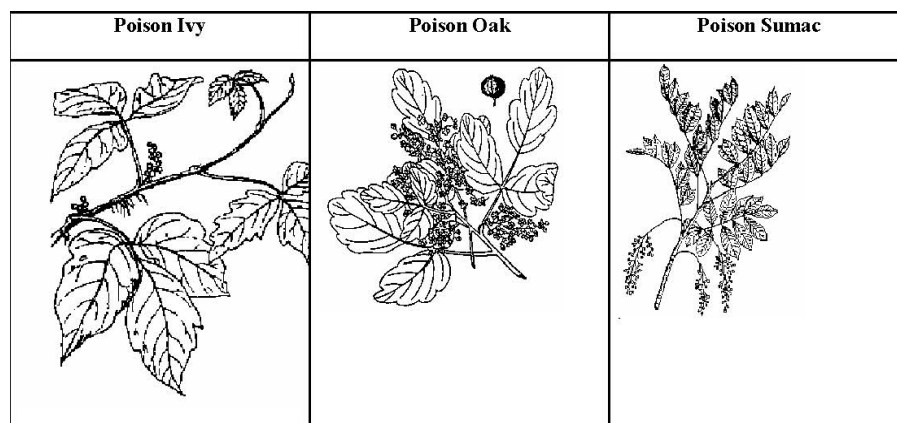
The poisonous plants of greatest concern are poison ivy, poison oak, and poison sumac (Figure J-1). Contact with the poisonous sap of these plants produces a severe rash characterized by redness, blisters, swelling, and intense burning and itching. The victim also may develop a high fever and may be very ill. Ordinarily, the rash begins within a few hours after exposure, but it may be delayed for 24 to 48 hours.

The most distinctive features of poison ivy and poison oak are their leaves, which are composed of three leaflets each. In certain seasons, both plants also have greenish-white flowers and berries that grow in clusters. Poison sumac is a tall shrub or small tree with 6 to 12 leaflets arranged in pairs with a single leaflet at the end. This plant grows in wooded, swampy areas. The 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
- If the rash is scratched, secondary infections can occur. Preventive measures that are effective for most site personnel include:
  - 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.

Figure J-1  
Poison Ivy / Poison Oak / Poison Sumac



### J-5.2.2 Tick Bites

The Center for Disease Control has noted the increase of Lyme Disease and Rocky Mountain Spotted Fever (RMSF), which are caused by bites from infected ticks that live in and near wooded areas, tall grass, and brush. Ticks are small, ranging from the size of a comma up to about one quarter inch and are sometimes difficult to see (Figure J-2). The tick season extends from spring through summer. When embedded in the skin, they may look like a freckle.

Figure J-2  
Tick



Lyme disease has been documented in 43 states with the heaviest concentrations in the northeast (Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania), the upper Midwest (Minnesota and Wisconsin), and along the northern California coast and more specifically, Monterey County. It is caused by deer ticks and lone star ticks that have become infected with spirochetes. Female deer ticks are about one quarter inch in size and are black and brick red in color. Male deer ticks are smaller and completely black. Lone star ticks are larger and chestnut brown in color.

RMSF has occurred in 36 states, with the heaviest concentrations in Oklahoma, North Carolina, South Carolina, and Virginia. It is caused by Rocky Mountain Wood Ticks and Dog Ticks that have become infected with rickettsia. Both are black in color.

The first symptoms of either disease are flu-like chills, fever, headache, dizziness, fatigue, stiff neck, and bone pain. If immediately treated by a physician, most individuals recover fully in a short period of time. If not treated, more serious symptoms can occur.

If you believe a tick has bitten you, or if any of the signs and symptoms noted above appears, contact the UXOSO, who will authorize you to visit a physician for an examination and possible treatment.

### ***Protective Measures***

Standard field gear (work boots, socks, and light-colored coveralls) provides good protection against tick bites, particularly if the joints are taped. However, even when wearing field gear, the following precautions will be taken when working in areas that might be infested with ticks:

- When in the field, check yourself often for ticks, particularly on your lower legs and areas covered with hair
- Spray outer clothing, particularly your pant legs and socks, BUT NOT YOUR SKIN, with an insect repellent that contains permethrin or permethrin
- When walking in wooded areas wear a hard hat and avoid contact with bushes, tall grass, or brush as much as possible
- If you find a tick, remove it by pulling on it gently with tweezers. Do not squeeze the tick's body. Grasp it where the mouthparts enter the skin and tug gently, but firmly, until it releases its hold on the skin
- If the tick resists, cover the tick with salad oil/Vaseline for about 15 minutes to asphyxiate it, then remove it with tweezers
- DO NOT use matches, a lit cigarette, or nail polish or any other type of chemical to "coax" the tick out
- Be sure to remove all parts of the tick's body and disinfect the area with alcohol or a similar antiseptic after removal
- For several days to several weeks after removal of the tick, look for the signs of the onset of Lyme disease, such as a rash that looks like a bulls-eye or an expanding red circle surrounding a light area, frequently seen with a small welt in the center
- Also look for the signs of the onset of RMSF, such as an inflammation, which is visible in the form of a rash comprising many red spots under the skin, which appears 3 to 10 days after the tick bite

### J-5.2.3 Insects

Contact with stinging insects may result in site personnel experiencing adverse health affects that range from being mildly uncomfortable to being life threatening. Therefore, stinging insects present a serious hazard to site personnel and extreme caution must be exercised whenever site and weather conditions increase the risk of encountering stinging insects. Poisonous insects and insect-like creatures that may be encountered at the former Fort Ord include the following:

- Bees ("Killer" bees, honeybees, bumblebees, wasps, hornets, and wingless wasps)
- Scorpions
- Fire ants

#### *Bees*

Personnel should be very cautious of "killer" bees. They have the appearance of the typical honeybee; however, they are very aggressive. These Africanized honeybees defend their colonies much more vigorously than typical bees. The colonies are easily disturbed (sometimes just by being nearby). When they do sting, many more bees may participate, so there is a danger of receiving more stings. This can make them life threatening, especially to people allergic to stings, or with limited capacity to escape (the young, old, and handicapped).

#### *Scorpions*

The scorpions commonly found in California have the capacity to inflict a painful sting, however, they are not considered to pose a danger to humans. Stings by these scorpions can be managed by washing the wound with soap and water and by application of an ice pack for a few minutes. Medical attention is usually not needed unless the victim is displaying signs of an allergic reaction (rash, severe swelling, shortness of breath).

#### *Fire Ants*

Fire ants are aggressive, reddish-brown to black ants that are 1/8 inch to 1/4 inch long. They construct nests, which are often visible as dome-shaped mounds of soil, sometimes as large as 3 feet across and 1 1/2 feet in height. In sandy soils, mounds are flatter and less visible. Fire ants usually build mounds in sunny, open areas such as lawns, pastures, cultivated fields, and meadows, but they are not restricted to these areas. Mounds or nests may be located in rotting logs, around trees and stumps, under pavement and buildings, and occasionally indoors.

Fire ants use their stingers to immobilize or kill prey and to defend ant mounds from disturbance by larger animals, such as humans. Any disturbance sends hundreds of workers out to attack anything that moves. The ant grabs its victim with its mandibles (mouthparts) and then inserts its stinger. The process of stinging releases a chemical, which alerts other ants, inducing them to sting. In addition, one ant can sting several times without letting go with its mandibles.

Once stung, humans experience a sharp pain that lasts a couple of minutes, then after a while the sting starts itching and a welt appears. Fire ant venom contains alkaloids and a relatively small amount of protein. The alkaloids kill skin cells; this attracts white blood cells, which form a pustule within a few hours of being stung. The fluid in the pustule is sterile, but if the pustule is broken, the wound may become infected. The protein in the venom can cause allergic reactions that may require medical attention.

Some of the factors related to stinging insects that increases the risk associated with accidental contact are:

- The nests for these insects are frequently found in remote wooded or grassy areas and hidden in cavities
- The nests can be situated in trees, rocks, bushes or in the ground, and are usually difficult to see
- Accidental contact with these insects is highly probable, especially during warm weather conditions when the insects are most active
- If a site worker accidentally disturbs a nest, the worker may be inflicted with multiple stings, causing extreme pain and swelling which can leave the worker incapacitated and in need of medical attention
- Some people are hypersensitive to the toxins injected by a sting, and when stung, experience a violent and immediate allergic reaction resulting in a life-threatening condition known as anaphylactic shock
- Anaphylactic shock manifests itself very rapidly and is characterized by extreme swelling of the body, eyes, face, mouth, and respiratory passages
- The hypersensitivity needed to cause anaphylactic shock, can in some people, accumulate over time and exposure; therefore, even if someone has been stung previously, and not experienced an allergic reaction, there is no guarantee that they will not have an allergic reaction if they are stung again
- With these things in mind, and with the high probability of contact with stinging insects, all site personnel will comply with the following safe work practices:
- If a worker knows that he is hypersensitive to bee, wasp, or hornet stings, he must inform the UXOSO of this condition prior to participation in site activities
- All site personnel will be watchful for the presence of stinging insects and their nests, and will advise the UXOSO if a stinging insect nest is located or suspected in the area
- Any nests located on site will be flagged off and site personnel will be notified of its presence
- If stung, site personnel will immediately seek shelter and stay there even if some bees come in with you (there are more outside the building or car). Do not jump in water (bees will still be in the area when you come up). Once safe, remove stings from your skin, it does not matter how you do it, but do it as quickly as possible to reduce the amount of venom they inject. Obtain first aid treatment and contact the UXOSO who will observe for signs of allergic reaction

- Site personnel with a known hypersensitivity to stinging insects will keep required emergency medication on or near their person at all times

#### J-5.2.4 Snakes

Snakes like to sun themselves on rocks during the day. Therefore, when site activities are conducted, extreme caution must be exercised around areas where snakes might be found (i.e., rocks, bushes, logs, or in holes, crevices, or abandoned pipes). The rattlesnake is the only type of snake in California that is dangerous to humans. These snakes are normally not aggressive and will flee when humans approach. However, if a rattlesnake is encountered, leave the area and report the location to UXOSO. The UXOSO will issue protective clothing, such as snake leggings, to site personnel.

##### *Western Rattlesnake*

This is the only rattlesnake that can be encountered in Northern California. Its venom, which it uses to immobilize its prey and defend itself, contains both neurotoxins and hemotoxins. Neurotoxins affect the nervous system and hemotoxins affect the bloodstream. Its size can vary between 1.25 and 5.25 feet and can be identified by brownish blotches down midline of back; generally edged with dark brown or black. The snake is most active between the months of April and October.

##### *Treatment*

A snake bite is usually characterized by extreme pain and swelling at the site of the bite; the presence of one or more puncture wounds created by the fangs; and a general skin discoloration. The manifestations of the bite include general weakness, rapid pulse, nausea and vomiting, shortness of breath, dimness of vision, tingling or numbness of the tongue, mouth or scalp, and shock.

Physical reactions are aggravated by acute fear, anxiety, the amount of venom injected, the speed of absorption of venom into the victim's circulation, the size of the victim, protection provided by clothing (including shoes and gloves), the amount of time before anti-venom therapy, and location of the bite.

##### *First Aid*

The rules to follow for a snake bite 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 effect 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
- DO NOT use cold compresses, ice, dry ice, chemical ice packs, spray refrigerants, or other methods of cold therapy

- If possible, 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
- Reassure and keep the victim calm, quiet, and immobile. Do not delay evacuation
- Have the victim hold the affected extremity lower than the body while waiting for medical assistance
- Transport the victim to medical attention immediately

### ***Identification Features***

Nonpoisonous snakes are often erroneously identified as poisonous. The following features in Table J-1 will assist in properly identifying a snake as poisonous or nonpoisonous.

Table J-1  
Snake Identification Features

Feature	Poisonous	Nonpoisonous
Eye Pupils	Elliptical or cat-like	Round
Sensing Pits	Pit between the eyelids and nostrils	No pit between the eyelids and nostrils
Teeth	Two enlarged teeth (fangs) in front of the upper jaw	All teeth are approximately the same size
Scales	Form a single row on the underside and below the tail	Arranged in a double row on the underside of the tail
Head	Head much wider than the neck	Head slightly wider than the neck
Tail	Single anal plate	Divided anal plate

### **J-5.2.5 Spiders**

A large variety of spiders may be encountered during site activities. Extreme caution must be used when lifting logs and debris, since spiders are typically found in these areas.

While most spider bites merely cause localized pain, swelling, reddening, and in some cases, tissue damage, there are a few spiders that, due to the severity of the physiological affects caused by their venom, are dangerous. The UXOSO will brief site personnel as to the identification and avoidance of these dangerous spiders. These species include the black widow and the brown or violin spiders.

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 underside of the abdomen (Figure J-3). 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:

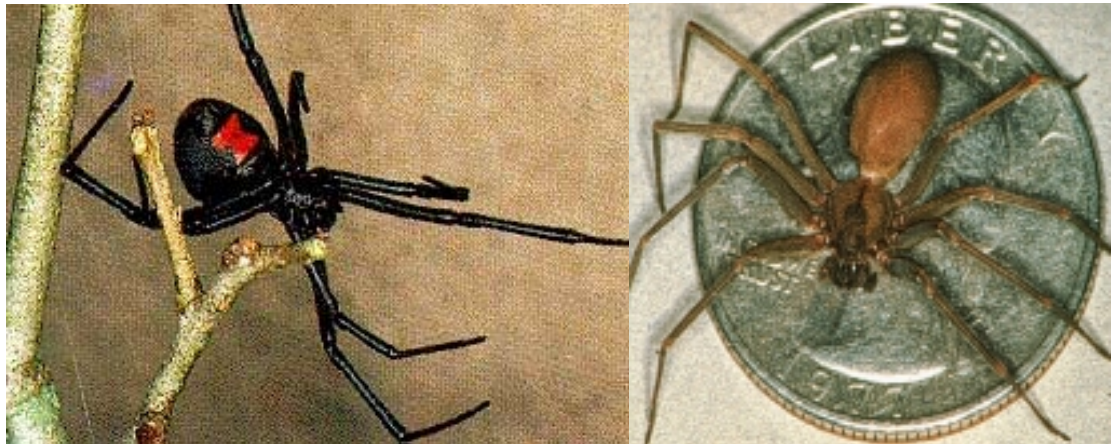
- Sensation of pinprick or minor burning at the time of the bite
- Appearance of small punctures (but sometimes none are visible)
- After 15 to 60 minutes, intense pain is felt at the site of the bite which spreads quickly, and is followed by profuse sweating, rigid abdominal muscles, muscle spasms,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

The brown or violin spider is brownish to tan in color, rather flat, and 1/2 to 5/8 inches long (Figure J-3). However, unlike the typical species, the ones encountered at the former Fort Ord do not have a violin or “fiddle” shaped mark on the top of the head. 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. The brown recluse spider has not been reported at or near the project area (Vetter 1999). These spiders may be found in a variety of locations including trees, rocks, or in dark locations. 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 affects 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

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

Figure J-3  
Spiders



*First aid should include:*

- If possible, catch the spider to confirm its identity. Even if the body is crushed, save it for identification
- Clean the bitten area with soap and water or rubbing alcohol
- To relieve pain, place an ice pack over the bite
- Keep the victim quiet and monitor breathing
- Seek immediate medical attention

#### J-5.2.6 Rats, Mice, and Bats

Rats, mice, and bats may be found at the site. These animals may carry rabies and should be avoided. In addition, Hantavirus is also a concern when coming in contact with these animals. Hantavirus is a disease spread primarily from infected rodent droppings. Hantavirus results from intimate contact with rodents, such as may occur in agricultural areas with dense human and rodent populations or during soil excavation. Hantavirus is not transferred from person to person. The overwhelming evidence is that spread is from rodent to humans through contact with infected rodent secretions or airborne transmission by infected dust particles.

Preventive measures should focus on cleaning all cuts and scratches with soap and water, followed by rinsing with hydrogen peroxide. Put liquid skin on the affected areas. The best preventative measure is to avoid all rodent nests during geophysical surveys. If rodent nests are discovered, field team members should be apprised of their locations and avoid working adjacent to the nests. If work must be performed at that location, a 10 percent bleach solution will be sprayed on the nest and adjacent areas to kill the virus. If work must be performed at a location where rodent infestation is evident personal protective equipment should be worn in accordance with the SOP for Hantavirus Exposure Protection presented in Appendix D of the G1 SAP. The PPE ensemble will include:

- Half-face air purifying respirator with high efficiency particulate air filter cartridges (N/P/R99, 100) and non-vented goggles or high filtration dust mask with non-vented goggles
- Tyvek coveralls
- Tyvek boot covers or rubber boots
- PVC or latex gloves

#### J-5.2.7 Bloodborne Pathogens

Bloodborne pathogens enter the human body and blood circulation system through punctures, cuts, or abrasions of the skin or mucous membranes. They are not transmitted through ingestion (swallowing), through the lungs (breathing), or by contact with whole, healthy skin. Examples of bloodborne pathogens are HIV, Hepatitis B, Malaria, Syphilis, and West Nile Virus. However, under the principle of universal precautions all blood should be considered

infectious, and all skin and mucous membranes should be considered to have possible points of entry for pathogens.

***Potential blood borne pathogen exposures that employees might face include:***

- Contact with contaminated medical equipment or medical waste or sharp instruments
- Medical emergency response operations such as administering first aid or cardiopulmonary resuscitation (CPR)
- Contact with human wastes such as domestic sewage

### J-5.3 Physical Hazards

Physical hazards that exist at the former Fort Ord include noise, heat and cold stress, and fire hazards. Procedures to protect workers from these hazards are presented below.

#### J-5.3.1 Noise Induced Hearing Loss

Planned activities will involve the use of heavy equipment, such as backhoes and generators. The unprotected exposure of site workers to this noise during activities can result in noise-induced hearing loss. Personnel working at this site will be enrolled in a hearing conservation program. The UXOSO will verify that each site worker has received hearing conservation training that entails proper use of hearing protectors. Additionally, the UXOSO will ensure that either earmuffs or disposable foam earplugs are made available to, and used by, all personnel near operating heavy equipment, or other sources of high intensity noise. Hearing protection is required any time the noise level reaches 85 dbA or greater. Double protection is required any time noise levels exceed 104 dbA.

Noise monitoring will be accomplished by field determination. If a person speaking in a normal voice cannot be heard at a minimum 3-foot distance, then hearing protection will be required.

#### J-5.3.2 Heat Stress

Heat stress is one of the most common (and potentially serious) illnesses that affect site workers. When site personnel are engaged in operations in hot environments, a number of physiological responses can occur which may seriously affect the health and safety of the workers. These affects can be eliminated or controlled through the use of a comprehensive heat stress prevention and monitoring program.

Individuals vary in their susceptibility and degree of response to stress induced by increased body heat. Heat stress can result in health effects ranging from transient heat fatigue to serious illness or death. Heat stress is caused by a number of interacting factors including environmental condition, clothing, workload, and the individual characteristics of the worker. Because heat stress is probably one of the most common (and potentially serious) illnesses at

MEC sites, regular monitoring and other preventive precautions are vital. Factors that may predispose a worker to heat stress include:

- Lack of physical fitness
- Lack of acclimatization to hot environments
- Degree of hydration
- Obesity
- Current health (i.e., having an infection, chronic disease, diarrhea, etc.)
- Alcohol or drug use
- The worker's age and sex

The amount and type of PPE worn influence the worker's heat tolerance. 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. Once PPE is selected, the safe duration of work/rest periods should be determined based on:

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

Sweating does not cool the body unless moisture is removed from the body. The use of PPE reduces the body's ability to eliminate large quantities of heat because the evaporation of sweat is decreased. The body's effort to maintain an acceptable temperature may become impaired and this may cause heat stress. Increased body temperature and physical discomfort also promote irritability and a decreased attention to the performance of hazardous tasks. At the former Fort Ord sites, Level D PPE will be utilized, thus providing minimal increase in the potential for heat stress. Level D PPE is defined as standard work clothes with long pants, hard-hat (when overhead hazard is present), and safety boots (when working around heavy equipment).

### ***Early Symptoms of Heat Stress***

The early symptoms used to recognize heat-related illnesses include:

- Decline in task performance
- Lack of coordination
- Decline in alertness
- Unsteady walk

- Excessive fatigue
- Muscle cramps
- Dizziness

### ***Heat Stress Disorders***

The following paragraphs outline the major heat-related illnesses that may result from exposure to high heat environments, which include heat rash, fainting, heat cramps, heat exhaustion, and heat stroke (Table J-2). For the purpose of this program, reference to “liquids” will indicate the use of water or an electrolyte replacement solution.

#### ***Heat Rash***

Heat rash is 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. Symptoms include a mild red rash, especially in areas of the body that sweat heavily. Treatment of heat rash entails decreasing the amount of time in protective gear and using baby powder to absorb moisture and decrease chafing. Maintain good personal hygiene standards and change into dry clothes as needed.

#### ***Heat Cramps***

Heat cramps are 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. Symptoms include acute, painful spasms of voluntary muscles such as the back, abdomen, and extremities. Treatment involves moving victim to a cool area and loosening restrictive clothing. Stretch and massage affected muscles to increase blood flow to the area. Have patient drink one to two cups of liquids immediately with fluid intake repeated every twenty minutes thereafter. Consult with physician if condition does not improve. If available, an electrolyte replacement solution should be consumed.

#### ***Heat Exhaustion***

Heat exhaustion occurs due to the large fluid and salt loss from profuse sweating. It is a state of very definite weakness or exhaustion caused by increased stress on various organs to meet increased demands to cool the body from excessive loss of fluids. 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. Symptoms include: pale and moist skin, profuse perspiration, and extreme weakness. Body temperature is basically normal or slightly elevated. The worker's pulse is weak and rapid, and breathing is often shallow. The individual may have a headache or experience nausea. Treatment for heat exhaustion involves removing the individual to a cool, air-conditioned place, loosening the persons clothing, and elevating the victim’s feet. Consult a physician, especially in severe cases. Have patient drink one to two cups of liquids immediately, and repeat every twenty minutes thereafter. Total liquid

consumption should be about one to two gallons per day. If the signs and symptoms of heat exhaustion do not subside, or become more severe, medical attention will be required.

### *Heat Stroke*

Heat stroke is 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°F) where brain damage and death will result if the person is not cooled quickly. The victim's skin is hot and often dry. Other symptoms include 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 should lie down and keep head elevated. Cool the victim by either sponging or immersing the victim in very cool water to reduce the core temperature to a safe level (<102°F). 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. Heat stroke is considered a medical emergency. Medical help should be summoned immediately. **Early recognition and treatment of heat stroke are the only means of preventing brain damage or death.**

### *Preventive Measures*

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 the need, normally whenever the temperature reaches at least 75°F. These preventive measures represent the minimal steps to be taken and will include the following procedures:

- The UXOSO will examine each site worker prior to the start of daily operations, and periodically throughout the day, to determine the individual's susceptibility to heat induced stress. Evidence of extreme dehydration 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 (obese, using diuretics, etc.) for heat stress that are allowed to participate in site operations will be monitored frequently by the UXOSO
- Site workers will be trained to recognize and treat heat-related illnesses. This training will include recognizing the signs and symptoms of heat stress disorders and knowing proper treatment
- In order to maintain workers' body fluids at normal levels, workers will be encouraged to drink, as a minimum, approximately sixteen 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 four (4) to twelve (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

- 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 ingested to replace lost sweat. When heavy sweating occurs, workers will be encouraged to drink even though they may not be thirsty
- A shelter or shaded area will be provided where workers may be protected from direct sunlight during rest periods
- Monitoring of ambient or physiological heat stress indices will be conducted to allow prevention and early detection of heat induced stress. Monitoring will be conducted in accordance with applicable paragraphs of this SSHP
- 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. 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. 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
- Work schedules will be adjusted as follows:
  - Modify work/rest schedules according to monitoring requirements
  - Mandate work slowdowns as needed
  - Rotate personnel: alternate job functions to minimize over-stress 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

### *Heat Stress Monitoring*

Heat stress prevention is important, because once a person suffers from heat stroke or heat exhaustion, that person may be more likely to have additional heat-related illnesses (Table J-3).

#### *The following steps to prevent heat stress should be followed:*

- Provide air conditioned shelter or shaded areas to protect personnel during rest periods
- Urge workers to drink water to keep their body fluids at normal levels
- Adjust work schedules according to monitoring requirements and perform work during cooler hours of the day. The normal work schedule consists of a 10-hour day, four days per week
- Provide accurate verbal and written instructions, frequent training programs, and other information about heat stress and strain
- Permit self-limitation of exposures and encourage co-worker observation to detect signs and symptoms of heat strain in others
- Counsel and monitor those who take medications that may compromise normal cardiovascular, blood pressure, body temperature regulation, renal, or sweat gland functions; and those who abuse or are recovering from the abuse of alcohol or other intoxicants
- Encourage healthy life-styles, ideal body weight, and electrolyte balance
- Adjust expectations of those returning to work after absence from hot exposure situations and encourage consumption of salty foods (with approval of physician if on a salt-restricted diet)
- Ensure workers have current medical screening to identify those susceptible to systemic heat injury



Table J-2  
Signs and Symptoms of Heat Stress

Illness	Cause	Signs and Symptoms
Heat Rash	May result from continuous exposure to heat or humid air	Red rash on skin, intense itching and inflammation
Heat Cramps	Caused by heavy sweating with inadequate electrolyte replacement	Muscle spasms; pain in the hands, feet, and abdomen
Heat Exhaustion	Occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration	Pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting
Heat Stroke	Most serious form of heat stress; temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur; competent medical help must be obtained	Red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma

Table J-3  
Suggested Frequency for Monitoring Fit and Acclimatized Workers <sup>a</sup>

Adjusted Temperature <sup>b</sup>	Normal Work Ensemble <sup>c</sup>	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°- 30.8°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

Reference: NIOSH/OSHA/USCG/EPA 1985.

- a. For work levels of 250 kilocalories/hour.
- b. Calculate the adjusted air temperature (ta adj) by using the equation:  $ta\ adj = ta + (13 \times \text{percent sunshine})$ , where: ta is the air temperature in °F. 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; zero percent sunshine = no shadows.)
- c. A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

For temperatures above 70°F (21°C), heat stress monitoring will be initiated for workers wearing semi-permeable or impermeable clothing. The monitoring will be as follows:

Heart rate: Count the radial pulse during a 30-second period as early as possible in the rest period.

- If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same.
- If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third.

### J-5.3.3 Cold-related Illnesses

If work on this project is conducted in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Work will cease under unusually hazardous conditions (e.g., wind-chill less than 0°F, or wind-chill less than 10°F with precipitation). Systemic cold exposure is referred to as hypothermia. Local cold exposure is generally labeled frostbite. Recognition of the symptoms of cold-related illness will be discussed during the health and safety briefing conducted prior to the onset of site activities. Refer to the 2000 American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices for additional information on cold stress prevention, monitoring, and protective measures.

#### *Hypothermia*

Hypothermia is a life-threatening condition in which the core body temperature falls below 95°F. Hypothermia can occur at temperatures above freezing, particularly when the skin or clothing becomes wet. During exposure to cold, maximum shivering occurs when the core temperature falls to 95°F (Table J-4). As hypothermia progresses, depression of the central nervous system becomes increasingly more severe. This accounts for the progressive signs and symptoms ranging from sluggishness and slurred speech to disorientation and eventually unconsciousness. The ability to sustain metabolic rate and to reduce skin blood flow is diminished by fatigue. Thus, fatigue increases the risk of severe hypothermia by decreasing metabolic heat. Additionally, because blood flow through the skin is reduced to conserve heat, the skin and underlying tissues become more susceptible to frostbite.

Table J-4  
Progressive Clinical Symptoms of Hypothermia

Core Temperature (F)	Clinical Signs
95°	Maximum shivering
87° - 89°	Consciousness clouded; blood pressure becomes difficult to obtain; pupils dilated
84° - 86°	Progressive loss of consciousness; muscular rigidity; respiratory rate decreases
79°	Victim rarely conscious
70° - 72°	Maximum risk of ventricular fibrillation

### ***Frostbite***

Frostbite is both the general and medical term given to areas of cold injury. Unlike hypothermia, frostbite rarely occurs unless environmental temperatures are less than freezing and usually less than 20°F. Frostbite injuries occur most commonly on the distal parts of the body (nose, earlobes, hands, and feet) that are subject to intense vasoconstriction. The three general categories of frostbite are:

- Frostnip - A whitened area of the skin, which is slightly burning or painful
- Superficial frostbite - Waxy, white skin with a firm sensation but with some resiliency. Symptomatically feels “warm” to the victim with a notable cessation of pain
- Deep frostbite - Tissue damage deeper than the skin, at times, down to the bone. The skin is cold, numb, and hard

### ***Preventing Cold-related Illnesses***

Educate worker to recognize the symptoms of frostbite and hypothermia:

- Ensure the availability of an enclosed, heated environment within the vehicles. The nearest heated environment will be the interior of the vehicles at the site
- Ensure the availability of dry changes of clothes
- Record temperature readings
- Ensure the availability of warm beverages, preferably noncaffeinated

### ***Cold Weather Monitoring and Hypothermia***

Hypothermia is defined as a decrease in the body core temperature below 96°F (36°C). The following symptoms appear (in the order listed) as the body loses heat faster than it can be produced:

- Voluntary exercise to stay warm
- Involuntary exercise to stay warm (shivering)
- Loss of judgment and reasoning abilities
- Feelings of apathy, listlessness, and indifference
- Loss of control of the hands

The following steps should be taken to prevent hypothermia:

- Educate workers to recognize the symptoms of frostbite and hypothermia
- Identify and limit known risk factors
- Ensure the availability of dry changes of clothes
- Develop a capability for temperature recording at the site
- Ensure the availability of warm drinks

Monitoring the oral temperature on the job site can also be used to defend against hypothermia. This should be done at the supervisor's discretion based on changes in the worker's performance or mental status, or when the wind-chill is less than 20°F (-7°C), or a wind-chill is less than 30°F (-2°C) with precipitation. Any worker developing moderate hypothermia, defined as a core temperature of 92° (34°C), may not return to work for 48 hours.

#### J-5.3.4 Fire Hazards

Although fires and explosions may arise spontaneously they are more commonly the result of carelessness during the conduct of site activities, such as moving drums, mixing/bulking of site chemicals, and during refueling of heavy or handheld equipment. Some potential causes of explosion and fires include:

- Mixing of incompatible chemicals, which cause reactions that spontaneously ignite due to the production of both flammable vapors and heat
- Ignition of explosive or flammable chemical gases or vapors by external ignition sources
- Ignition of materials due to oxygen enrichment
- Agitation of shock or friction-sensitive compounds
- Sudden release of materials under pressure

##### ***Fire Prevention***

Explosions and fires not only pose the obvious hazards of intense heat, open flames, smoke inhalation, and flying objects, but may also cause the release of toxic chemicals into the environment. Such releases can threaten both personnel on site and members of the general public living or working nearby. Site personnel involved with potentially flammable material

or operations must follow the guidelines listed below and EM 385-1-1, Section 9, to prevent fires and explosions:

- Potentially explosive/flammable atmospheres involving gases or vapors will be monitored using a combustible gas indicator
- Prior to initiation of site activities involving explosive/flammable materials all potential ignition sources must be removed or extinguished
- Non-sparking and explosion-proof equipment must be used whenever the potential for ignition of flammable/explosive gases/vapors/liquids exists
- Dilution or induced ventilation may be used to decrease the airborne concentration of explosive/flammable atmospheres
- Smoking is restricted to designated areas on MEC work sites
- Flammable and/or combustible liquids must be handled only in approved and properly labeled metal safety cans equipped with flash arresters and self-closing lids
- Transfer of flammable liquids from one metal container to another will be done only when the containers are electrically interconnected (bonded)
- The motors of all equipment being fueled will be shut off during the fueling operations
- Metal drums used for storing flammable/combustible liquids will be equipped with self-closing safety faucets, vent bung fittings, grounding cables and drip pans, and will be stored outside buildings in an area approved by the UXOSO

#### ***Fire Protection***

The following safe work practices are to be used to protect against fires:

- Vehicles and equipment will not be fueled while running
- Flammable/combustible liquid storage areas have at least one 4A:20B:C fire extinguisher located within 25-75 feet and marked with the appropriate fire symbol and no smoking signs
- All vehicles used in the transport of explosives are equipped with two fire extinguishers of not less than 2A:10B:C or higher, with one fire extinguisher mounted/placed inside the cab of the vehicle and one mounted outside, by the driver's side door, if possible
- Temporary offices will be equipped with a fire extinguisher of not less than 10:ABC
- At least one portable fire extinguisher having a rating of not less than 4A:20B:C will be located at each work site

#### **J-5.3.5 Ionization Radiation**

No radiological hazards are anticipated during operations at the former Fort Ord. If any radioactive sources are encountered by the ESCA RP Team personnel or their subcontractors work at that location will be stopped and the PHSM will be contacted to provide guidance on proper protective measures.

## J-5.4 Chemical Hazards

Non-Chemical-Warfare-Material chemical hazards, such as lead-contaminated soils or lead-based paint, may be anticipated at former small arms ranges or during demolition of existing structures. Should contaminated soils be encountered, the PHSM will be contacted to provide guidance on appropriate safety precautions.

### *Chemical Warfare Munitions*

Chemical Munitions, Chemical Warfare Material, or Radiological Contamination is not anticipated to be encountered during operations on the former Fort Ord; however, should personnel encounter a suspected toxic chemical munitions, Chemical Warfare Material, or any situation where radiological contamination could become a concern, all personnel will immediately withdraw upwind to a safe location outside of the fragmentation zone of the type ordnance located and contact the UXOSO who will notify the appropriate agencies.

The site will be secure with two UXO Technicians (minimum of one UXO Technician II and one UXO Technician I) until the arrival of the Technical Escort Unit (TEU) or Military EOD. The ESCA RP Team will assist the TEU as directed. Decontamination station setup and operation will be performed by fire department hazardous response personnel.

### *Ordnance Fillers*

In the event of locating a Livens Projector, 4-inch Stokes, or a 4.2-inch mortar and positive identification of the filler remains unknown, the item will be left in place awaiting disposition by TEU who will identify the filler prior to final disposition. Activities related to ordnance with unknown fillers will be conducted in accordance with the SOP for MEC with Unknown Filler presented in Appendix D.

## J-5.5 Hazard Analysis

The ESCA RP Team has analyzed the scope of work tasking to determine the work risk hazards associated with each task. The tasks consist of direct tasks and implied tasks, or sub tasks, to accomplish the work. Table 6-7 presents each activity, the associated hazards, and the control measures planned to prevent accidents.

## J-6.0 MEDICAL MONITORING

Personnel engaged in field activities must be enrolled in a medical surveillance program as required by 29 CFR Part 1910.120(f). Doctors on Duty, 2260 North Fremont Street, (831) 372-6700, is used to provide the medical examinations for WESTON personnel. Qualisys Medical Network Services, 4501 Circle 75 Parkway, Suite C-3250, Atlanta, Georgia, (770) 226-9944, provides medical surveillance and records management. The content of the examination must be designed to determine each individual's fitness for duty, including

ability to work while wearing protective equipment (e.g., respirator, impermeable clothing, etc.).

Personnel performing on-site field activities on this project must present to the UXOSO a physician's certification of completion of a comprehensive medical monitoring examination within the 12 months prior to the beginning of field activities. Additionally, the UXOSO will ensure that workers remain current in their medical monitoring throughout the duration of the project.

## J-7.0 TRAINING

All personnel performing field activities at former Fort Ord sites must have received 40 hours of initial hazardous waste operations and emergency response (HAZWOPER) health and safety training (or have equivalent training) in accordance with the provisions of 29 CFR 1910.120(e)(3) and must be current in their refresher training. Site supervisors responsible for personnel engaged in field activities must have attended a site management training as required by OSHA in 29 CFR 1910.120(e)(4). At least one member of each field team must be current in first aid and CPR training. Copies of training certificates will be provided to the UXOSO.

Exceptions to the HAZWOPER requirements will be reviewed and determined by the UXOSO. There may be field personnel (either subcontractors or ESCA RP Team employees) who are required for certain field activities, but who have not received 40-hour HAZWOPER training or are not current (i.e., have not taken the 8-hour refresher within the prior 12 month period) with respect to the 40-hour HAZWOPER training; they may perform fieldwork at the site if the following conditions are adhered to:

- 1) They have proof from a Medical Physician that identifies their fitness to perform field services. They do not have to meet medical monitoring requirements.
- 2) They are in compliance with all other provisions in the applicable SSHP.
- 3) They have submitted a signed acknowledgement that they have read and understand the applicable SSHP.
- 4) The specific work to be performed is defined in advance.
- 5) The period during which they will perform the work is limited and specified in advance.
- 6) They will conduct fieldwork only under the direct supervision of and accompanied in the field by an LFR Inc. (LFR) or WESTON employee who is current on the 40-hour HAZWOPER training.
- 7) They have received UXO Recognition Training in advance of the field effort.
- 8) They have received LFR's Environmental Awareness Training.
- 9) The operation does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards.



### J-7.1 Site-Specific Training

In addition to the 40-hour initial training and 8-hour refresher training, site-specific training will be conducted. The UXOSO is responsible for developing a site-specific occupational hazard training that will be provided to all ESCA RP Team personnel and subcontractors prior to the start of field operations, as required. This training will cover the following topics:

- Names of personnel responsible for site safety and health
- Safe work practices
- Site history
- Safety, health, and other hazards at site
- Work zones and other locations
- Emergency procedures, evacuation routes, emergency phone numbers
- Personal protective equipment for anticipated task
- Safe use of engineering controls and equipment on the site
- Blood borne pathogens
- Ordnance recognition and reporting
- Prohibitions in areas and zones, including:
  - Site layout
  - Procedures for entry and exit of work areas and zones

In addition, site specific training may include Lead Awareness Training.

### J-7.2 Tailgate Safety Meetings

The SUXOS will conduct tailgate safety briefings for field personnel. This training must as a minimum cover the following topics:

- Tasks to be performed
- Hazards that may be encountered, including their effects, how to recognize symptoms or monitor them, or danger signals
- Emergency procedures (emergency equipment, emergency communications, and route to hospital)
- Rallying Points and safe refuge areas

### J-7.3 Supervisor Meetings

Weekly meetings will be held for all supervisors. The agenda will include the past week's operations, safety issues/problems, corrective actions required or taken, and the upcoming week's activities.

## J-7.4 Training Documentation

The UXOSO will maintain copies of training certificates (HAZWOPER, EOD School Certificate, and CPR/first aid) for personnel participating in field operations. The UXOSO will document site-specific initial training, lead awareness training, tailgate training/subjects, and any other special or additional training.

## J-7.5 Hazard Communication Training

All project work will be conducted in accordance with standard policies for hazard communication. Copies of MSDSs for any hazardous chemicals brought on site will be maintained at the field office. Employees that are exposed to hazardous chemicals brought to the site must receive training on:

- The physical and health hazards of the chemicals in the work area
- Methods and observations that may be used to detect the presence or release of the hazardous chemicals in the work area
- The measures a worker can take to protect themselves from these hazards

## J-7.6 Bloodborne Pathogens Training

Personnel working on this project will be provided blood borne pathogen training review. This training will be given initially at the same time as the site-specific training. The topics covered in the training will include the following:

- An overview of the Blood Borne Pathogen Standard
- Epidemiology and symptoms of blood borne diseases
- Modes of transmission of blood borne pathogens
- Discussion of Exposure Control
- Tasks that may involve exposure to blood and other potentially infectious materials
- Review of the methods that will prevent or reduce exposure
- Selection and use of PPE
- Information on the post-exposure evaluation and follow-up program

## J-7.7 Visitor Training

All visitors to the site will be given a health and safety briefing prior to gaining access to the site. Following this briefing, visitors will be asked to sign SSHP - Plan Acceptance Forms. The UXOSO will also ensure that visitors have applicable health and safety equipment, medical surveillance, and training for the activities/areas they will be visiting. Should

questions arise as to whether or not specific training or equipment is needed - the PHSM will be contacted.

### J-7.8 Ergonomic Training

An Industrial Training Program will be implemented and documented in accordance with OSHA and California Code of Regulations.

## J-8.0 PERSONAL PROTECTION EQUIPMENT

Personal protective equipment required at the site will be at a level necessary to protect personnel. No contamination is anticipated; therefore, a level D ensemble will be worn.

### J-8.1 Level D Protection Ensemble

The minimum level of protection for all personnel at this site is level D. A level D ensemble consists of:

- Short- or long-sleeve coveralls or work clothing
- Kevlar chaps (when operating chainsaw)
- Leather work boots (steel toe if a foot hazard exists [brush clearing and excavation])
- Safety glasses or goggles when an eye hazard exists (brush clearing and hand or mechanical excavation operations)
- Hard hat, when a head hazard exists (brush clearing and around heavy equipment)
- Work gloves, leather or rubber as appropriate
- Hearing protection when working around heavy equipment or powered hand tools
- Respirator when clearing/grubbing rodent nests (APR with N-100 cartridge)
- Sun block and insect repellent as needed
- Demolition operations PPE
- Reflective safety vest usage

### J-8.2 Upgrading PPE

The level of protection is based on what is known about the site. Protection levels may change as site conditions change. The UXOSO monitors site conditions and provides information to the PHSM and RPM as necessary. The UXOSO may increase the levels of protection when necessary but cannot downgrade them without approval from PHSM. PPE requirements specific to lead hazards are provided by the Lead Management Plan.

## J-9.0 SITE CONTROL

The UXOSO will coordinate access control and security on site. Due to the hazardous nature of MEC, only authorized personnel will be allowed in the exclusion zone (EZ). The EZ is the work site, encompassing an area large enough to prevent personnel injuries as a result of MEC operations. The boundary of the EZ will be appropriately identified. During intrusive operations the boundary will be established by the UXOSO based on minimum separation distance. The MSD is the minimum separation distance for unrelated personnel given unintentional detonation of conventional ordnance items. The MSD for all unrelated personnel for an unintentional detonation will be determined by the greatest distance 200 feet, the K50 distance, or the maximum fragment throw distance. During intrusive operations only essential trained personnel are allowed in the EZ.

Visitors must check-in at the field office to gain access to work sites. The UXOSO or a designee will escort visitors to and from work sites. During all operations on site the field supervisors can cease operations if unescorted personnel are observed within the operating area. During work hours ESCA RP Team personnel provide security at the site. Equipment is secured at the end of the workday.

Representatives from regulatory agencies are permitted to enter the site at any time during business hours or any other reasonable time with an escort. Regulatory agencies will be allowed to perform their oversight functions during MEC operations, and are considered essential personnel. Site controls to ensure their safety are included in Section 6.4, Activity 5: MEC Operations.

In the case of an emergency, personnel will exit the site and move to the designated safe area. The safe area will be located upwind of the site. The UXOSO will determine the severity of the emergency. If the emergency warrants site evacuation the UXOSO or SUXOS will notify the Presidio of Monterey (POM) Fire Department and the proper authorities. After property transfer, the UXOSO or SUXOS will notify the Seaside Fire Department, Salinas Rural Fire Department, or the Monterey County Sheriff who will assume emergency response responsibility.

## J-10.0 DECONTAMINATION AND PERSONNEL HYGIENE

In general, no hazardous, toxic, or radiological waste materials are anticipated; thus decontamination for constituents will not be required. Site sanitation will be established and maintained in compliance with 29 CFR 1926.51 and EM 385-1-1, Section 2.

### J-10.1 Potable Water

An adequate supply of drinkable water will be provided on site during work activities.

## J-10.2 Toilet Facilities

As the former Fort Ord work sites are not provided with a sanitary sewer system, temporary toilet facilities will be used (Table J-5). Each temporary toilet will be naturally lighted, ventilated, and lockable from the inside.

Table J-5  
Minimum Number of Facilities

Number of Employees	Number of Facilities
20 or fewer employees	One toilet with seat
More than 20, less than 200 employees	One toilet with seat and one urinal per forty employees
More than 200 employees	One toilet with seat and one urinal per fifty employees

## J-10.3 Washing Facilities

Washing facilities in the EZ will consist of water containers, buckets, soap, and drying towels. Workers exiting the EZ must wash hands and face prior to eating, drinking, or smoking.

## J-11.0 ENVIRONMENTAL AND PERSONAL MONITORING

Exposure to hazardous airborne substances is anticipated only in areas where lead hazards may exist (i.e., small arms ranges, or during structure demolition). Exposure assessment monitoring requirements are provided by the Lead Management Plan.

## J-12.0 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

The frequency and severity of emergency situations can be dramatically reduced through proper implementation of the SSHP. However, if an emergency does occur, quick, decisive action will be required since delays in minutes can create or escalate life-threatening situations. In an emergency situation, site personnel involved in emergency response and rescue must be prepared to respond immediately and all required equipment must be on hand, in proper working order, and ready to use. To ensure rapid, effective response to a site emergency, the procedures and contingency plans outlined in this section will be implemented prior to and during the conduct of any site activities involving exposure to safety and health hazards.

## J-12.1 Identifying Potential Emergencies

Contingency plans for responding to the potential emergency situations have been developed and are presented below. Potential emergencies that may occur include:

- Injury or illness
- Fire/explosion
- Inclement weather

## J-12.2 Emergency Response Responsibilities

In the event of an emergency, the UXOSO will assume the responsibility of being the On Scene Incident Commander (OSIC). The alternate person to assume this role, in the event that the UXOSO is unavailable or incapacitated, will be the SUXOS. The OSIC will have the responsibility of directing all on-site and off-site response personnel. Upon arrival of First Responders (i.e., fire department) and upon determination that no ordnance or explosives hazard exists, the role of OSIC will be turned over to the senior responding member of the fire department.

## J-12.3 On-Site Emergency Response Services

WESTON personnel will provide first aid treatment for minor injuries up to the limits of their qualifications and training. At least one person per team will be First Aid and CPR certified. If necessary the OSIC will contact medical personnel to determine if additional treatment is required. If further treatment is required the fire department providing fire services to Fort Ord will be notified and the injured person will be transported to the Community Hospital of the Monterey Peninsula (CHOMP). If transport by the WestMed ambulance is required, an escort will meet the ambulance at the corner of General Jim Moore Boulevard and Eucalyptus Road and guide them to the accident site.

## J-12.4 Off-Site Emergency Response Services

Off-site emergency response services may include local fire and law enforcement personnel. Emergency phone numbers for off-site response organizations are presented in Table J-6.

Table J-6  
Emergency Contacts

Emergency Contact	Telephone Number
MEDEVAC, Cal Star	(800) 252-5050
Community Hospital of the Monterey Peninsula	(831) 624-5311
Santa Clara Valley Medical Center	(408) 885-5000
WestMed	(831) 655-4040

POM Fire Department	(831) 242-7851 / 7852
POM Police	(831) 242-7853
Seaside Fire Department	(831) 899-6790
Seaside Police	(831) 899-6753
Salinas Rural Fire District	(831) 455-1828
Monterey County Sheriff	(831) 755-3801
WESTON PHSM – Mike Stuart	(505) 837-6566
WESTON Remediation Project Manager-Linda Temple	(831) 384-3221
Poison Control	(800) 222-1222

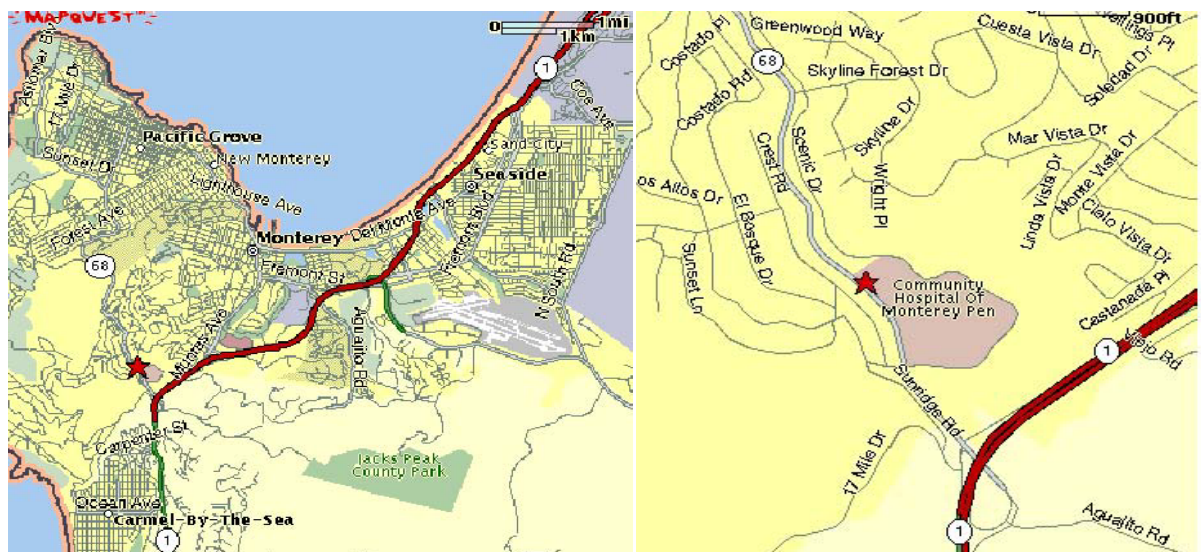
### J-12.5 Route to Hospital

The evacuation route map to the CHOMP from Fort Ord is presented below (Figure J-4). The map will be kept in all vehicles. Directions for evacuation are printed with the map below.

Directions to: Community Hospital of Monterey Peninsula  
23625 Holman Highway, Monterey, California 93940  
(831) 624-5311

1. Access CA- 1 from Seaside or Sand City.
2. CA-1 S becomes CA-1 S/CA-68 W. Take the 68 West exit toward Asilomar.
3. The hospital will be on the right.

Figure J-4  
Route to Hospital



## J-12.6 Emergency Response Training

All site personnel will receive specialized training that will be given by the UXOSO prior to initiating site activities involving safety and health hazards. The content of this training will include the items listed below and will be documented using the site Training Log.

- Emergency chain-of-command
- Communication methods and signals
- Emergency equipment and PPE
- Removing injured personnel from the site
- Emergency contacts, phone numbers and hospital route

## J-12.7 Emergency Equipment

During intrusive operations, the UXOSO will maintain emergency equipment containing the following: an eyewash station, first-aid kit, a fire extinguisher, a portable cellular telephone and radio. Copies of pertinent figures including emergency phone numbers and maps to emergency facilities will be included with this equipment.

For non-intrusive operations, such as geophysical surveying, a first-aid kit, fire extinguisher, and radio will be provided.

### J-12.7.1 Fire Extinguishers

Portable fire extinguishers approved by a nationally recognized testing laboratory, and labeled to identify the labeling organization and the fire test and performance standard, will be provided at each individual job site. Extinguishers will be fully charged and in operable condition.

A dry-chemical type 4A:20B:C extinguisher will be available at each work site. Each piece of heavy equipment, site trailer, and each vehicle will be equipped with at least a 2A:10B:C fire extinguisher.

### J-12.7.2 First-Aid Equipment

First aid kits will be the 16 unit first aid kits and comply with American National Standards Institute Z308.1. A kit will be located in each field team vehicle and at the field office. Kits will be inspected on a weekly basis and missing components replaced immediately.

## J-12.8 Communication Devices

Site communication devices will include portable, hand-held two-way radios for communication between teams and the field office. Cellular telephones will be used to



communicate with off-site individuals and organizations. Radios will be distributed to the SUXOS the UXOSO and to each field team supervisor.

## J-12.9 General Emergency Procedures

Emergency response procedures include all steps to be taken for notifying, evaluating, reacting to, documenting, and following up on a given emergency situation. To ensure all necessary elements are covered, the procedural steps outlined in this paragraph will be implemented for each emergency, regardless of its nature.

### J-12.9.1 Notification

Once the OSIC has been informed of an emergency, the OSIC will alert site personnel to the presence of the emergency by radio. This will be done to:

- Notify personnel and to get their attention
- Stop all work activity as required
- Lower noise levels in order to speed and simplify communication
- Initiate emergency or evacuation procedures

If on-site ESCA RP Team personnel or off-site emergency personnel are to enter the site in response to the emergency, the OSIC will to the extent possible, notify the response personnel about the nature of the emergency, to include:

- What happened and when it happened
- Where on site the emergency situation occurred
- Who is involved and, if possible, the cause of the emergency
- The extent of damage and what hazards may be involved
- What actions should be taken

### J-12.9.2 Assessing the Emergency

Available information related to the emergency and the on-site response capabilities should be evaluated and the information listed below obtained to the extent possible:

- What happened:
- Type of incident
- Casualties involved:
- Victims (number, location and condition)
- Treatment required
- Missing personnel

- Cause of incident
- Extent of damage to structures, equipment and terrain
- What could happen from this point:
- Potential for fire or explosion
- Location of all personnel in relation to hazardous areas
- Potential for emergency affecting the general public or the environment
- What can be done to remedy the situation:
- Equipment and personnel needed for rescue and hazard mitigation
- Number of uninjured personnel available for response
- Resources available on site
- Resources available from off-site response groups and agencies
- Time needed for off-site response resources to reach the site
- Hazards involved in rescue and response

### **J-12.9.3        Rescue and Response Actions**

Based on the information collected during the emergency assessment, the general actions listed below will be taken, with some actions being conducted concurrently. No one will attempt emergency response/rescue until the situation has been assessed and the appropriate response outlined by the OSIC.

- Enforce the Buddy System:
- Allow no one to enter a hazardous area without a partner
- Personnel in the EZ should be in line-of-sight or in communication with the OSIC or his designee
- Survey Casualties:
- Locate all victims and assess their condition
- Determine resources needed for stabilization and transport
- Assess Existing and Potential Hazards and Determine:
- Whether and how to respond
- The need for evacuation of site personnel and off-site population
- The resources needed for evacuation and response
- Contact the required off-site/on-site personnel or facilities, such as ambulance, fire department, police, etc.
- Allocate on-site personnel and equipment to rescue and initiate incident response operations

- Assist in bringing the hazardous situation under complete or temporary control and use measures to prevent the spread of the emergency, i.e., control fire, secure site, etc.
- Remove or assist victims from the area
- Stabilize:
- Administer any medical procedures that are necessary before the victims can be moved
- Stabilize or permanently fix the hazardous condition
- Attend to what caused the emergency and anything damaged or endangered by the emergency (e.g., drums, tanks)
- Transport using either on-site or off-site assets
- Casualty Logging-Record who, time, destination and condition upon transport
- Evacuate:
- Move site personnel to the rally point, a safe distance upwind of the incident
- Monitor the incident for significant changes; the hazards may diminish, permitting personnel to re-enter the site, or hazards may increase and require public evacuation
- Casualty Tracking-Record disposition, condition and location

#### J-12.9.4 Post Emergency Follow Up

Before normal site activities can resume, the site and personnel must be prepared and equipped to handle another emergency. It is also imperative that all federal, state, and local regulatory agencies be notified of the emergency. Therefore, the following activities must be conducted prior to resumption of site activities:

- Notify all appropriate governmental agencies as required (i.e., OSHA must be notified if there have been any fatalities or three or more personnel hospitalized)
- Restock and clean all equipment and supplies utilized or damaged in the emergency
- UXOSO should conduct an accident investigation to determine the cause of the emergency and what preventative measures could be taken to ensure the emergency does not occur again
- Review and revise, as needed the SSHP to reflect the new procedures

#### J-12.10 Contingency Plans

The following paragraphs contain emergency specific contingency plans. These plans outline the procedures for mitigating potential emergency situations. Any changes to these plans must be approved by the PHSM.

### J-12.10.1 Injury or Illness

In the event of an emergency involving personal injury or illness, immediate response will be key in preventing further harm and providing comfort to the affected party. When personnel are injured or overcome by illness, the following procedure will be followed:

- Upon notification of the occurrence and nature of the injury/illness the OSIC will, if deemed necessary, summon emergency personnel
- The OSIC or SUXOS will assess the severity of the injury/illness and direct personnel to provide CPR/First aid as needed
- If immediate life support is not required, or once the victim is stabilized, and if required, transport victim to the appropriate medical facility for further attention

### J-12.10.2 Fire and Explosion

#### ***Small Fire***

A small fire is defined as a fire that can be extinguished with a 4A:20B:C type fire extinguisher. In the event of a small fire, site personnel will take the following actions:

- All unnecessary personnel will be evacuated from the immediate area, to an upwind location
- Extinguish the fire using portable fire extinguishers or by smothering from an upwind location
- Request emergency response assistance (ambulance, fire, police) as needed
- Do not attempt to extinguish a fire, even a small one, involving explosives
- Notify the UXOSO, SUXOS and the RPM

#### ***Large Fires***

In the event of a large fire (or small fire which cannot be extinguished), the following actions will be taken:

- All unnecessary personnel will be evacuated from the site, to an upwind location
- The Local Fire Department, and/or other emergency response services (police, ambulance, hospital, etc.) will be notified as needed by the OSIC
- OSIC will meet Fire Department and direct them to location of fire
- After the Fire Department has arrived, OSIC will notify the Project Manager and RPM

### *Explosion*

In the event of an explosion, all nonessential personnel will evacuate and help secure the site; the OSIC will request the required support equipment and personnel. It is essential that the site be evacuated and no one is allowed to re-enter, except to possibly save a life, until at least 30 minutes or longer if necessary, after the explosion. The OSIC will determine what actions are appropriate.

#### J-12.10.3 Chemical Spills

A spill kit will be maintained at the site in case a chemical being used at the site (such as oil or gasoline) is spilled. The kit will include spill absorbers (spill socks, pads, and pillows), and disposable bags. Approximately 18 gallons of spilled oil, coolants, fuels, or water can be absorbed using the contents of the kit.

All spills will be immediately reported to UXOSO per procedures outlined in the Environmental Protection Plan.

### J-13.0 LOGS, REPORTS, AND RECORD KEEPING

#### J-13.1 Logbook

The SUXOS will keep a log recording the following aspects related to safety at the site:

- Training (initial site specific training, tailgate meetings, etc)
- Site visitors
- Safety issues or problems encountered
- Accidents
- Emergencies

#### J-13.2 Safety Logs

The UXOSO will maintain a daily safety log of all safety related activities. The following information will be maintained in the safety log:

- Date and recorder of log
- Tailgate safety briefing (time conducted, material discussed, etc.)
- Weather conditions
- Significant site events relating to safety
- Accidents

- Stop-work events related to safety
- Safety inspections

### **J-13.3 Training Logs**

The UXOSO will maintain a training log documenting the following information:

- Date of training
- Type of training (initial, tailgate briefing, visitor)
- Workers or visitors attending training
- Signature of UXOSO

### **J-13.4 Equipment Maintenance**

The SUXOS will document the results of daily check of heavy equipment using the Heavy Equipment Daily Inspection List.

### **J-13.5 Record Keeping**

The UXOSO will establish and maintain a filing system on site for health and safety records, reports, and information concerning individual training, medical surveillance, etc. Sections in this filing system will include:

- Training Records - Certificates for training required by 29 CFR1910.120 (40-hour initial HAZWOPER, 8 hour refresher, and supervisory training) will be maintained at the site. Additionally, documentation of CPR and First Aid training will be available at the site
- Medical Monitoring - Documentation of current enrollment (within last 12 months) in a medical monitoring program will be available for each employee working at the site. Documentation will consist of the employee's Health Status Report that is written and signed by the examining physician
- Accident Reports - Copies of any accident/incident reports and follow-up reports
- Plan Acceptance Forms - Copies of the Plan Acceptance Forms documenting that employees have read and understand the SSHP will be maintained at the site

### **J-13.6 Accident Reporting**

If an injury occurs on site, the UXOSO is responsible for completing a WESTON accident report form. The UXOSO must submit a copy of this form to PHSM within 24 hours of the injury. All accidents/incidents must be investigated by the UXOSO. The purpose of the investigation is to determine the causal factors that lead to the accident/incident and to establish corrective actions to prevent recurrence.

## J-14.0 STANDARD OPERATING PROCEDURES, ENGINEERING CONTROLS, AND SAFE WORK PRACTICES

### J-14.1 General Safety

- The following are standard practices for work on Fort Ord sites
- Eating, drinking, chewing tobacco, smoking, and carrying matches or lighters are prohibited in a contaminated or potentially contaminated area or where the possibility of contamination transfer exists
- Field crewmembers should be alert to all potentially dangerous situations, i.e., presence of strong, irritating, unusual, or nauseating odors
- Field crewmembers will be familiar with the physical characteristics of a site during intrusive investigations, including:
  - Wind direction in relation to nearby buildings
  - Accessibility to associates, equipment, vehicles, communication
  - Hot zone (areas of known or suspected contamination)
  - Site access
  - Nearest water sources
- Protective equipment as specified in this SSHP will be used by workers throughout the Fort Ord project
- Use of heavy equipment on site, i.e., trucks, and bobcats, presents additional hazards for site workers. For example, the vision of a backhoe operator is limited, so all field crewmembers should stay clear when backhoe is operating
- Wearing personal protective equipment can result in an impairment of the ability to operate site equipment. All field crewmembers should pay specific attention to decreased performance capabilities resulting from the use of personal protective equipment, such as poor tactile skills when wearing certain types of gloves. Prior knowledge of limitations imposed by the use of such equipment and clothing will allow the worker to assess the decrease in his or her capability to perform field operations in a safe manner
- Wearing of jewelry, such as loose bracelets and necklaces is prohibited in order to avoid its entanglement in site machinery

## J-15.0 PROCEDURES AND PROGRAMS

### J-15.1 Hearing Conservation Program

The purpose of this Hearing Conservation Program is to provide protection for employees from adverse health effects associated with occupational exposure to noise. The program consists of annual audiometric testing of workers, annual employee training, selection, and

use of hearing protection, and noise monitoring. All employees and subcontractors must comply with this program.

### *Audiometric Testing Program*

Audiometric testing will be made available to all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels. Audiometric tests will be performed by a licensed or certified audiologist, otolaryngologist, or physician who is certified by the Council of Accreditation in Occupational Hearing Conservation. Each employee assigned to noisy operations must receive a baseline audiogram prior to assignment and yearly testing thereafter for as long as that employee is exposed to excessive noise levels (8-hour time-weighted average of 85 decibels or greater). Each employee's annual audiogram is compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. (A standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.) This comparison should be done by a physician.

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the employee will be informed of this fact in writing, within 21 days of the determination. The following steps are taken by the UXOSO when a standard threshold shift occurs:

- Employees not using hearing protectors will be fitted with hearing protectors, trained in their use and care, and required to use them
- Employees already using hearing protectors will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary
- The employee will be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary
- The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected

Audiometric tests will be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. tests at each frequency will be taken separately for each ear. Audiometric tests will be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969. The functional operation of the audiometer will be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Audiometer calibration will be checked acoustically at least annually in accordance with OSHA requirement (29 CFR 1910.95, Appendix E).



### *Hearing Protectors*

The UXOSO will make hearing protectors available to all ESCA RP Team and subcontract employees exposed to an 8-hour time-weighted average of 85 decibels or greater. Hearing protection for this project will consist of earmuffs or foam fitting earplugs. The selection of hearing protector will be based upon noise attenuation requirements for the task and worker comfort.

### *Employee Training*

The UXOSO will develop a hearing conservation training program for all employees assigned to noisy work. This training will be a component of the initial site safety training. As a minimum the training will consist of:

- The effects of noise on hearing
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care
- The purpose of audiometric testing, and an explanation of the test procedures

### *Noise Monitoring*

When operations are anticipated to exceed the 8-hour time-weighted average of 85 decibels, the UXOSO will implement a noise monitoring program. The sampling will be used to:

- Verify that appropriate hearing protection is being used by employees
- Identify the boundaries of the noise hazard area in accordance with Section 05.C.07 of EM 385-1-1
- Instruments used to measure employee noise exposure will be calibrated to ensure accuracy

## **J-15.2 Hazard Communication Program**

### *Introduction*

The OSHA Hazard Communications Standard (29 CFR 1910.1200) was promulgated to ensure that all chemicals would be evaluated and information regarding the associated chemical hazards would be communicated appropriately. The goal of the standard is to reduce the number of chemically related occupational illnesses and injuries.

In order to comply with the OSHA Hazard Communication Standard, this written program has been established for work at Fort Ord. All ESCA RP Team and subcontractor personnel working at Fort Ord are included in this program.

### *Hazardous Chemical Inventory List*

Hazardous chemicals used at Fort Ord include industrial chemicals such as fuels, oils, and greases. The UXOSO will maintain an inventory of hazardous chemicals brought onto Fort Ord.

### *Material Safety Data Sheets (MSDSs)*

MSDSs are prepared by manufacturers or producers to provide specific information on the safety precautions and health effects of a particular chemical or mixture. The material safety data sheet (MSDS) contains at a minimum the following information:

- Chemical and common names
- Physical and chemical characteristics
- Physical hazards
- Health hazards
- Primary routes of entry
- Exposure limits
- Carcinogenic potential
- Handling and protective precautions
- Control measures
- Emergency and first aid procedures
- Date of MSDS preparation
- Name and address of manufacturer

When chemicals are ordered, the SUXOS or his designee will specify on the purchase order that chemicals are not to be shipped without corresponding MSDSs. When chemicals and MSDSs arrive, they will be reviewed for completeness by the UXOSO or his designee. Should any MSDS be incomplete, a letter or FAX will be sent immediately to the manufacturer requesting the additional information, ESCA RP Team or its subcontractors will not accept (at Fort Ord sites) any shipped chemical materials without an MSDS.

A complete file of MSDSs for all hazardous chemicals to which an employee of the ESCA RP Team may be exposed will be kept in labeled files on site. MSDSs for chemicals anticipated to be used at the site are provided at the end of this attachment. In the event that an MSDS is missing the employee should immediately contact the UXOSO or PHSM.

MSDSs at this site will be reviewed during periodic audits by the PHSM. Should there be any MSDS that has not been updated within the past year a new MSDS will be requested.

### ***Labels and Other Forms of Warning***

The Hazard Communication Standard requires that hazardous chemicals be labeled by manufacturers. The label must contain the following:

- Chemical identity
- Appropriate warnings
- Name and address of manufacturer, importer, or other responsible party. If the labels are incomplete or missing, ESCA RP Team personnel will refuse the shipment.

When chemicals are transferred from the manufacturer's containers to secondary containers, the Site Manager or UXOSO will ensure that the containers are labeled with the identity of the chemicals and appropriate hazard warnings. Labels for secondary containers can be obtained from the UXOSO.

The entire labeling procedure will be reviewed at least annually and changed as necessary.

### ***Employee Information and Training***

Prior to starting work the ESCA RP Team and its subcontractors' employees will attend a site specific safety and health training course. This course will include Hazard Communication Training to review the contents of this program and learn the hazards associated with each listed hazardous chemical. The training will be performed by the UXOSO. The format will be classroom training.

### ***Training Topics***

The site training or HAZCOM will include:

- An overview of the requirements of the Hazard Communication Standard
- The labeling system and how to use it
- How to review MSDSs and where they are kept
- Chemicals present in work operations
- Physical and health effects of hazardous chemicals
- Methods and observation techniques used to determine the presence or release of hazardous chemicals in the area
- PPE and work practices to reduce or prevent exposure to chemicals
- Steps to be taken to prevent or reduce exposure to chemicals
- Safety-emergency procedures to follow if exposure occurs
- Location and availability of written program/MSDSs
- Equipment Training (Table J-8)

Following the training session(s), each employee will sign and date the training record. Additional training may be provided by the UXOSO, with the introduction of each new hazardous chemical. Records of additional training will be maintained.

### ***On-Site Contractors and Visitors***

WESTON understands that at times other persons may be on the work site. New contractors, subcontractors and visitors will be required to attend site health and safety training to familiarize them with the contents of this document and the specific hazards associated with the former Fort Ord. New contractors, subcontractors, and visitors will be provided with the following information:

- Hazardous chemicals to which the contractor's employees or visitors may be exposed
- Precautions necessary to protect employees during normal operating conditions and foreseeable emergencies
- Labeling system used in the work place

It is the responsibility of the Site Manager and/or UXOSO to ensure that all MSDSs of chemicals to which the contractor's employees or visitors may be exposed are made available at a central location in the work place along with an example of the labeling system in use. Visitors and subcontractors will be informed of the availability of this information and its location.

### ***Program Review***

This written hazard communications program for the ESCA RP Team will be reviewed by the PHSM at least annually and updated as necessary.

## **J-16.0 REFERENCES**

National Institute for Occupational Safety and Health, Occupational Safety and Health Administration, U.S. Coast Guard, and U.S. Environmental Protection Agency (EPA) (NIOSH/OSHA/USCG/EPA). 1985. Occupation Safety and Health Guidance Manual for Hazardous Waste Site Activities. October.

Vetter, Rick. 1999. Identifying and Misidentifying the Brown Recluse Spider, Dermatology Online Journal 5(2):7,  
<http://dermatology.cdlib.org/DOJvol5num2/special/recluse.html> (accessed 12/3/07).

Table J-7

## Hazard Analysis by Site Activity, Activity 1 - Preliminary Activities

Activity	Hazards	Hazard Control
<b>Mobilization of personnel, equipment, and supplies to the project site, setup of office and storage areas</b>	<b><i>Chemical Hazards</i></b> - Non-intrusive activities; therefore, the risk level of exposure to site contaminants during this activity is low. Focus on hazard awareness and change of conditions.	No intrusive measures allowed during this activity. Wear appropriate PPE for skin protection and to prevent dermal contact. Avoid liquid pools and stained areas if possible. An initial visual survey will be conducted to confirm the levels of protection are correct for the activity.
	<b><i>Physical Hazards</i></b> - Slips, trips, falls, tools, terrain, or vegetation; uneven walking surfaces; weather hazards, such as snow and ice; and poor visibility.	The work area will be visually inspected. Housekeeping - Slip, trip, and fall hazards will be either removed or marked and barricaded. Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized; and ice, snow, and mud will be cleared from steps to reduce slip hazards. Work to be completed in adequate natural light or assure sufficient illumination is maintained. Site personnel will conduct an initial walkover, and the “buddy system” will be implemented. Fall protection (railing or Fall Arrest Systems) will be installed if work is to be conducted at a level higher than 6 feet. See field operating procedure (FLD) 02, FLD 11, FLD 12, and FLD 39.
	Manual lifting	Use proper lifting techniques such as keeping straight back, lifting with legs; avoid twisting back; use mechanical equipment or get help from others whenever possible. Heavy loads will be split into smaller loads and/or assistance sought. The path of travel should be cleared prior to the lift. See FLD 10.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire extinguishers will be placed within 50 feet of the fuel storage area, in construction equipment, and strategically in the construction area. See FLD 31 and 32.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel will be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects.

Table J-7  
Hazard Analysis by Site Activity, Activity 1 - Preliminary Activities

Activity	Hazards	Hazard Control
<b>Mobilization of personnel, equipment, and supplies to the project site, setup of office and storage areas (continued)</b>	Electric hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 feet from overhead electric lines. Electrical installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance. Also refer to FLDs 34, 35, and 38.
	Moving/heavy equipment operations.	Only trained, experienced operators will operate equipment. Equipment will be inspected daily. Personnel will be made aware of the hazard and will coordinate carefully during handling equipment operations. Personnel restricted in area of operation. Back up alarms functional. Stay out of the swing area of all equipment and from under loads. No personnel will ride on the equipment unless seats are provided. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLDs 20, 22, 23, and 24.
	Hand tools, manual and power.	Tools will be inspected prior to use. Damaged tools will be tagged out of service until repair can be performed by a qualified person. Use tools properly and for their intended purpose. All power circuits used for hand tools will be protected by a ground fault circuit interrupter. All personnel will be trained on the proper use of all power tools. Lockout/ tagout procedures will be implemented per FLD 42 and 29 Occupational Safety and Health Administration (OSHA) 1910. Also see FLD 38.
	Caught in/between/struck by or against an object.	Workers will stay out of the swing area of all equipment and will not walk, work or stand near equipment being loaded or unloaded. No personnel will ride on the equipment unless seats are provided. See FLDs 20, 23, and 24. Ground personnel near operating heavy equipment will wear hard hats and traffic vests. The handling and placement of heavy equipment will be carefully coordinated. Materials and objects will be inspected for rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects. Backup alarms will be in operable condition. Unnecessary backing will be avoided. Safety toe footwear will be required. Tools will be properly used.

Table J-7  
Hazard Analysis by Site Activity, Activity 1 - Preliminary Activities

Activity	Hazards	Hazard Control
<b>Mobilization of personnel, equipment, and supplies to the project site, setup of office and storage areas (continued)</b>	Inclement weather, heat/cold stress	Workers will be briefed and cognizant of heat and cold stress symptoms. Electrolyte/fluids replacement will be available to workers. Work rest periods will be established according to American Conference of Governmental Industrial Hygienists (ACGIH), National Institute for Occupational Safety and Health (NIOSH) guidelines, and FLDs 05 and 06. Personnel will be monitored. Salt will be applied to walkway and roadway surfaces where ice is a problem. As determined by the UXOSO, operations are to cease during severe weather conditions, see FLD 02 – Inclement Weather.
	Traffic	Work areas will be clearly barricaded using existing gates and appropriate signs displayed. Traffic will be rerouted as necessary. Persons working in traffic area, near roadways or directing traffic will wear high visibility (reflective) vests. Posted speed limit of 15 miles per hour. See FLD 20.
	<b>Biological</b> - Possibility of stinging and biting insects, poisonous snakes; possibility of exposure to poison ivy, sumac.	Use appropriate insect repellants. Training to avoid poisonous plants and avoid contact. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan— First Aid Procedures FLD 43.
	<b>Radiation</b> - Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.

Table J-7  
Hazard Analysis by Site Activity, Activity 2 - Site Preparation Activities

Activity	Hazards	Hazard Control
Site surveying to delineate work areas	<b>Chemical Hazards</b> - The potential for exposure to petroleum and diesel products exist for this task.	Vehicles will not be over-filled, and caution will be used whenever refueling. Refueling will not be conducted within 100 feet of an open flame.
	<b>Physical Hazards</b> - Slip, trips, falls; tools, terrain or vegetation, uneven walking surfaces; weather hazards; poor visibility.	The work area will be visually inspected. Housekeeping - Slip, trip, and fall hazards will be either removed or marked and barricaded. Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow, and mud will be cleared from steps to reduce slip hazards. Work to be completed in adequate natural light or assure sufficient illumination is maintained. Site personnel will conduct an initial walkover, and the “buddy system” will be implemented. Fall protection (railing or Fall Arrest Systems) will be installed if work is to be conducted at a level higher than 6 feet. See FLD 02, FLD 11, FLD 12, FLD 39.
	Manual lifting	Use proper lifting techniques such as keeping straight back, lifting with legs; avoid twisting back; use mechanical equipment or get help from others whenever possible. Heavy loads will be split into smaller loads and/or assistance sought. The path of travel should be cleared prior to the lift. See FLD 10.
	Inclement weather, heat/cold stress	Personnel will be dressed according to weather conditions. Workers will be briefed and cognizant of heat and cold stress symptoms. Electrolyte/fluids replacement will be available to workers. Work rest periods will be established according to ACGIH, NIOSH guidelines, and FLDs 05 and 06. Personnel will be monitored. Salt will be applied to walkway and roadway surfaces where ice is a problem. As determined by the UXOSO, operations are to cease during severe weather conditions, see FLD 02 – Inclement Weather.



Table J-7

## Hazard Analysis by Site Activity, Activity 2 - Site Preparation Activities

Activity	Hazards	Hazard Control
<b>Site surveying to delineate work areas (continued)</b>	Moving/heavy equipment operations	Only trained, experienced operators will operate equipment. Equipment will be inspected daily. Personnel will be made aware of the hazard and will coordinate carefully during handling equipment operations. Personnel restricted in area of operation. Back up alarms functional. Stay out of the swing area of all equipment and from under loads. No personnel will ride on the equipment unless seats are provided. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLDs 20, 22, 23, and 24.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel will be made aware of potential hazards and will coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for ice and rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects. See FLD 10.
	Noise exposure	High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH threshold limit values (TLVs) will be used. Personnel operating chainsaws will use hearing protection. Hearing control program, which consists of audiometric examination; training; use of hearing protection; and sound level pressure monitoring when and where necessary. See FLD 01.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire extinguishers will be placed within 50 feet of the fuel storage area, in construction equipment, and strategically in the construction area. See FLDs 31 and 32.
	Electric hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 feet from overhead electric lines. Electrical installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance. Also refer to FLDs 34, 35 and 38.

Table J-7  
Hazard Analysis by Site Activity, Activity 2 - Site Preparation Activities

Activity	Hazards	Hazard Control
Site surveying to delineate work areas (continued)	<b>Biological</b> - Possibility of stinging and biting insects, poisonous snakes; possibility of exposure to poison ivy, sumac.	Use appropriate insect repellants. Training to avoid poisonous plants and avoid contact. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan—First Aid Procedures FLD 43.
	<b>Radiation</b> - There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.

Table J-7

## Hazard Analysis by Site Activity, Activity 3 - Excavation Activities

Activity	Hazards	Hazard Control
<b>Excavation Activities</b>	<b><i>Chemical Hazard</i></b> - The potential for exposure to petroleum and diesel products exist for this task.	Vehicles will not be over-filled, and caution will be used whenever refueling. Refueling will not be conducted within 100 feet of an open flame.
	<b><i>Physical Hazards</i></b> - Slip, trips, falls; tools, terrain or vegetation, uneven walking surfaces; weather hazards; poor visibility.	The work area will be visually inspected. Housekeeping - Slip, trip, and fall hazards will be either removed or marked and barricaded. Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow, and mud will be cleared from steps to reduce slip hazards. Work to be completed in adequate natural light or assure sufficient illumination is maintained. Site personnel will conduct an initial walkover, and the “buddy system” will be implemented. Fall protection (railing or Fall Arrest Systems) will be installed if work is to be conducted at a level higher than 6 feet. See FLD 02, FLD 11, FLD 12, FLD 39.
	Manual lifting	Use proper lifting techniques such as keeping straight back, lifting with legs; avoid twisting back; use mechanical equipment or get help from others whenever possible. Heavy loads will be split into smaller loads and/or assistance sought. The path of travel should be cleared prior to the lift. See FLD 10.
	Inclement weather, heat/cold stress	Personnel will be dressed according to weather conditions. Workers will be briefed and cognizant of heat and cold stress symptoms. Electrolyte/fluids replacement will be available to workers. Work rest periods will be established according to ACGIH, NIOSH guidelines, and FLDs 05 and 06. Personnel will be monitored. Salt will be applied to walkway and roadway surfaces where ice is a problem. As determined by the UXOSO, operations are to cease during severe weather conditions, see FLD 02 – Inclement Weather.

Table J-7  
Hazard Analysis by Site Activity, Activity 3 - Excavation Activities

Activity	Hazards	Hazard Control
<b>Excavation Activities (continued)</b>	Moving/heavy equipment operations	Only trained, experienced operators will operate equipment. Equipment will be inspected daily. Personnel will be made aware of the hazard and will coordinate carefully during handling equipment operations. Personnel restricted in area of operation. Back up alarms functional. Stay out of the swing area of all equipment and from under loads. No personnel will ride on the equipment unless seats are provided. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLDs 20, 22, 23, and 24.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel will be made aware of potential hazards and will coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for ice and rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects. See FLD 10.
	Noise exposure	High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used. Personnel operating chainsaws will use hearing protection. Hearing control program, which consists of audiometric examination; training; use of hearing protection; and sound level pressure monitoring when and where necessary. See FLD 01.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire extinguishers will be placed within 50 feet of the fuel storage area, in construction equipment, and strategically in the construction area. See FLDs 31 and 32.
	Electric hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 feet from overhead electric lines. Electrical installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance. Also refer to FLDs 34, 35 and 38.

Table J-7

## Hazard Analysis by Site Activity, Activity 3 - Excavation Activities

Activity	Hazards	Hazard Control
<b>Excavation Activities (continued)</b>	<b>Biological</b> - Possibility of stinging and biting insects, poisonous snakes; possibility of exposure to poison ivy, sumac.	Use appropriate insect repellants. Training to avoid poisonous plants and avoid contact. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan—First Aid Procedures FLD 43.
	<b>Radiation</b> - There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.

Table J-7  
Hazard Analysis by Site Activity, Activity 4 - Digital Geophysical Mapping Activities

Activity	Hazards	Hazard Control
<b>DGM surveying to delineate areas with potential discarded military munitions (DMM). Surveying accomplished via towed array methods</b>	<b>Chemical Hazards</b> —The potential for exposure to petroleum and diesel products exist for this task.	Vehicles will not be over-filled, and caution will be used whenever refueling. Refueling will not be conducted within 100 feet of an open flame.
	<b>Physical Hazards</b> —Slip, trips, falls; tools, terrain or vegetation, uneven walking surfaces; weather hazards; poor visibility.	The work area will be visually inspected. Housekeeping - Slip, trip, and fall hazards will be either removed or marked and barricaded. Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow, and mud will be cleared from steps to reduce slip hazards. Work to be completed in adequate natural light or assure sufficient illumination is maintained. Site personnel will conduct an initial walkover, and the “buddy system” will be implemented. Fall protection (railing or Fall Arrest Systems) will be installed if work is to be conducted at a level higher than 6 feet. See FLD 02, FLD 11, FLD 12, FLD 39.
	Manual lifting	Use proper lifting techniques such as keeping straight back, lifting with legs; avoid twisting back; use mechanical equipment or get help from others whenever possible. Heavy loads will be split into smaller loads and/or assistance sought. The path of travel should be cleared prior to the lift. See FLD 10.
	Inclement weather, heat/cold stress	Personnel will be dressed according to weather conditions. Workers will be briefed and cognizant of heat and cold stress symptoms. Electrolyte/fluids replacement will be available to workers. Work rest periods will be established according to ACGIH, and NIOSH guidelines, and FLDs 05 and 06. Personnel will be monitored. As determined by the UXOSO, operations are to cease during severe weather conditions. An adequate supply of drinking water will be provided in all places of work. Cool water will be provided during hot weather. Portable drinking water dispensers will be serviced to ensure sanitary conditions and be clearly marked “drinking water.” Water will not be dipped from containers. See FLD 02 – Inclement Weather.

Table J-7

## Hazard Analysis by Site Activity, Activity 4 - Digital Geophysical Mapping Activities

Activity	Hazards	Hazard Control
<b>DGM surveying to delineate areas with potential DMM. Surveying accomplished via towed array methods (continued)</b>	Moving/heavy equipment operations	Only trained, experienced operators will operate equipment. Equipment will be inspected daily. Personnel will be made aware of the hazard and will coordinate carefully during handling equipment operations. Personnel access will be restricted in area of operation. Back up alarms will be functional. Stay out of the swing area of all equipment and from under loads. No personnel will ride on the equipment unless seats are provided. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. The ground spotter will wear an OSHA approved hard hat. Always use appropriate PPE. See FLDs 20, 22, 23, and 24.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel will be made aware of potential hazards and will coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for ice and rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects. See FLD 10.
	Noise exposure	High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used. Personnel operating small gas engine equipment will use hearing protection. Hearing control program, which consists of audiometric examination; training; use of hearing protection; and sound level pressure monitoring when and where necessary. See FLD 01.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. All storage, handling, and use of flammables and combustible liquids will be in accordance with NFPA 30, 30A and carried out under the supervision of a qualified person. Only labeled/listed containers and portable tanks will be used for the storage of flammables and/or combustibles. Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire extinguishers will be placed within 50 feet of the fuel storage area, in construction equipment, and strategically in the construction area. See FLDs 31 and 32.

Table J-7

Hazard Analysis by Site Activity, Activity 4 - Digital Geophysical Mapping Activities

Activity	Hazards	Hazard Control
<b>DGM surveying to delineate areas with potential DMM. Surveying accomplished via towed array methods (continued)</b>	Electric hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 feet from overhead electric lines. Electrical installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance. Also refer to FLDs 34, 35 and 38.
	<b>Biological</b> —Possibility of stinging and biting insects, poisonous snakes; possibility of exposure to poison ivy, sumac.	Use appropriate insect repellants. Training to avoid poisonous plants and avoid contact. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan—First Aid Procedures FLD 43.
	<b>Radiation</b> —There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.



Table J-7  
Hazard Analysis by Site Activity, Activity 5 - MEC Operations

Activity	Hazards	Hazard Control
<b>MEC safety escort activities, mag &amp; flag operations to locate potential buried UXO, excavation and removal of potential MEC anomalies, and destruction/disposal of UXO and scrap materials</b>	Ordnance	All ordnance items will be positively identified prior to movement. Positively identify any fuzing associated with munition item. If found fuzed, do not handle. If unfuzed, may be moved to central location with approval of UXO Safety Officer. MEC operations will be conducted during daylight hours only. If an unknown ordnance item is found, the SUXOS will be notified. Do not approach a smoking white phosphorous munition; the burning white phosphorous may detonate the explosive burster at any time. Do not transport white phosphorous munitions unless they are immersed in water, mud, or wet sand.
	Demolition Operations-Unintentional Detonations.	All demolition activities will be performed in accordance with 60A-1-1-31.
	Chemical Hazards— White Phosphorous, Explosives.	Avoid movement of a white phosphorous munition. Avoid inhalation of and skin contact with smoke, fumes, and vapors of explosives and related hazardous materials.
	<b>Physical Hazards</b> —Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces; weather hazards; poor visibility.	The work area will be visually inspected. Housekeeping – Slip, trip, and fall hazards will be either removed or marked and barricaded. Geophysical teams will be dealing with uneven terrain. Slips, trips, and fall hazards will be the most prevalent. Sufficient illumination will be maintained to ensure a safe working environment and weather conditions to be continuously monitored. The “buddy system” will be implemented. See FLD 02, FLD 11, FLD 12, FLD 39.
	Manual lifting.	Use proper lifting techniques such as keeping straight back, lifting with legs; avoid twisting back; use mechanical equipment or get help from others whenever possible. Heavy loads will be split into smaller loads and/or assistance sought. The path of travel should be cleared prior to the lift. See FLD 10.
	Inclement weather, heat/cold stress.	Personnel will be dressed according to weather conditions. Workers will be briefed and cognizant of heat and cold stress symptoms. Electrolyte/fluids replacement will be available to workers. Work rest periods will be established according to ACGIH, NIOSH guidelines, and FLDs 05 and 06. Personnel will be monitored. Salt will be applied to walkway and roadway surfaces where ice is a problem. As determined by the UXOSO, operations are to cease during severe weather conditions, see FLD 02 – Inclement Weather.

Table J-7  
Hazard Analysis by Site Activity, Activity 5 - MEC Operations

Activity	Hazards	Hazard Control
<b>MEC safety escort activities, mag &amp; flag operations to locate potential buried UXO, excavation and removal of potential MEC anomalies, and destruction/disposal of UXO and scrap materials (continued)</b>	Moving/heavy equipment operations	Only trained, experienced operators will operate equipment. Equipment will be inspected daily. Personnel will be made aware of the hazard and will coordinate carefully during handling equipment operations. Personnel restricted in area of operation. Back up alarms functional. Stay out of the swing area of all equipment and from under loads. No personnel will ride on the equipment unless seats are provided. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLDs 20, 22, 23, and 24.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel will be made aware of the hazard and will coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects. See FLD 10.
	Noise exposure	High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used. Personnel operating chainsaws will use hearing protection. Hearing control program, which consists of audiometric examination; training; use of hearing protection; and sound level pressure monitoring when and where necessary. See FLD 01.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire extinguishers will be placed within 50 feet of the fuel storage area, in construction equipment, and strategically in the construction area. All explosives to be stored in an approved Bureau of Alcohol, Tobacco, Firearms, and Explosives Type 2 Magazine. See FLDs 31 and 32.
	Electric hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 feet from overhead electric lines. Electrical installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance. Also refer to FLDs 34, 35, and 38.

Table J-7  
Hazard Analysis by Site Activity, Activity 5 - MEC Operations

Activity	Hazards	Hazard Control
MEC safety escort activities, mag & flag operations to locate potential buried UXO, excavation and removal of potential MEC anomalies, and destruction/disposal of UXO and scrap materials (continued)	<b>Biological</b> —Possibility of stinging and biting insects, poisonous snakes; possibility of exposure to poison ivy, sumac.	Use appropriate insect repellants. Training to avoid and identify poisonous plants, insects, and snakes. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan—First Aid Procedures FLD 43.
	<b>Radiation</b> —There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sun block as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.

Table J-7  
Hazard Analysis by Site Activity, Activity 6 - Closeout Activities

Activity	Hazards	Hazard Control
<b>Restoration of work areas and the demobilization of all remaining equipment, temporary structures, and other items from the project site after project completion</b>	<b><i>Chemical Hazards</i></b> —Contaminated source areas will have been removed, therefore, the risk level associated with these activities is low.	No intrusive measures allowed during this activity. Wear appropriate PPE for skin protection and to prevent dermal contact. Avoid liquid pools and stained areas if possible. An initial visual survey will be conducted to confirm the levels of protection are correct for the activity.
	<b><i>Physical Hazards</i></b> —Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces; weather hazards; poor visibility.	The work area will be visually inspected. Housekeeping – Slip, trip, and fall hazards will be either removed or marked and barricaded. Geophysical teams will be dealing with uneven terrain. Slips, trips, and fall hazards will be the most prevalent. Sufficient illumination will be maintained to ensure a safe working environment and weather conditions to be continuously monitored. The “buddy system” will be implemented. See FLD 02, FLD 11, FLD 12, and FLD 39.
	Caught in/between/struck by or against an object.	Workers will stay out of the swing area of all equipment and will not walk, work or stand near equipment being loaded or unloaded. No personnel will ride on the equipment unless seats are provided. See FLD 20, FLD 23, and FLD 24. Workers operating equipment and/or exposed to traffic hazards will wear traffic/reflectorized vests and hard hats. The handling and placement of heavy equipment will be carefully coordinated. A traffic control system for positioning and moving haul vehicles will be established. Heavy vehicle operators may remain in their vehicles only if they have cab over protection. If operators must check loads, loading will cease until the operator is back in the cabin or away from the vehicles in a safe location. Materials and objects will be inspected for rough or sharp edges, and appropriate precautions will be taken to avoid contact. Personnel will wear work gloves and avoid placing hands between objects. Backup alarms will be in operable condition. Unnecessary backing will be avoided. Safety toe footwear will be required. Tools will be properly used.

Table J-7

## Hazard Analysis by Site Activity, Activity 6 - Closeout Activities

Activity	Hazards	Hazard Control
<b>Restoration of work areas and the demobilization of all remaining equipment, temporary structures, and other items from the project site after project completion (continued)</b>	Moving/heavy equipment operations.	Only trained, experienced operators will operate equipment. Equipment will be inspected daily. Personnel will be made aware of the hazard and will coordinate carefully during handling equipment operations. Personnel restricted in area of operation. Backup alarms functional. Stay out of the swing area of all equipment and from under loads. No personnel will ride on the equipment unless seats are provided. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLDs 20, 22, 23, and 24.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire extinguishers will be placed within 50 feet of the fuel storage area, in construction equipment, and strategically in the construction area. See FLDs 31 and 32.
	Noise exposure	High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used. Personnel operating chainsaws will use hearing protection. Hearing control program, which consists of audiometric examination; training; use of hearing protection; and sound level pressure monitoring when and where necessary. See FLD 01.
	Traffic	Work areas will be clearly barricaded using existing gates and appropriate signs displayed. Traffic will be rerouted as necessary. Persons working in traffic area, near roadways or directing traffic will wear high visibility (reflective) vests. Posted speed limit of 15 miles per hour. See FLD 20.
	Electric hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 feet from overhead electric lines. Electrical installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance. Also refer to FLDs 34, 35, and 38.

Table J-7  
Hazard Analysis by Site Activity, Activity 6 - Closeout Activities

Activity	Hazards	Hazard Control
<b>Restoration of work areas and the demobilization of all remaining equipment, temporary structures, and other items from the project site after project completion (continued)</b>	Inclement weather, heat/cold stress.	Personnel will be dressed according to weather conditions. Workers will be briefed and cognizant of heat and cold stress symptoms. Electrolyte/fluids replacement will be available to workers. Work rest periods will be established according to ACGIH, NIOSH guidelines, and FLDs 05 and 06. Personnel will be monitored. Salt will be applied to walkway and roadway surfaces where ice is a problem. As determined by the UXOSO, operations are to cease during severe weather conditions, see FLD 02 – Inclement Weather.
	<b>Biological</b> —Possibility of stinging and biting insects, poisonous snakes; possibility of exposure to poison ivy, sumac.	Use appropriate insect repellants. Training to avoid and identify poisonous plants, insects, and snakes. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan—First Aid Procedures FLD 43.
	<b>Radiation</b> —There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Table J-8  
Equipment and Training Requirements

Task/Activity	Equipment	Inspection	Training
<b>Preliminary Activities: Mobilization of personnel, equipment, and supplies to the project site, setup of office and storage areas, and implementation of explosive storage area security upgrades</b>	Magazine security upgrade equipment to be brought by subcontractor	Subcontractors will be required to conduct daily inspections and necessary maintenance for the equipment. Follow WESTON Inspection requirements per WESTON Health & Safety Program.	Equipment will be operated by qualified operators. An initial site-specific training will be conducted. Daily safety meetings will be conducted before beginning the work. Safe work practices and good housekeeping will be followed. Personnel will be informed of the contaminants and chemicals at the site and availability of Material Safety Data Sheet (MSDS).
<b>Site Preparation Activities: Site surveying to delineate work areas and clearing of brush and small vegetation less than 4 inches in diameter in work areas</b>	Survey equipment to be brought by subcontractor  Weedwhackers and Chainsaws  Schonstedt GA52/72	Subcontractors will be required to conduct daily inspections and necessary maintenance for the equipment. Follow WESTON Inspection requirements per WESTON Health & Safety Program.  Weedwhacker and chainsaw operators will wear face mask, leg protection, hand protection, American National Standards Institute-approved footwear, and hearing protection.  All equipment will be properly stored, inspected, maintained, and/or calibrated on a daily basis.	Workers involved in the clearing operation will be qualified and conduct activities in accordance with OSHA 29 CFR-1910.266 and U.S. ACE EM 385-1-1 Section 31.  Daily safety meetings will be conducted before beginning the work to stress the importance of conducting all activities in a safe manner. Safe work practices and good housekeeping will be followed. Personnel will be informed of the contaminants and chemicals at the site and availability of MSDSs.  Schonstedt's will be operated by qualified operators with 40-hr training with 8-hr refresher course.

Table J-8  
Equipment and Training Requirements

Task/Activity	Equipment	Inspection	Training
<b>MEC Operations: mag &amp; flag operations to locate potential buried UXO, excavation and removal of potential MEC anomalies, and destruction/ disposal of UXO and scrap materials</b>	Hand tools and earth moving machinery, as necessary.  Schonstedt GA52/72.	All equipment will be properly stored, inspected, maintained, and/or calibrated on a daily basis.	Daily safety meetings will be conducted before beginning the work to stress the importance of conducting all activities in a safe manner. Safe work practices and good housekeeping will be followed. Personnel will be informed of the contaminants and chemicals at the site and availability of MSDSs.  Schonstedt's will be operated by qualified operators with 40-hr training with 8-hr refresher course.
<b>Closeout Activities: Restoration of work areas and the demobilization of all remaining equipment, temporary structures, and other items from the project site after project completion</b>	Hand tools and earth moving machinery, as necessary.	All equipment will be properly stored, inspected, maintained, and/or calibrated on a daily basis.	Daily safety meetings will be conducted before beginning the work to stress the importance of conducting all activities in a safe manner. Safe work practices and good housekeeping will be followed. Personnel will be informed of the contaminants and chemicals at the site and availability of MSDSs.



## APPENDIX A

### Site Compliance Checklist

# SITE COMPLIANCE CHECKLIST

	In Compliance?		
	Yes	No	N/A
<b>1. SITE SAFETY AND HEALTH PLAN (SSHP)</b>			
• Corporate Safety and Health Program (CSHP) available upon request.			
• Relevant CSHP Attachments, Programs, and Standard Operating Procedures (SOPs) on site and being followed.			
• Approved Work Plan on site, and SSHP Review Form signed by all site personnel.			
• Work Plan being followed in compliance with Data Item Descriptions (DIDs).			
<b>2. HAZARD ASSESSMENT</b>			
• Personal protective equipment (PPE) selected and provided for initial entry if potential for exposure above permissible exposure limits (PELs) exists.			
• A task hazard assessment has been conducted to identify the hazards associated with each task.			
• A certificate of task hazard assessment has been completed, which identifies the appropriate PPE and mitigation to be used to protect personnel from task hazards.			
<b>3. SITE CONTROL</b>			
• Site control plan is being implemented (i.e., buddy system, communication, site security, etc.).			
• Exclusion, contamination reduction, or support zones established and posted as per SSHP.			
• Site personnel following the standing orders for each zone.			
<b>4. TRAINING PROGRAM</b>			
• All personnel have received the required 40-hour Occupational Safety and Health Administration (OSHA) HAZWOPER training (or its equivalent), 8-hour refreshers, and supervisors course, if applicable.			
• Personnel have received three-day supervised training and the Three-Day Training form has been signed by all personnel.			
• Copies of all training certificates are on site.			
• Emergency response personnel have been designated and trained to handle anticipated emergencies.			
• Employees informed of potential risks and hazards identified for each task they are to perform.			
• Employees notified of chemical, physical, biological, and toxicological properties of identified or suspected contaminants.			
• Hazard Communication Training has been given to personnel who work with products containing hazardous substances, to include a review of the relevant Minimum Separation Distances.			
• Site personnel given OSHA required, hazard-specific training, such as PPE, Hearing Conservation, etc., and training forms completed.			

	In Compliance?		
	Yes	No	N/A
• At least two site personnel are trained in First Aid/CPR.			
<b>5. MEDICAL SURVEILLANCE</b>			
• Medical surveillance provided, as a minimum, to personnel who: are exposed at or above the PEL/threshold limit value (TLV), use respirators, or are a member of the emergency response team.			
• Provisions made for medical surveillance of personnel who receive a documented, unprotected over-exposure or develop signs and symptoms of exposure.			
• Site-specific medical tests, as required by the SSHP, have been conducted prior to site personnel participating in site activities where exposure can occur.			
• Physician's statement retained in employees' records on site.			
• Personnel with potential occupational exposure to blood or other potentially infectious body fluids have been given the opportunity to be vaccinated against Hepatitis B Virus (HBV), and personnel who decline have signed the HBV Vaccination Declination Form.			
<b>6. ENGINEERING CONTROLS, EQUIPMENT, WORK PRACTICES, AND PPE</b>			
• Engineering controls and safe work practices (SWPs) being used whenever feasible.			
• Equipment required by the work practices (WP) is on site, inspected, and in proper working order.			
• PPE has been selected according to the limitations of the PPE, site hazards, and the level and type of hazard.			
• Self-contained breathing apparatus (SCBA) or positive pressure supplied air line, including an emergency escape respirator, provided when known or potential immediately dangerous to life or health (IDLH) conditions exist.			
• All PPE is being inspected, used, cleaned, stored, and maintained in accordance with (IAW) the SSHP.			
• Respiratory protection being issued only to personnel who have been trained and medically approved to use respiratory protective equipment.			
• Personnel using respirators have been tested for the respirator being used.			
<b>7. MONITORING</b>			
• Monitoring equipment being calibrated, operated, and maintained IAW manufacturer's requirements, and calibration, monitoring, and maintenance records available.			
• Monitoring being conducted IAW the WP to:			
– Identify potential IDLH or explosive conditions.			
– Assess personal exposures to chemical and physical hazards.			
– Evaluate exposures when a change in tasks or location occurs.			
– Assess exposures when previously unidentified materials/hazards are identified.			
• High-risk workers monitored initially and all workers monitored if levels indicate the need.			
• Work area and perimeter monitoring being conducted IAW the WP.			

	In Compliance?		
	Yes	No	N/A
• Site monitoring log being completed for all personnel and area monitoring.			
<b>8. HANDLING DRUMS AND CONTAINERS</b>			
• Drums and containers used on site meet Department of Transportation (DOT), OSHA, and Environmental Protection Agency (EPA) regulations.			
• Drums and containers found on site are being inspected prior to being moved or handled.			
• All unlabeled drums and containers being handled as hazardous waste until identified as nonhazardous.			
• Drum and container movement being minimized.			
• Drums/containers opened IAW approved methods listed in the WP.			
• Drum sampling performed IAW the approved sampling plan to classify contaminants in drums/containers prior to bulking, temporary storage, and shipping.			
• Staging of drums and containers being conducted IAW the WP, and staging areas provided with adequate ingress/egress.			
• DOT salvage drums and adequate spill response materials available, and written spill containment program available.			
• Materials are assessed for compatibility prior to being bulked together.			
• Shock-sensitive waste being identified and handled appropriately.			
• Lab packs are opened by properly trained personnel.			
• Tanks and vaults containing hazardous substances handled IAW the WP and confined space procedures, if needed, are being used for entry.			
• Drums and containers being transported off site by a licensed hazardous waste hauler.			
<b>9. DECONTAMINATION PROGRAM</b>			
• Site workers properly trained and complying with the written decontamination procedures.			
• All potentially contaminated equipment, clothing, and PPE are being properly decontaminated.			
• All decontamination solutions are being containerized into approved storage containers at the end of each day.			
• Decontamination procedures evaluated for effectiveness.			
• On-site showers and change houses comply with 29 CFR 199.141.			
<b>10. EMERGENCY RESPONSE</b>			
• Written emergency response plan incorporated in the WP.			
• Written procedures for reporting incidents to local, state, and federal agencies.			
• Emergency response plan rehearsed and amended as needed.			

	In Compliance?		
	Yes	No	N/A
• First aid, burn, and eye wash kits available on site and in each vehicle, with a blood-borne pathogen control kit located with each first aid kit.			
• Adequate type, number, and size fire extinguishers appropriately located on site and inspected weekly.			
• Flammable storage areas properly posted.			
• Employee alarm system IAW the WP and practiced.			
<b>11. ILLUMINATION</b>			
• Adequate light levels provided in all office, storage, and work locations.			
<b>12. SANITATION AND HOUSEKEEPING</b>			
• Adequate supply of potable water available from labeled containers or outlets.			
• Non-potable water sources appropriately labeled, and no open or potential cross connection to potable sources exists.			
• Appropriate type and adequate number of toilets available.			
• Personnel wash facilities provided and located near site, but away from exposure potentials.			
• Shower/change facilities located away from exposure potentials and designed to comply with the requirements of 29 CFR 1910.141.			
• Site being maintained in a neat and orderly fashion, free of trash and debris.			
• Adequate number of trash cans with lids are located on site and emptied regularly.			

REMARKS, OBSERVATIONS, AND RECOMMENDATIONS	
Signature of Auditor:	Date: